Proceedings of the 4th International Conference of Economics, Business, and Entrepreneurship

7 October 2021, Lampung, Indonesia

ICEBE 2021

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Preface

We are delighted to introduce the fourth edition proceedings of the 2021 International Conference of Economics Business & Entrepreneurship (ICEBE). The fourth ICEBE 2021 conference was a joint collaboration from four distinguished universities in Indonesia, which are Universitas Lampung, Universitas Multimedia Nusantara, Universitas Bhayangkara Raya Jaya and Universitas Malahayati. This conference has brought researchers, scholars, and practitioners who were passionate to share their thought and research findings on current business management, accounting, and economics latest issues. The theme of ICEBE 2021 was “Reshaping Business Strategy Through Technological Innovation from Post Covid-19 Recovery”.

The fourth ICEBE 2021 conference received many papers from Indonesia and outside Indonesia, and each submission was peer-reviewed by two anonymous reviewers. After conscientious anonymous peer-to-peer reviews, the total of final papers that passed the minimum requirements to be presented virtually was 65 papers. It was an honor for us, ICEBE 2021 committees and participants, to welcome Dr. Ninok Leksono (Rector of Universitas Multimedia Nusantara), Prof. Dr. Karomani, M.Si (Universitas Lampung), and Dr. David Tereladze (The Department of International Economics and International Corporate Finance, Saint-Petersburg, Russia) and Prof. Prashanth N. Bharadwaj, Ph.D (Elberly College of Business and Information Technology, Indiana University of Pennsylvania) as our keynote speakers.

We also would like to thank our steering chairs, Prof. Dr. Karomani, M.Si (Rector of Universitas Lampung), Dr. Ninok Leksono MA (Rector of Universitas Multimedia Nusantara), Dr. Achmad Farich, dr., MM, (Rector of Universitas Malahayati), and Irjen PoL(P) Dr. Drs. Bambang Karsono., S.H., M.M (Rector of UniversitasBhayangkara Jakarta Raya). They give many essential inputs for the success of the conference. We sincerely appreciate their constant support and guidance. It was also a great pleasure to work with such an excellent organizing committee team, especially for their hard work organizing and supporting the conference. In particular, the Technical Program Committee, led by Dr. Rindu Rika Gamayuni, S.E, M.Si, and the team who made a high-quality technical program for the conference. We are also grateful to Dr. Prio Utomo, S.T. M.P.C, who gave us his continuous and robust support. And we are so thankful for all authors who submitted their papers to this 4th ICEBE 2021 conference.

We believe that the fourth ICEBE 2021 conference provides an excellent forum for all researchers, scholars, and practitioners to discuss how technology innovation influences reshaping the organization's business strategy to maintain the competitive advantage from Post Covid-19 Recovery. We also expect that the future ICEBE conference will be as successful and stimulating as indicated by the contributions presented in this volume.

Warm regards,

Dr Florentina Kurniasari T., S.Sos., MBM
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Determine Company’s Value Moderate by Dividend Policy: Indonesian Stock Exchange Issuers LQ45 2017-2020 Period

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Abstract. Company value is one thing that must always be considered and managed properly. Because in practice, data or information on the issuer company’s market value will be used by several parties (stakeholders) in making decisions. This research aimed to determine profitability and company’s growth that moderated by dividend policy variable. Population in this research that were all issuers included in the LQ45 index for the 2017-2020 period and samples were taken using purposive sampling method and 19 issuers were obtained. The technique for data analysis used Moderated Regression Analysis. This research showed the result that profitability, company growth, and dividend policy have a positive effect on company’s value. In addition, the dividend policy is able to moderate the effect of profitability on company value, but is not able to moderate the effect of company growth of LQ45 issuers listed on the Indonesia Stock Exchange for the 2017-2020 period.

Keywords: Firm Value, Profitability, Company Growth, Dividend Policy.

1 Introduction

Company’s value measurement is one important thing that must be considered and managed properly. Because, in practice data or information on the market value of this company will be used by several parties, namely stakeholders in making decisions. Investors are one of the stakeholders who need information about the value of the company to make decisions in buying or selling shares.

The data, shows that company’s market value in the LQ45 index of the Indonesia Stock Exchange in 2017-2020. This shows that the market value of LQ45 Issuer companies generally has a value of more than double the book value of its assets (investment value). The average value of LQ45 issuers shows that for every Rp100 of the book value of assets or investment value, the market value is Rp274 in 2017, Rp266 in 2018, Rp229 in 2019, and Rp213 in 2020.
According to literature review, factors that can affect company’s value are company size, company growth, profitability, capital structure, and dividend policy. The first variable that is thought to affect company’s value is profitability. Profitability is how much a company able to make a profit. To attract investors to invest, the company needs to have a high company’s value which in this research is proxied by ROE. According to other research, the result shows that profitability is able to increase the company’s value or provide a significant positive effect. Another research result also state that profitability has an affect on company’s value, but in other research actually found different result in their research where the results showed the opposite, namely profitability was not able to affect the company’s value at all.

The next variable is company growth which is variable also possible to affect company’s value. Company growth is the change in the ups and downs of ownership of the overall assets in a company.

Furthermore, the variable that is thought to affect company value in addition to profitability and company growth is dividend policy which is positioned as a moderating variable. The reason dividend policy is used as a variable that is able to moderate the relationship between variables X and Y is because when there is a dividend that distributed to investors, investor confidence in the uncertainty of the investment made will be higher as well.

2 Literature Review
   a. The Value of The Company
      Based on Stated from the experts, company value is a description of the performance of a company that can be seen through the stock price that comes from the demand or supply of public in the market.
   b. Profitability
      The experts from a finance book stated that profitability is the result obtained by the company based on its ability to operate the company and obtain the final result in the form of profits within a certain period.
   c. Company Growth
      The experts from a finance book stated that company growth is the change in the ups and downs of ownership of the overall assets in a company.
   d. Dividend Policy
      Researcher states that dividend policy is a decision made by the company regarding the distribution of profits. This distribution can be divided into 2 decision, this profit may be distributed to shareholder here ini after referred as dividends, or it can also be kept by the company as retained earnings which are then used as investment.
   e. Hypothesis
      H1: Positive influence was found in the relationship between profitability and company value.
      H2: Positive influence was found in the relationship between company growth and company value.
      H3: Positive influence was found in the relationship between dividend policy and company value.
      H4: The relationship between profitability and company growth can be moderated by the dividend policy variable.

3 Methodology and Data Analysis
   a. Data
      This research used 45 companies that are included in the LQ45 index of IDX during the 2017-2020 period as population. The samples that will be used in this study are 19 companies that were taken using a purposive sampling technique.
b. Operational Variable Definition

1) Dependent Variable (Y)
This research used the company value as dependent variable. The formula used to calculate company value in this research is [8]:

\[ \text{Tobin's } Q = \frac{MVA}{VA} \]  

1) Independent Variable (X)

a) Profitability (X1)

Formula used to measure profitability in this research is [9]:

\[ \text{ROE} = \frac{\text{NET INCOME AFTER TAX}}{\text{EQUITY PER SHARE}} \]  

b) Company Growth (X2)

The formula used to calculate company growth in this research is [9]:

\[ \text{COMPANY GROWTH} = \frac{\text{TOTAL ASSET} - \text{TOTAL ASSET}_t}{\text{TOTAL ASSET} - 1} \]  

3) Moderating Variable (Z)

This study uses the Dividend Payout Ratio which is used to measure dividend policy, with the following formula [9]:

\[ \text{DPR} = \frac{\text{DIVIDEND PER SHARE}}{\text{EARNINGS PER SHARE}} \]  

c. Data analysis technique

The Moderate Regression Analysis used in this research is intended to form a research model based on available data namely dividend policy which moderates the relationship between x and y variables. The model used in this research is:

\[ Y = \alpha + \beta_1X_1 + \beta_2X_2 + e \]  

\[ Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3M + e \]  

\[ Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3(X_1*M) + \beta_4(X_2*M) + e \]  

4 Research Result and Discussion

a. Descriptive statistics

Based on the output from SPSS as results, we can explain that descriptive statistics for the Tobin's Q variable have a minimum value of 1.00, this indicates that the company has the same value between the recorded book value and its market value. Furthermore, the maximum value for Tobin's Q obtained a value of 20.71, this indicates that the company has a very good performance which is reflected in the market value which is higher than its book value. This Tobin's Q average value show of 2.6974, which indicates that LQ45 company has a good performance which is reflected in its market value which is higher than its book value.

Based on the output SPSS as results, we can explain that descriptive statistics for the ROE variable have a minimum value of 2.09, this indicates that the company has a net profit that is greater than its equity, meaning that the company is able to use the available capital effectively and efficiently to make a profit. Furthermore, the maximum value for ROE is 139.97, indicating that the company has a net profit that is much larger than its equity, this means that the capital owned by company can now be managed for the company’s operations in the most
effective and efficient way possible, so as to generate maximum profit. The average of this variable is around 20.0294, this proves that on average this LQ45 company has a net profit that is greater than its equity.

Based on the output SPSS as results, we can explain that the descriptive statistics for the Growth variable have a minimum value of 0.09, this indicates that the until now the company is able to compete and maintain itself in the industry through increased sales or increased assets is still less than optimal. Furthermore, the maximum value for Growth is 59.35, indicating that the company is able to maintain its position in the industry either through increased sales or increased assets. The average of this variable is around 12.5206, this proves that on the LQ45 company is able to maintain its position in the industry either through increased sales or increased assets.

Based on the output SPSS as results, we can explain that the descriptive statistics for the DPR variable have a minimum value of 4.93, this indicates that the company chooses to store more of its profits as retained earnings rather than distributing it as dividends to shareholders. Furthermore, the maximum value for the DPR is 176.85, this means that company will prefer the allocation of profits in the form of dividends rather than profit that must be allocated or stored as retained earnings. The average of this variable has around 49.5864, this proves that in LQ45 company has a dividend payment composition that is almost equivalent to retained earnings, this is because in addition to the company's desire to fulfill the company's goals, namely the welfare of the company owners.

b. Classic assumption test

Based on the output SPSS as results of the classic assumption test, it was found that the data in this study has fulfilled all classical assumption tests, so that it was feasible to do regression.

c. Model test

1) Test of F statistic

Based on the output SPSS as test results for calculating F statistic, the F value is 79.922 and for value of significance is 0.000 less than 0.05 (α). So that can be confirmed that join effect occur between variables of profitability, company growth, and dividend policy which has an influence on company value.

2) Coefficient of Determination Test (R2)

Based on the output SPSS as results of the coefficient of R Square test, the value of the R Square is 0.755 or 75.5%. This proves that 75.5% of company value can be explained by the independent variables namely profitability, company growth and dividend policy. As for the remaining, which is 24.5% of company value is explained by another factors outside of this research variable.

d. Testing of hypothesis

1) t statistical results

**Table 1. t statistical results**

```
| Source | SPSS 25 output |
```

Based on output SPSS as the results of the t statistic test in Table, the following equation can be obtained:

\[
\text{Firm Value} = 0.287 + 0.138 \text{ROE} - 0.030 \text{GROWTH}
\]

The interpretation of the results of these equations is as follows:

**H1:** Positive influence was found in the relationship between profitability and company value. Based on the output SPSS as results, shows that the \( x_1 \) variable, namely profitability, has a coefficient value of -0.030 with a significance value less than 0.05 which indicates that there is a positive and significant influence or there is a unidirectional relationship between profitability and firm value. The coefficient that ranges from 0.138 means that when the company increases its ROE performance by 1 rupiah, the value of the company will also increase by 0.138 rupiah. This indicates that when the company has a high ROE number, the company is successful in managing or using its capital for company operations in the most effective and efficient way possible with the aim of further maximizing profits. The results of this study are supported by other research which shows the results that profitability has a positive influence on firm value [3]. Other researchers also obtained the same results as in the research which found that an increase in profitability will also affect the increase in firm value [2].

**H2:** Positive influence was found in the relationship between company growth and company value. Based on the output SPSS as results, shows that the \( x_2 \) variable which in this study is company growth has a coefficient value of 0.138 with a significance value less than 0.05. This means that the growth of the company has a unidirectional relationship or has a positive and significant influence on the value of the company. The more a company grows, it indicates that the company is also able to compete and survive with its position in the industry either by increasing sales or assets. This makes investors indicated or interested in giving their funds to the company. The results of this study are also supported by several studies that have similar results, which the results that the more the company grows, the higher the value of the company it has [10] [12].

### 2) T-Test Results with Moderating Variables

**Table 2. Results of t-test with Moderating Variables**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig</th>
<th>Collinearity Statistics</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Constant)</td>
<td>-0.167</td>
<td>0.016</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROE</td>
<td>0.316</td>
<td>0.026</td>
<td>7.55</td>
<td>0.000</td>
<td>0.035</td>
<td>0.126</td>
<td>7.84</td>
</tr>
<tr>
<td>GROWTH</td>
<td>0.060</td>
<td>0.031</td>
<td>1.94</td>
<td>0.051</td>
<td>0.158</td>
<td>0.115</td>
<td>7.40</td>
</tr>
<tr>
<td>DPR</td>
<td>0.012</td>
<td>0.024</td>
<td>0.25</td>
<td>0.000</td>
<td>0.125</td>
<td>0.006</td>
<td>10.52</td>
</tr>
</tbody>
</table>

Source: SPSS 25. output

Based on the output SPSS as results of the t-test in Table 2, the following equation can be obtained:

\[
\text{Firm Value} = -0.157 + 0.316 \text{ROE} - 0.050 \text{GROWTH} + 0.072 \text{DPR}
\]

The interpretation of the results of these equations is as follows:

**H3** : Positive influence was found in the relationship between dividend policy and company value. Based on the output SPSS as results of the Table 2 above is the result of the t-statistical test on the moderating variable, namely dividend policy. In the table it can be seen that the acquisition of the coefficient value is around 0.072 with a smaller significance of 0.05 which means that the dividend policy has a positive and significant effect on the value of the company.
company. The coefficient value of 0.072 can be explained that when the DPR increases by 1 rupiah it will increase the value of the company by 0.072. When dividend payments in return obtained by shareholders are distributed in increasingly large amounts, investors will be more interested in funding the company. The results of this study are supported by previous researchers, which in his research found that dividend policy will have a positive influence on firm value [5].

3) Moderate Regression Analysis Test Results

Table 3. Moderate Regression Analysis Test Results

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Coefficient Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>-1.175</td>
<td></td>
<td>0.047</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ROE</td>
<td>0.173</td>
<td>2.022</td>
<td>0.047</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GROWTH</td>
<td>0.007</td>
<td>-0.944</td>
<td>0.358</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DPR</td>
<td>0.025</td>
<td>3.313</td>
<td>0.002</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ROE*DPR</td>
<td>0.001</td>
<td>0.001</td>
<td>0.941</td>
<td>1.32</td>
</tr>
<tr>
<td></td>
<td>GROWTH*DPR</td>
<td>0.002</td>
<td>0.001</td>
<td>0.982</td>
<td>0.87</td>
</tr>
</tbody>
</table>

Source: SPSS 25 output

Based on the output SPSS as results of the Moderate regression analysis in Table 3, the following equation can be obtained:

\[ \text{Firm Value} = -1.175 + 0.173 \text{ ROE} + 0.007 \text{ GROWTH} + 0.026 \text{ DPR} + 0.001 \text{ ROE*DPR} + 0.002 \text{ GROWTH*DPR} \]

The interpretation of the results of these equations is:

H4: The relationship between profitability and company growth can be moderated by the dividend policy variable. Based on the output SPSS as results obtained Table 3, the ROE*DPR variable obtained a coefficient of 0.001 with a significance value less than 0.05. This shows that the dividend policy has succeeded in acting as a moderator in the relationship between profitability and firm value, meaning that when the company succeeds in increasing its profitability, which is offset by the implementation of a dividend policy, investors are interested in funding the company, of course, with the aim of obtaining larger dividends. However, the GROWTH*DPR variable has a coefficient value of 0.002 with a greater significance value of 0.05 which means that the dividend policy variable in moderating the relationship between firm growth and firm value is not successful. Thus, hypothesis 4 which states that dividend policy moderates the relationship between profitability and firm growth on firm value is rejected because dividend policy can only moderate the effect of profitability on firm value.

5 Implication and Suggestion for Future Research

Referring to the description of the results in the previous discussion, the conclusions that can be drawn are as following:

1. Positive influence was found in the relationship between profitability and company value. This indicates that when the company has a high ROE number, the company is successful in managing or using its capital for company operations in the most effective and efficient way possible with the aim of further maximizing profits.

2. Positive influence was found in the relationship between company growth and company value. This shows the more a company grows, it indicates that the company is also able to compete and survive with its position in the industry either by increasing sales or assets. This makes investors indicated or interested in giving their funds to the company.
3. Positive influence was found in the relationship between dividend policy and company value. This shows when dividend payments in return obtained by shareholders are distributed in increasingly large amounts, investors will be more interested in funding the company.

4. Profitability has a positive effect on firm value, and dividend policy is able to strengthen the relationship between profitability and firm value. This shows that investors will think that the higher the profitability obtained by the company, the chances of getting dividends will also be higher considering that the company's main goal is to prosper the owner of the company.

References


The Determinant Factors of Tax Consultant’s Ethical Decision Making

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Abstract. The study aims to determine the effect of Machiavellianism, perception of the importance of ethics and social responsibility, ethical considerations and experience toward ethical decision making by tax consultants. Ethical decision making by tax consultants is very important so that when carrying out their work, tax consultants make decisions based on the tax consultant’s code of ethics to encourage tax revenues. The object in this research are registered tax consultants located in Jakarta and Banten. A total of 157 questionnaires were distributes for this research, but only 101 questionnaires could be processed in this research using multiple linear regression methods. The result in this research were Machiavellianism had a negative significant effect on ethical decision making by tax consultant, while perception of the importance of ethics and social responsibility, ethical considerations, and experience had positive significant effect on ethical decision making by tax consultant.

Keywords: ethical considerations, ethical decisions, experience, Machiavellianism, perceptions of the importance of ethics and social responsibility, tax consultants.

1. Introduction

Realization of tax revenues in Indonesia from year 2017 to 2020 has not yet meet the target (Table 1).

<table>
<thead>
<tr>
<th>Year</th>
<th>Target (Trillion Rupiah)</th>
<th>Realization (Trillion Rupiah)</th>
<th>Achievements (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>1.472,7</td>
<td>1.343,5</td>
<td>91,2%</td>
</tr>
<tr>
<td>2018</td>
<td>1.618,1</td>
<td>1.518,8</td>
<td>93,9%</td>
</tr>
<tr>
<td>2019</td>
<td>1.786,4</td>
<td>1.546,1</td>
<td>86,5%</td>
</tr>
<tr>
<td>2020</td>
<td>1.404,51</td>
<td>1.282,8</td>
<td>91,3%</td>
</tr>
</tbody>
</table>

Source: Indonesia Ministry of Finance, 2021

With the implementation of self-assessment system, it is quite difficult for taxpayers to fulfill their tax obligations. Therefore, sometimes, taxpayer need tax consultant. Tax consultants are considered to be able to perform an important role in increasing awareness of taxpayers in paying taxes which can indirectly increase tax revenues. The role of tax consultants in the future will be very important as a partner of the Indonesia Tax Authority to raise public tax awareness and help taxpayers carry out their obligations properly. [1] state that the position of tax consultants is in two different interests: to increasing the amount of state revenue and to minimizing the client’s tax cost. Tax consultant has an obligation to encourage taxpayers to pay taxes correctly in accordance with tax regulations, while also must fulfill the client's wishes to minimize paying the taxes. This condition creates a behavioral dilemma in the tax consulting profession, therefore tax consultants must always act professionally by obeying every applicable regulation and code of ethics.
Ethical decision making is an important factor so that when carrying out their work, tax consultants make decisions based on the applicable tax consultant code of ethics. [2] state that a person's ethical decision making will depend on the individual factors of the person making the decision, therefore it is deemed necessary to examine the factors that can strengthen the ethical decision making of tax consultants. Tax consultant’s ethical decision making is the result of thinking based on an attitude of honesty, adhering to the truth of the data, and being responsible to assist clients in fulfilling their tax obligations in accordance with applicable regulations. This study was conducted to re-examine several factors that are thought to influence ethical decision making by tax consultants. These factors are Machiavellianism, perception of the importance of ethics and social responsibility, ethical considerations, and experience.

Machiavellianism is a process in which the individual gets more rewards than he gets when he does not manipulate[3]. The tax consultant with low Machiavellianism indicating that the tax consultant does not manipulate the data in the client's financial statements and has an affection for the surrounding environment. Tax consultant will adhere to the truth of the data, works honestly, and chooses social responsibility over personal needs so the resulting decisions are ethical. The perception of the importance of ethics and social responsibility is an individual's view of ethics when taking an action and the results of the action are in line with the interests of the community [1]. Tax consultants who realize the perception of ethics and social responsibility are important will behave in accordance with professional ethics so that in providing their services to client accordance with applicable regulations, and have integrity by prioritizing public interest. Thus, the resulting decisions are ethical.

Ethical considerations are the process by which individuals determine whether an alternative decision is right or wrong [4]. Tax consultants who have ethical considerations in themselves in providing their services are not based on an aggressive attitude and are objective when making decisions. Applying an attitude of honesty is a must in his work as a tax consultant and sticking to the truth of the data will resulting the ethical decisions. Experience is a process of learning and increasing behavioral potential obtained from formal and non-formal education [2]. Tax consultants, who have experience in themselves shown by having the ability to carry out their profession, can complete their duties properly and are able to contribute to the workplace and the surrounding environment and have knowledge about their profession so that they will always use ethical considerations in every decision taken and resulting ethical decisions. The various results of previous studies (please refer to literature review section) encourage the authors to re-examine factors that affect tax consultant’s ethical decision making.

2. Literature Review

Tax Consultant’s Ethical Decision Making

Tax consultant is a person who provides tax consulting services to taxpayers in order to perform their rights and fulfill their tax obligations in accordance with tax laws and regulations [5]. The importance of tax consultants rule encourage government to prepare bill draft which contain code of ethic for tax consultant which initiated by tax consultant association. There are four professional tax consulting organizations in Indonesia, namely the Indonesian Tax Consultant Association (IKPI), the Indonesian Public Tax Consultant Association (AKP2I), the Indonesian Tax Practitioner Consultant Association (Perkoppi), and the Indonesian Tax Consultant Professional and Practitioner Association (P3KPI).

Ethical decision making is a process in determining a decision that is in accordance with ethics and the result of the process is a decision that can be in the form of tax advice and the final tax product includes a tax return and reports related to tax planning [3]. Ethical
decision-making is the process of selecting a method from several alternatives and the resulting decisions do not violate legal norms and can be morally justified [1].

Machiavellianism
Machiavellian can be described as a personality that lacks affection in personal relationships, ignores conventional morality, and shows low ideological commitment. Machiavellian personality has a tendency to manipulate others and very low appreciation of others [3]. Machiavellianism in this study is measured by using indicators: ego, manipulative, aggressive, and lack of affection. [7] and [3] state that the Machiavellianism has a negative and significant effect on ethical decision making by tax consultants. However, [8] state that the Machiavellianism has no effect on ethical decision making by tax consultants.

Ha1: Machiavellianism has a negative effect on tax consultant’s ethical decision making.

Perception of the Importance of Ethics and Social Responsibility
Perception of the role of ethics and social responsibility is an individual's view of ethics when going to take an action and the results of the action are in line with the interests of the wider community [1]. Perceptions of the importance of ethics and social responsibility in this study measured by using indicators: professional ethics, tax consultant responsibility, objectivity and integrity. [3], [1], [9], and [8] state that the perception of the importance of ethics and social responsibility has a positive and significant effect on ethical decision making by tax consultants.

Ha2: Perceptions of the importance of ethics and social responsibility have a positive effect on tax consultant’s ethical decision making.

Ethical Considerations
Ethical considerations mean what considerations must be decided and done to overcome ethical dilemmas [9]. Ethical considerations in this study is measured by using indicators: being objective and responsible, avoiding violations at work, and not being aggressive. [3] and [9] state that ethical considerations have a positive and significant effect on ethical decision making by tax consultants.

Ha3: Ethical considerations have a positive effect on tax consultant’s ethical decision making.

Experience
Experience is a process of learning and increasing behavioral potential obtained from formal and non-formal education [2]. Experience in this study is measured by using indicators: the ability to carry out the profession, work time span, and knowledge. [2], [11], and [12] state that experience has a positive effect on ethical decision making by tax consultants.

Ha4: Experience has a positive effect on tax consultant’s ethical decision making.
3. Methodology and Data Analysis
The research object used in this study are registered tax consultants in Jakarta and Banten, with criterias: have handled at least three taxpayers (both private taxpayers and corporate taxpayers), have more than 3 years of working experience, and have attended technical training.

Dependent Variable
Dependent variable in this study is tax consultant’s ethical decision making. Tax consultant’s ethical decision making is a result of thinking based on honesty, sticking to the truth of data and responsibility to assist clients in fulfilling their tax obligations in accordance with tax regulations.

Independent variables
1. Machiavellianism
   Machiavellianism is a behavior based on ego, manipulative, and aggressive nature in carrying out the profession and has no affection for the surrounding environment.

2. Perception of the Importance of Ethics and Social Responsibility
   Perceptions of the importance of ethics and social responsibility are the views of individuals in behaving whether they are in accordance with professional ethics, responsible for their profession, objective and have integrity.

3. Ethical Considerations
   Ethical consideration is the process by which individuals determine whether a decision is right or wrong objectively, not aggressively, and avoiding violations at work.

4. Experience
   Experience is a process of increasing knowledge of the tax consultant's ability to predict and detect tax ethical issues, overcome any existing problems and be able to make decisions.

Data Collection and Sampling Techniques
The data used in this study is primary data and the sampling technique is convenience sampling. Researcher distributed questionnaire to the respondents in two ways: physical questionnaire and google form (online questionnaire).

Data Analysis Techniques
The data analysis technique used in this research is multiple linear regression analysis, with equation:

\[ PKE = \alpha - \beta_1 SM - \beta_2 PPETS - \beta_3 PE + \beta_4 PK - e \]  

Where:
- \( PKE \) = Tax Consultant’s Ethical Decision Making
- \( \alpha \) = Constant
- \( \beta_1, \beta_2, \beta_3, \beta_4 \) = Regression constants
- \( SM \) = Machiavellianism
- \( PPETS \) = Perception of the Importance of Ethics and Social Responsibility
- \( PE \) = Ethical consideration
- \( PK \) = Experience
- \( e \) = Error
4. Research Result and Discussion

The data used in this study are respondents’ answers of questionnaires that have been distributed to the Tax Consultant Office in the Jakarta and Banten areas.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distributed Questionnaires</td>
<td>157</td>
<td>100%</td>
</tr>
<tr>
<td>Returning Questionnaires</td>
<td>108</td>
<td>68.79%</td>
</tr>
<tr>
<td>Unusable Questionnaire</td>
<td>7</td>
<td>6.48%</td>
</tr>
<tr>
<td>Usable Questionnaire</td>
<td>101</td>
<td>93.52%</td>
</tr>
</tbody>
</table>

The following are the results of validity test using Pearson Correlation and reliability test using Cronbach Alpha:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sig. (2-Tailed)</th>
<th>Cronbach’s Alpha Based on Standardized Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax Consultant’s Ethical Decision Making (PKE)</td>
<td>0.000</td>
<td>0.723</td>
</tr>
<tr>
<td>Machiavellianism (SM)</td>
<td>0.000</td>
<td>0.722</td>
</tr>
<tr>
<td>Perception of the Importance of Ethics and Social Responsibility (PPETS)</td>
<td>0.000</td>
<td>0.799</td>
</tr>
<tr>
<td>Ethical consideration (PE)</td>
<td>0.000</td>
<td>0.748</td>
</tr>
<tr>
<td>Experience (PK)</td>
<td>0.000</td>
<td>0.725</td>
</tr>
</tbody>
</table>

Based on the results in Table 3, it can be concluded that all variables are valid and reliable. Furthermore, the result of Normality Test using Monte Carlo exact Kolmogorov-Smirnov, shows sign. value of 0.057 which is greater than 0.05. So it can be said that the regression model is normally distributed. The results of multicolinearity test and heteroscedasticity test also show that data used in this research pass the classic assumption test.

<table>
<thead>
<tr>
<th>Coefficientsa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>Unstandardized Coefficients B</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>SM</td>
</tr>
<tr>
<td>PPETS</td>
</tr>
<tr>
<td>PE</td>
</tr>
<tr>
<td>PK</td>
</tr>
</tbody>
</table>

R 0.647
Adjusted R Square 0.394
F 17.258
Sig. F 0.000

From Table 4, the adjusted R Square value of 0.394 which means that independent variables, namely Machiavellianism, perceptions of the importance of ethics and social responsibility, ethical considerations, and experience explain the dependent variable, tax consultant’s ethical decision making by 39.4%. While the remaining 60.6% is explained by other independent variables that are not used in this study.
The results of F statistical test show the F value of 17,258 with a significance of 0.000 which is less than 0.05. These results indicate that the four independent variables: Machiavellianism, perceptions of the importance of ethics and social responsibility, ethical considerations, and experience simultaneously have a significant effect on ethical decision making by tax consultants. The F value more than F table (17,258 > 2.47) concluded that the sample regression function in estimating the actual value is correct or the model fits.

Based on Table 4, the regression equation is as follows:

$$PKE = 9.351 - 0.169 \cdot SM + 0.129 \cdot PPETS + 0.129 \cdot PE + 0.123 \cdot PK + e$$

(2)

The Machiavellianism variable (SM) shows a t-value of -2.712 with a significance level of 0.008 or less than 0.05. This result indicates that Ha1 is accepted, the Machiavellianism has a significant negative effect on ethical decision making by tax consultants. This result is in line with the researches by [1], [10], [3], [13], [7], and [14].

The perception of the importance of ethics and social responsibility variable (PPETS) shows a t-value of 2.722 with a significance level of 0.008 or less than 0.05 which indicate that Ha2 is accepted. The perception of the importance of ethics and social responsibility has a significant positive effect on tax consultant’s ethical decision making. This result supported by research from [10], [1], [3], [9], [13], and [8].

The ethical consideration variable (PE) shows a t-value of 2.068 with a significance level of 0.041 or less than 0.05 thus Ha3 is accepted. It can be concluded that ethical considerations have a significant positive effect on ethical decision making by tax consultants. This result are in line with the result of research conduct by [3] and [9].

The experience variable (PK) shows the t value of 2.382 with a significance level of 0.019. Ha4 is accepted, which means experience has a significant positive effect on ethical decision making by tax consultants. This results are in line with the results of research by [2], and [11].

In conclusion, all the independent variables affected ethical decision making by tax consultants.

### 5. Implication and Suggestion for Future Research

The results of the study indicate that tax consultant must not have Machiavellianism in order to make an ethical decision. This can be achieved by having more frequent discussions related to considerations in decision making with fellow coworkers so that the decisions are not only for their own benefit. Tax consultant must be increasingly aware that the perception of ethics and social responsibility is important by attending seminars related to professional ethics organized by the Tax Authorities (Direktorat Jenderal Pajak) or tax consultant associations in order to understand more about their profession, better understand and always work in accordance with applicable tax consultant regulations, and make ethical decisions. Tax consultants are also expected to increase their knowledge of their profession by participating in technical training and increasing their certification levels to support their working experience. The Tax Consultant Code of Ethic must be quickly ratified, socialized, and implemented properly.

The suggestions put forward for future research are expanded the respondents, so that the research results can be generalized to all registered tax consultants in Indonesia. Also, future research can also support this quantitative research with qualitative research such as fit up with respondent interview.

### 6. References


**Acknowledgments**

We thanked Universitas Multimedia Nusantara for the support and all the respondents for their willingness to help this research.
Intellectual Capital and Firm Value: Evidence on Indonesia Banking Subsector

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Abstract. This paper aims to examine the relationship between intellectual capital to firm value in the Indonesia banking subsector listed on the Indonesian Stock Exchange 2018-2020 related to resource-based theory and stakeholder theory. According to the resource-based theory, a company that has an extraordinary resource and is having a great empowering resource capability will achieve more competitive advantage than those that did not empower. In accordance to stakeholder theory, in which stakeholder is seen as a significant actor in developing a business, stakeholder theory is defined as a concept of strategic management where the goal is to help companies to strengthen their credibility to related external groups and develop a competitive advantage. However, the intellectual capital affect contribution that could be seen as intangible competitive advantage assets depends on the type of industry and in several pieces of research have a different result of significance on affecting firm value.

Keywords: Intellectual Capital, Profitability, Firm Value, Firm Size, Leverage

1 Introduction

In the current era, knowledge takes such an essential role in an organization since it plays a significant role in business development. Previous economic lenses that mainly focused on the empowerment of tangible assets had shifted to the use of economy with knowledge-based development. The knowledge-based economy could be defined as a source for innovation formation and ICT (Information, Communication, and Technologies) that affect the company’s value [1]. Companies are in current have to face new challenges in maintaining their competitive aspect by always innovating and optimizing their potential assets, which focus on intellectual capital intangible assets. The value creation process that once relied on industry and was oriented towards increasing the number of productions has shifted to the use of knowledge on producing products and services.

As the world turns to the era of globalization that is in unconscious recast the economics view on maintaining and developing a business, investors need not only financial disclosures but also non-financial disclosures to assist the decision-making process since intangible assets are no longer seen as valueless aspect in comparison to financial capital in providing truly sustainable income [2]. The reaction of the non-financial disclosure demand appears since it is seen to be able to provide firms development prospects [3] On developing the intellectual capital value, VAICTM (Value Added Intelligence Coefficient) is used as a method since it could measure the performance of a company's intellectual capital [4]. VAICTM has three components that are Value Added Capital Employed (VACA), Value Added Human Capital (VAHU), and
Structural Capital Value Added (STVA).

The empowerment of intellectual capital is related to resource-based theory in which it is seen as the possible maximized strategic asset that is indicated to be able to maximize the firm value by, in correlation to stakeholder theory, maximizing the performance of all of the components that executed the business process. In correlation to the firm value, it is seen as the main indicator of valuing its performance [5] and also is become an important aspect for stakeholders to maximize. The companies’ goal is mainly to reach the high firm value shown by its continuous growth. This research will use price to book value (PBV) since firm value is generally captured on its PBV ([6]. A higher PBV tends to make the market more confident in the company's future prospects and is affecting the investors’ consideration to trust their fund.

Profitability represented by return on equity (ROE) is used as moderating variable due to the indication of firm performance on moderating the effect relation between the intellectual capital and firm value. Profitability was also used in previous research of Sayyidah and Saifi in 2017 [7], and it showed moderation strengthens the effect of ROI on intellectual capital and firm value. In correlation to intellectual capital, the measurement of the three components of intellectual capital shows that intellectual capital has a significant impact on profitability. This research will use return on equity since it is seen as the bottom-line of accounting ratio of firm profitability. Its growth sustainability is counted as necessary since it influences the point of view of investors on perceiving the company [8]. This research will also use leverage and firm size as the control variable.

There are four intellectual capital (IC) intensive industry groups (banking, electrical, information technologies and services) [9]. This paper uses the subsector involved in High-IC Intensive Industry, the same character used in the previous research conducted by [7]. However, there is no absolute kind of effect relation between intellectual capital to firm value since the contribution of intellectual capital to firm value depends on the type of industry. Moreover, the positive and negative effects of intellectual capital on firm value are both likely to appear since there are lots of contradictory results related to the relation of these two variables.

2 Literature Review

Resource-based theory in the theory of strategic management cleared the idea that if a company has extraordinary resources, it will work in line with the reach of exceptional achievements. Under the resource-based theory, the organization will obtain such a competitive advantage reflected by its good financial performance by owning, controlling and empowering its strategic assets. The strategic assets that an organization could empower is divided into two, tangible and intangible. Tangible assets could be defined as any recorded resources on organizations’ reports such as vehicles, machinery, building, et cetera. Meanwhile, intangible assets consist of any invisible strategic resources such as organizations’ culture, employee knowledge and innovation, et cetera. It is needed to run and develop the combination between these two strategic assets for the purpose of supporting the organizations’ value sustainability. In correlation to intellectual capital, companies will gain more competitive advantage by empowering its asset. One of the assets is the intellectual capital that counted as an intangible strategic asset. Empowering intellectual capital could be seen as an advantage since it indicates that a company has valuable knowledge.

Another theory used in this research is stakeholder theory. The theory ensures the relationship between stakeholders to companies' entire significant actor to have great relation by maintaining and fulfilling overall goals expectations. Stakeholder is seen as the significant actor with direct or indirect interests of companies' existence since companies' prosperity is
depend on the stakeholder’s support. A stakeholder could be defined as a tight-related party that has the power to affects and get affected by organizations’ decisions. This theory also focuses on two aspects: it focuses on managing organizations’ relationship to its overall stakeholder and carries the external probable contradictory organizations’ interests actors. It is in correlation to the firm performance represented by profitability and firm value. In this theory, stakeholder management theory explained that stakeholder capability to affect companies’ management is considered a function of stakeholder power to control its potential resources [10].

Intellectual capital could be defined as a form of valuable integrated knowledge and immaterial ownership that can be used to obtain new customers or investors that bring the firm to a higher bar of competitive advantage [11]. Intellectual capital on this paper is developed using VAIC™ method and is having three components named VACA or (physical capital), VAHU (human capital) and STVA (structured capital). VACA is the ratio between value-added (VA) and actual tangible capital (CE). The VAHU shows the ratio of the contribution of each rupiah invested in HC to the company's added value. Meanwhile, the STVA measures the amount of structural capital needed to generate 1 rupiah of added value (VA), where structural capital is gained from the difference between value-added and human capital.

Profitability could reflect the level of effectiveness in a company and is the reflection of companies’ capability in generating profit. Several indicators could be used on measuring the value of firm performance reflects by profitability value. There are several indicators that can be used, such as profit margin (PM), Operating Margin (OM), Basic Earning Power (BEP), Return on Total Assets (ROA), Return on Equity (ROE) [12]. Investors can use profitability as a point of investment consideration where profitability proxy that has been conducted in this paper is the return on equity (ROE) that reflects the companies’ ability to generate profits from companies’ shareholder investors expressed by return against equity percentage. Return on equity is being chosen as it reflects the effects of all of the other profitability ratios and counts as the single best accounting measure of firm performance on generating profit [12].

Firm value is counted as the primary aspect for a company to carry since it could evaluate companies’ performance [5]. The value of a company could be seen by its stock price, which in this research is being measured by the use of price-to-book value (PBV) as the firm value proxy. Optimizing shareholder prosperity is a goal to achieve by making an effort to obtain a high stock price. It reflects the high return for investors [13]. There are several indicators that could be used to measure the firm value that are price-earnings ratio, Tobin's Q, and price to book value. When there is a previous research coming from Sayyidah and Saifi in 2017 [7] use Tobin’s Q as the firm value proxy, this research will use price to book value; aside from that, it is also explained that firm value is in general captured in book value (PBV) [6].

This paper also uses firm size and leverage as the control variable. Firm size could be seen as a reflection of how big companies scale that could be seen as their amount of asset. This is important due to the consideration aspect that comes with the scale of a company since it is seen as correlated to a manifestation of the previous event that companies have experienced and counts as an advantage for a higher firm size value [14]. Meanwhile, leverage reflects the relation between liabilities to the empowerment of capital assets. It reflects the capability of a company to empower and gain funds to maximize its profit earnings process [14].

3 Methodology and Data Analysis

This paper is explanatory research since it is developed to measure the relationship between two variables. The technique used in developing the sample is purposive sampling. The population of this research is all banking subsector companies listed on the Indonesian Stock Exchange in the 2018-2020 periods. The total sample observations are 84 gained from 28
companies. Secondary data are acquired from www.IDX.co.id and yahoo! Finance. For the data analysis techniques, this paper will use classic assumption tests that are divided into normality test, multicollinearity test, autocorrelation test, and heteroscedasticity test. This paper will also use multiple regression analysis to develop the relation of three components of intellectual capital straight to the firm value and use moderating regression analysis to develop the effect relation between intellectual capital and firm value moderated by return on equity. The determination coefficient will also be used to measure the dependent variable's portion on reflecting the independent variable. For the hypothesis testing, this paper will use both f-test and t-test on developing the effect of intellectual capital on firm value both partially and simultaneously.

Models used in this research:
1. Moderating regression analysis

\[ Y = c + b0 \text{IC} + b1 \text{M} + b3 \text{ICROE} + b4 \text{FS} + b5 \text{LEV} + e \]

Note:
- \( Y \): Firm Value
- \( c \): Constanta
- \( \beta1-\beta5 \): Regression Coefficient
- \( \text{IC} \): Intellectual capital
- \( \text{M} \): Profitability
- \( \text{ICROE} \): Interaction between Intellectual Capital and Profitability
- \( \text{FS} \): Firm Size
- \( \text{LEV} \): Leverage
- \( e \): Error term, that is, the error estimation rate in this research.

4 Research Result and Discussion

a. Statistic Descriptive

<table>
<thead>
<tr>
<th>Predictor</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>IC</td>
<td>84</td>
<td>-39.8463</td>
<td>25.7855</td>
<td>4.050493</td>
<td>6.7709282</td>
</tr>
<tr>
<td>ROE</td>
<td>84</td>
<td>-.3855</td>
<td>.2595</td>
<td>.008174</td>
<td>.1259953</td>
</tr>
<tr>
<td>ICROE</td>
<td>84</td>
<td>-2.0270</td>
<td>1.2499</td>
<td>.008174</td>
<td>.1259953</td>
</tr>
<tr>
<td>FS</td>
<td>84</td>
<td>27.2226</td>
<td>34.8960</td>
<td>30.757344</td>
<td>1.6873241</td>
</tr>
<tr>
<td>LEV</td>
<td>84</td>
<td>.1586</td>
<td>.9321</td>
<td>.788432</td>
<td>.1506237</td>
</tr>
<tr>
<td>PBV</td>
<td>84</td>
<td>-1.3891</td>
<td>2.6842</td>
<td>.386421</td>
<td>.8692829</td>
</tr>
<tr>
<td>VACA</td>
<td>84</td>
<td>-.3396</td>
<td>.5812</td>
<td>.130889</td>
<td>.1445322</td>
</tr>
<tr>
<td>VAHU</td>
<td>84</td>
<td>-3.0937</td>
<td>3.2282</td>
<td>1.293668</td>
<td>1.1295199</td>
</tr>
<tr>
<td>STVA</td>
<td>84</td>
<td>-40.8851</td>
<td>24.5782</td>
<td>2.625946</td>
<td>6.5573378</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>84</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Intellectual capital has a high correlation to competitive advantage where it is seen as, in the resource-based theory, taken from a strategic management perspective, is categorized as a...
strategic intangible asset. There are five categories on interpreting the value of intellectual capital [15]. The mean value for intellectual capital is 4.050493, reflecting that companies observed in this study are generally run in a good performance since the value is above 3.5 but is not yet in the category of successfully performed since its value is below 5. It means that the observed companies are already likely to empower their human and facilities related under the intellectual value point of view and generate it as knowledge of innovation for its competitive advantage. The standard deviation for intellectual capital is 6.7709282 with a 4.050493 mean value. Since the standard deviation has a more excellent value to its mean value, it can be a sum that the data of intellectual capital used in this study is having an extreme gap and is not varies well.

Return on equity (ROE) is the ratio of the company's net income to capital (core capital) [16]. This ratio shows that the percentage level that ROE can generate is scored as essential to shareholders and potential investors because a high increase in ROE will cause stocks to rise. The descriptive statistics for a total of 84 observations show an average value of 0.008174 or 0.8174%, which means that the return on the equity value of the average company data listed in this study is having a rate of return 0.8174% on each equity empowered to profitability purpose. The ratio value that shows a positive number indicates that the company can generate income for each empowered equity. In contrast, the ratio value with a negative number indicates that the company cannot generate income from each empowered equity which can be interpreted as experiencing a loss in equity. That idea means that the greater the return on equity percentage ratio, the better the rate of return for each empowered equity. Comparing return on equity ratio among the observed industry, the low value of return on equity ratio is likely to appear since there is an extreme gap among the data. Comparing the data observed and the mean value, 59 of 84, 70.2380%, the value of the return on equity ratio is above the return on equity ratio average value. It means that there are 59 data values of the return on equity ratio that is seen as considerable on the assumption that the value of the ratio, having a greater value than the average value of the overall observed data and is considered a good rate of return. Other than that, the standard deviation for return on equity is 0.1259953 with a 0.008174 mean value. Since the standard deviation has a more excellent value to its mean value, it can be a sum that the data of return on equity used in this study is having an extreme gap and is not varies well. The low mean is also indicated to appear since the rest of the 25 companies have less value than the average and show negative value.

The results of descriptive statistics for the dependent variable, firm value proxied by price to book value, show that in a total of 84 observations, the price to book value variable shows the average value of a positive 0.386421, which means that ordinary companies listed in this study have 0.386421 market share price in every 1 actual share price or in other word, undervalued. In simple terms, a firm value that shows a number below one is seen as a good value because it means that the stock is selling for less than the original value of the stock. With this traditional assumption, the mean value of the industry in the studies can be interpreted as showing a good value. Taking another frame of reference, investors consider that price to book value with a value below 3 is still acceptable where in addition, it should be noted that there is no specific value that can be used as a criterion for a good price to book value. It means a low price-to-book value (below 1) cannot fully mean that a company has good corporate value and vice versa. It is because the ratio analysis of price to book value varies greatly from one industry to another.

For the VAIC™ components (VACA, VAHU, and STVA), the standard deviation for VACA is 0.1445322 with a 0.130889 mean value. The standard deviation for VAHU is 1.1295199 with a 1.293668 mean value. The standard deviation for STVA is 6.5573378 with a
2.625946 mean value. Since the standard deviation for each component has a more excellent value to its mean value, it can be a sum that the data of intellectual capital components used in this study is having an extreme gap and is not varies well. It is known that the component that contributes the most to the value of intellectual capital is STVA, followed by VAHU, and the component that contributes the least is VACA. It means that the companies observed in this study rely more on structural capital in empowering their overall intellectual capital.

The standard deviation for firm size is 1.6873241 with a 30.757344 mean value. Firm size can affect the policy tendency of risk management where companies with larger sizes will often use hedging [17]. In correlation to its mean and low firm size gap among the data indicates that the average data used in the study is having a similar behavior in terms of corporate firm value hedge. The other control variable, the standard deviation for leverage is 0.1506237 with a 0.788432 mean value. Leverage is described to see how the company's assets are financed by debt compared to its capital. In correlation to leverage mean value, the average value of 0.788432 on leverage can be interpreted that 78.8432% of the company's banking industry assets in this research are obtained by debt funding. Since the standard deviation for firm size and leverage has less value than its mean value, it can be a sum that the data of all control variables used in this study is varied well.

b. Normality Test

According to kolmogorov-smirnov test results, it is found that the Asymp. Sig values obtained by the first model and the second model in this research are both has value above alpha = 0.05. The model has an Asymp value. Sig 0.200> 0.05 and Kolmogorov-Smirnov 0.063. It can be concluded that the residuals are normally distributed since it is fulfilling the Kolmogorov-Smirnov normality test assumption. Gained from multicollinierity test result, it is shows that there is no multicollinearity appears since all predictors show a VIF value of less than 10 (based on the multicollinearity normality test assumption). The results of the multicollinearity test at the model shows the VAIC VIF value of 1.156, ROE of 1.924, IC*ROE of 1.690, FS of 1.485, and LEV of 1.352 and there is no heteroscedasticity occurs since the scatterplot chart shows spread dots both above and below the number of 0 and shows no specific pattern. The results of the Autocorrelation Assumption Test for the model is 1.7732 <1.800 < 2.2268. Based on that result, it is found that the Durbin Watson value in both the first and second models is in the range of dU < d < 4 - dU. So it can be concluded that there is no autocorrelation occurs. Aside from that, the value of adjusted R² shows the value of 0.273, which shows the portion of the proportion effect of VAIC, ROE, IC*ROE, leverage, and firm size on PBV of 27.3%, where the other 72.7% is influenced by other indicators.

c. F-test

<table>
<thead>
<tr>
<th>Table 2. F-Test.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>F-test</strong></td>
</tr>
<tr>
<td>Model 1</td>
</tr>
</tbody>
</table>

The F-test shows the significant relation between intellectual capitals to firm value moderated by return on equity. This model shows a significant simultaneous relation to firm value, involved VAIC, ROE, IC*ROE, Firm Size, and Leverage as predictors. It is shown that the significance value for model is 0.000, where it is value <0.05 (α); assumption of simultaneous relation is fulfilled.
d. T-test

Table 3. T-test.

<table>
<thead>
<tr>
<th>T-test</th>
<th>Predictor</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>IC</td>
<td>0.370</td>
</tr>
<tr>
<td></td>
<td>ROE</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>IC*ROE</td>
<td>0.010</td>
</tr>
<tr>
<td></td>
<td>Firm Size (FS)</td>
<td>0.796</td>
</tr>
<tr>
<td></td>
<td>Leverage (LEV)</td>
<td>0.012</td>
</tr>
</tbody>
</table>

Table t-test above shows that there is a significant partial effect between intellectual capital to the firm value after being moderated by return on equity. The positive moderation effect shows from the once insignificant sig. Value of VAIC to PBV of 0.370 to a significant 0.010 IC*ROE sig. value. Firm size as one of the two control variables shown insignificant relation since it has sig. value is 0.796. It means that there are other variables other than firm size that could affect firm value. Leverage has shown a significant effect to firm value of 0.012< 0.05. It means that leverage is one of the other variables that could affect firm value.

The results of the statistical test that once supports a positive effect on firm value is not supported by this study's results. The study supports the results of [18], [19], and [20] stated that intellectual capital does not affect firm value and is having contradictive results to [7] and [5]. Since the contribution of the intellectual capital is likely to depend on the industry and supports both negative and positive results in between two variables, both kind of relation is likely to appear. The insignificant relation is in line with the indication of incapability of stakeholders on valuing the intellectual capital as in [19] research. It stated that intellectual capital resource investment is risky since it comes along with the low degree of certainty of its outcome. The idea of justification is supported by the research of [20], claiming that investment in the form of intellectual capital resource is considered to have negative value due to its result unpredictability. This is likely to appear in correlation to the stakeholder and resource-based theory since intellectual capital is less prioritized to be seen as investment considerations and stakeholder strategic assets point of view.

In contradictory, the interaction test results show that return on equity can moderate the relationship of intellectual capital to firm value in the banking subsector. It means the companies are able to optimize its return on equity to innovate and determinate the company's routine processes and infrastructure that supports the banking industry's employees in improving the performance of their intellectual capital. Aside from that, in correlation to the theories at the research result, it shows an idea indication that the availability of return on equity is more prioritized to use as investment considerations rather than an independent intellectual capital. Under the resource-based theory, an independent intellectual capital is not a valuable intangible strategic asset but is a valuable strategic asset when it is seen with the moderation effect of return on equity. Moreover, under the stakeholder theory, a stakeholder is more likely to put more prioritize to return on equity rather than intellectual capital as a delineation on how to give value to an organization.
5 Implication and Suggestion for Future Research

Based on the t-test result, Intellectual capital does not have a significant relation to firm value. The insignificant value indicated that stakeholder does not see intellectual capital as a prioritized consideration of strategic assets on valuing a firm. The moderation result shows that return on equity could moderate stakeholders' point of view on valuing the intellectual capital on the influence to firm value. Firm size, taking a role as a control variable, shows an insignificant relation to firm value. The insignificant relation is likely to appear due to the very tight gap in the studied industry. The tight gap could be interpreted as the value does not show a significant differentiation value representing an advantage. Leverage shows a significant value that could be interpreted that the empowerment of debt on funding the assets in the banking industry is seen as essential for investment consideration. In the hope for further research, researchers can conduct research by using other moderating variables, haven’t been used, unlike return on equity and return on investment, which are also thought to be able to moderate. In addition, researchers can also use other sectors due to a statement that the contribution of the relationship between intellectual capital and firm value depends on the sector that being studied.

References


Effect of Liquidity and Solvency on Company Performance

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Accounting Study Program, Faculty of Economics, Malahayati University¹,²

Abstract. To determine the effect of liquidity and solvency on the performance of manufacturing companies listed on the Indonesia Stock Exchange for the 2017-2019 period. This study aims to explain the relationship of variables through hypothesis testing. The sample is 34 companies. The results showed that the three independent variables had a significant effect on company performance.

Keywords: ROA, ROE, Liquidity, Solvency

1 Introduction

The business world is characterized by a very rapid development which is increasing to meet the needs of the community so that the competition that occurs between companies is increasing. In these circumstances, every company must always pay attention to market conditions and market prospects so that companies can take advantage of every opportunity that exists and turn opportunities into profits. [1]

Competition in the manufacturing industry will make companies increasingly able to improve their performance so that goals and desires can be achieved. Indonesia Stock Exchange (IDX) is an industry engaged in manufacturing, where manufacturing is the main support for industrial development in a country, so that industrial development can be utilized. This development can be seen from the aspect of overall industrial performance and product quality.

In order for a company to get big profits, it must increase the amount of production that can be sold to the public. One of the most important production factors is the capital used by the company in financing operations to ensure the survival of the company. Therefore, financial managers must be able to plan well the amount of working capital in the future [2].

Financial statements reflect results of operations of a company at a certain time. For analysts, financial statements are very important information in the economic of a company. ROA has a function to the level of efficiency of managing to earn a profit. The greater the ROA value in a company, the better the level of income obtained, but if the ROA value is smaller, it indicates a decrease in income. The level of ROA owned by the company depends on the policies and strategies carried out by the management.

Liquidity makes the company meet its short-term obligations. Solvency shows the short-term and long-term liabilities of the company. And profitability shows the ability to earn a profit [3]. The liquidity ratio has a close relationship with profitability, because liquidity will indicate the level of availability of working capital needed in the company's operational activities. If a company wants to have of liquidity, the will be in high safety [4].

Return on Equity which shows the company's ability to generate net income and profits. ROE can be used as a measure of the efficiency of the use of internal capital operated by
banking companies. The greater the ROE value, the greater the bank's Research conducted by [5].

2 Literature Review

Trade Off Theory
is the idea that companies choose how much debt and equity funds to use. The company bases its funding decisions on the optimal capital structure formed with the benefit of tax savings on the use of debt against the cost of losses.

Return On Assets
Return On Assets is net profit which is inversely proportional to the overall assets to generate profit [6].

Return On Equity
is the of the total comes from the deposit. Return On Equity, the company generates a net profit [7].

Liquidity
are short-term liabilities at maturity describes the company's ability to meet an ongoing basic [8].

Debt to Asset Ratio
is used to measure total debt and total assets. How much debt-financed assets will affect asset management [9].

Debt to Equity Ratio
is to value equity in the amount that the borrower gives to the owner. Thus, the ratio serves to determine each capital used as a debt guarantor [10].

3 Methodology and Data Analysis

Were all listed on the IDX from 2017-2019 yang totaling 185 was based on certain characteristics and criteria. Manufacturing companies that were sampled were 34 companies for three years, so the number of samples used to analyze the data was 102 manufacturing companies.

<table>
<thead>
<tr>
<th>Table 1. Variable Operational Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>Dependent</td>
</tr>
<tr>
<td>Independent</td>
</tr>
</tbody>
</table>
Measurement of variables
Variable Dependent - Return On Asset (EAT/total assets). Content analysis is used to measure performance corporate, [11].

Independent Variable
The independent variables in this study are:

\[ CR = \frac{\sum CA}{\sum CL} \times 100\% \]

\[ DAR = \frac{\sum Debt}{\sum TA} \times 100\% \]

\[ DER = \frac{\sum Debt}{\sum TE} \times 100\% \]

Notes;
CR = Current Ratio
CA = Current Asset
CL = Current Liability
DAR = Debt To Total Assets Ratio
DER = Debt to Equity Ratio

Hypothesis testing methods
The hypothesis was developed using a regression tool. Corporate performance by ROA
a. \( ROA = \alpha + \beta_1 \text{Liquidity} + \beta_2 \text{DAR} + \beta_3 \text{DER} + e \) .... (1)
b. \( ROE = \alpha + \beta_1 \text{Liquidity} + \beta_2 \text{DAR} + \beta_3 \text{DER} + e \) .... (2)

Coefficient Of Determination
The value of \( R^2 \) ranges from 0 to 1, where \( R^2 = 0 \) indicates there is no relationship between the dependent variable and the independent variable, whereas if \( R^2 = 1 \), it means that the relationship is perfect. The independent variable is more than 2, then \( R^2 \) is adjusted as the coefficient of determination [12].

Simultan test
Performed together using a significance of 0.05 (\( \alpha = 5\% \)).

Test Partial
Knowing the behavioral ability of each individual from the dependent variable. Experiments were carried out using a significance of 0.05 (\( \alpha = 5\% \)).

Classical Assumption
Multiple linear regression must meet the requirements of classical assumptions such as normality test (Kolmogorov-Smirnov, multicollinearity test if it has a value greater than 0.1 and a VIF value less than 10 [12].

Multiple linear regression analysis
Statistical methods for hypothesis testing in this study are:

\[ \text{ROA/ROE} = \alpha + \beta_1 \text{CR} + \beta_2 \text{DAR} + \beta_3 \text{DER} + e \] .... (3)

Note :
ROA = EAT/total assets
ROE = EAT/total equity
α = Constanta
β = Coeffisien Variable
CR = Current assets liability
DAR = Debt To Assets Ratio
DER = Debt To Equity Ratio
e = Standard error

4 Research Result and Discussion

Table 2. Descriptive Table

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>4.5663</td>
<td>9.54727</td>
<td>-40.00</td>
<td>58.95</td>
<td>102</td>
</tr>
<tr>
<td>ROE</td>
<td>-123.1678</td>
<td>1352.31979</td>
<td>-13643.60</td>
<td>225.37</td>
<td>102</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likuiditas</td>
<td>125.7115</td>
<td>153.18294</td>
<td>.85</td>
<td>691.70</td>
<td>102</td>
</tr>
<tr>
<td>DAR</td>
<td>869.9392</td>
<td>7787.02193</td>
<td>-221.45</td>
<td>78693.10</td>
<td>102</td>
</tr>
<tr>
<td>DER</td>
<td>29.9955</td>
<td>36.47914</td>
<td>.08</td>
<td>194.75</td>
<td>102</td>
</tr>
</tbody>
</table>

It is known that the minimum ROA is -40.00 and the ROE is -13,643.60 and the maximum ROA is 58.95 and the ROE is 225.37. While the minimum liquidity variable is 0.85, DAR - 221.45 and DER 0.08 and maximum liquidity is 691.70, maximum DAR is 78.693.10 and maximum DER is 194.75.

Table 3. Normality Distribution

<table>
<thead>
<tr>
<th>Variable</th>
<th>Kolmogorov-Smirnov Z</th>
<th>Sig</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>1.944</td>
<td>.001</td>
<td>Normal</td>
</tr>
<tr>
<td>ROE</td>
<td>5.154</td>
<td>.000</td>
<td>Normal</td>
</tr>
<tr>
<td>Liquidity</td>
<td>2.096</td>
<td>.000</td>
<td>Normal</td>
</tr>
<tr>
<td>DAR</td>
<td>4.815</td>
<td>.000</td>
<td>Normal</td>
</tr>
<tr>
<td>DER</td>
<td>2.081</td>
<td>.000</td>
<td>Normal</td>
</tr>
</tbody>
</table>

From the table above, all the variables used are normally distributed so that it can be continued with the next test.

Classic Assumption Table

From the table above, it can be seen that every 1% increase in liquidity will increase ROA by 0.008%, as well as DAR where every 1% increase in DAR will increase ROA by 0.000%. However, is different from DER where a 1% increase reduces ROA by 0.034%. The liquidity variable has no effect on ROA, but DAR has no significant negative effect on ROA. In this
study, the DAR variable has a significant effect on ROA equal to the results [13] where the DAR partial effect on ROA but has no effect on ROE. However, the DER has no effect on ROA, in contrast to the research of where a significant effect on ROA. In the research of, the DAR and DER variables have an effect on ROA.

Table 4. Liquidity Regression Table DAR and DER to ROE

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE B</th>
<th>Beta</th>
<th>t</th>
<th>Sig t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>12.870</td>
<td>9.693</td>
<td>1.328</td>
<td>.187</td>
<td></td>
</tr>
<tr>
<td>Liquidity</td>
<td>-0.017</td>
<td>0.434</td>
<td>-0.002</td>
<td>-0.399</td>
<td>.691</td>
</tr>
<tr>
<td>DAR</td>
<td>-0.174</td>
<td>0.010</td>
<td>-1.002</td>
<td>-203.224</td>
<td>.000*</td>
</tr>
<tr>
<td>DER</td>
<td>0.583</td>
<td>0.184</td>
<td>0.016</td>
<td>3.176</td>
<td>.002*</td>
</tr>
</tbody>
</table>

* significance level

ROE = α + β1LK + β2DAR + β3DER + e

From the table above, it can be seen that every 1% increase in liquidity will reduce ROE by 0.017% ROE and 0.174% DAR where every 1% increase in DAR will reduce ROE by 0.174%. However, it is different from DER where every 1% increase in DER will increase ROE by 0.583%. The liquidity variable has no effect on ROE but DAR and DER have a significant effect on ROE, this is the same as the results of the study [14] where the DAR and DER have a significant effect on ROE.

5 Implication and Suggestion for Future Research

Liquidity no effect on ROA. ROE and DAR have an effect on ROA and ROE, while the DER variable has no effect on ROA but has an effect on ROE. Suggestions for further research should increase or increase the number of sample companies, increase the research period, and not limited to one sector on the Indonesia Stock Exchange for better research results. Other independent and dependent research variables can also determine their effect, and can use different proxies to measure the level of the variables. For further researchers, it can increase the observation period and other independent variables so that further research can be better.

References

[5] Yulita et al. (2020). The Effect of Capital Adequacy Ratio (Car), Non Performing Loan (Npl),
Net Interest Margin (Nim), Operational Cost and Operating Income (Bopo) and Loan To Deposit Ratio (Ldr) on Return on Assets (Roa),” Din. Accounting, Finance. and Banking., vol. 9, no. 2, pp. 189–200.


Is Reasonable to Use Mudharabah in Sharia Pricing Assets?

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Abstract. This study aims to test whether several variations of mudharabah can be used as a substitute for the risk free rate in developing the Sharia CAPM model, as evidenced by the absence of differences in test results between the CAPM and Sharia CAPM models. The method used in this study is the average difference test using the Mann-Whitney test. The test results show that there is no significant difference between the average CAPM and SCAPM values. This means that using various variations of mudharabah in the calculation of pricing assets as a substitute for the risk free rate is a reasonable step, especially for sharia economic activists.

Keywords: Sharia CAPM, Mudharabah, Zakat

1 Introduction

One of the analytical tools used in terms of estimating the return value of a security is Capital Assets Pricing Model (CAPM) proposed by Sharpe [1]. By using a single index model, CAPM explains that the expected return of a security is a linear function of the security’s risk-free rate and systematic risk against its market return with beta coefficient (β). The use of beta coefficient as a measurement tool of systematic risk is considered relevant in describing the true risk because it cannot be minimized or eliminated by carrying out a portfolio, therefore it remains in every security or portfolio. Mathematically, CAPM can be represented in the following equation:

\[ E(R_p) = R_{Fr} + \beta (R_{mr} - R_{Fr}) + e \]

The use of the interest component as the risk-free rate (\(R_{Fr}\)) has created a distinctive polemic among the performers of the sharia economic because it is classified as prohibited usury (riba). Therefore, an alternative asset pricing model which complies with sharia values or with Sharia Compliant Asset Pricing Model (SCAPM) is needed.

Some researchers have offered the alternative substitute of \(R_f\) or interest rate, such as Tomkin and Karim [2] who proposed eliminating the interest component in all Islamic economic practices, so that each contract or transaction is based solely on the principle of buying and selling (ba‘i), leasing (ijarah), lending and borrowing (qard), philanthropy (shodaqoh), and cooperation (masyarakah). The models that can developed from Tomkin and Karim’s proposals are:

\[ E(R_p) = \beta R_{mr} \]  

(1)

El-Ashker [3] developed the theory of CAPM by using Zakat rate of 2.5% as the minimum rate. The model developed based on the proposal of Askher becomes:

\[ E(R_p) = Zkh + \beta ((R_{mr} - 2.5\%) + e) \]  

(2)
Later, this model developed by Derbali et al [4] with several modifications, in the form of using sukuk rate or Islamic bonds as the substitute for the risk-free rate by imposing zakat on sukuk returns and market returns as costs intended to clean the assets as required in sharia. The model developed by Derbali et al is mentioned as follows:

\[ E(\alpha) = Rs + \beta (Rm - \frac{Rs}{\theta'} - \partial M), \]

(3)

The equation for the purification of market return by zakat (market purification) is:

\[ \partial M = 1 - \frac{\theta' \sigma M + (1-2.5\%)R}{(1-2.5\%)Rm}. \]

(4)

Furthermore, Shaikh [5] proposed the use of the growth of Gross Domestic Product (\(\Sigma PP\)) as a substitute for the risk-free rate, with the argument that every investment made must generate the income above GDP growth as the average productivity value of the society in an area. This is because Islam advocates someone to work productively and produce better value over time. The CAPM modification model developed based on the Sheikh’s proposal is illustrated as follows:

\[ [E(\alpha) = \Sigma PP + \beta (R_{mr} - \Sigma PP) + \epsilon]. \]

(5)

Hanif [6] more specifically proposed using the inflation rate as a substitute for \(R_f\) in CAPM. This model is considered the most relevant model and approaches the classic CAPM model because the \(R_f\) component is formed by calculating the inflation in its determination. The model developed by Hanif is described as follows:

\[ [E(\alpha) = \text{Inf} + \beta (R_{mr} - \text{Inf}) + \epsilon]. \]

(6)

Although the efforts have been made to provide the alternative models, the models that have been previously stated have several issues to be discussed. For example, model proposed by El-Askher about the use of 2.5% of zakat cannot be used because Zakat is a function of obligations or expenses while \(R_f\) a function of income. Because the difference in function, therefore zakat cannot replace \(R_f\). Besides, in Islamic jurisprudence, zakat can only be issued on non-productive fixed assets that have reached a certain amount or nisab and the possession has reached at least one year or haul. Empirically, the terms of nisab and haul can make it difficult for investors to determine their investment, because it can be an illogical choice when investors reject an investment that offers returns below the nisab and haul but can cover the cost of investment capital.

Likewise, the model developed by Derbali which used the sukuk rate is irrelevant because of its constant nature during the sukuk period so that it cannot anticipate changes in economic and market conditions that occur during the sukuk issuance period which results in not dynamic and difficult to predict changes in asset prices as a result of changes in economic conditions and markets.

Furthermore, the model developed by Shaikh is also inappropriate because the use of interest is different from PP in its function as an instrument of monetary control. When the government wants the economy to move more productively, interest will be lowered and vice versa, so that between interest and society’s production value (PP) will have the opposite direction. The use of \(\Sigma GDP\) is irrelevant in describing the actual market conditions.
Next, the model using inflation developed by Hanif has several weaknesses, due to the fact that inflation is only one component in the formation of $R_f$ besides the cost of capital and the level of business risk, so if it is used only inflation as a substitute for $R_f$, the $E(R)$ value of Islamic CAPM will always be smaller than the classic $E(R)$ of CAPM.

Based on the criticism of the Islamic or Sharia CAPM models that have been developed previously, this study offers another approach, namely the value of profit sharing or mudharabah from an industrial business in an area, which in this study uses the equivalent value of 12 months mudharabah deposits in the industry of Islamic banking because it is a type of profit sharing that has been popular and published regularly so it is easy to use as a risk benchmark.

2 Literature Review

A. Sharia principles in Sharia CAPM

Sharia CAPM is an alternative model developed from CAPM but using the assumption of adherence to Islamic Sharia principles. These sharia principles include:
1. No cost of interest.
2. Imposing zakat for income.

B. The Development of the SCAPM model

This study offers an alternative substitute for $R_f$ in the SCAPM model, namely the mudharabah equivalent. The formulation of the model is carried out by following the principles in the Islamic economy.

The first rule in model development is that there is no risk-free rate in the Islamic economic system. It means that all investments must be considered risky so that the $R_f$ component of the CAPM must also be replaced with another yield value that describes the principles of Islamic economics, in this case, the average value set. Return mudharabah ($R_{md}$). The risk level at $R_{md}$ is calculated using the Standard Deviation (SD), and the model formed must take into account the $R_{md}$ level with the Standard Deviation ($R_{md} \pm SD$).

The second principle in Islamic economics is the obligation to pay zakat on the value of return received. Researchers have different opinions about the obligation to fulfill the Haul period and the nisab of the assets subject to the responsibility of zakat, so a model is formed to accommodate these differences of opinion.

Furthermore, the SCAPM model is described based on the different approaches to determining the standard deviation (SD) and the difference in the challenge of zakat collection, with the following model variations:
1. The SCAPM model, without SD and subject to zakat, is only used for investors who believe that zakat is collected directly without waiting for the haul and nisab, are as follows:
   \[
   SCAPMR_{md} z = (1 - Z) R_{md} + \beta (Rm - ((1 - Z) R_{md})) \tag{9}
   \]

2. The SCAPM model with SD above the equivalent of mudharabah and subject to zakat of 2.5%, for investors who believe that zakat is collected directly without waiting for the haul and nisab, are as follows:
   \[
   SCAPM_{(Rmd + SD)(Z)} = (1 - Z) (Rmd + SD) + \beta (Rm - ((1 - Z) (Rmd + SD))). \tag{10}
   \]
3. The SCAPM model with SD is below the mudharabah equivalent and is subject to zakat of 2.5%, for investors who believe that zakat is collected directly without waiting for haul and nisab, are as follows:
\[ \text{SCAPM}_{(Rmd-SD)(Z)} = (1-Z) (Rmd - SD) + \beta (Rm - ((1-Z) (Rmd - SD))). \] (11)

4. The SCAPM model without SD and without being subject to zakat, for investors who believe that the imposition of zakat must reach the haul and nisab, are as follows:
\[ \text{SCAPM}_{Rmd} = Rmd + \beta (Rm - Rmd). \] (12)

5. The SCAPM model with SD above is equivalent to mudharabah without the imposition of zakat, for investors who believe that zakat imposition must reach haul and nisab, are as follows:
\[ \text{SCAPM}_{(Rmd + SD)} = (Rmd + SD) + \beta (Rm - (Rmd + SD)). \] (13)

6. The SCAPM model with SD under the mudharabah equivalent and without being subject to zakat for investors who believe that the imposition of zakat must reach the haul and nisab is as follows:
\[ \text{SCAPM}_{(Rmd - SD)} = (Rmd - SD) + \beta (Rm - (Rmd - SD)). \] (14)

3 Methodology and Data Analysis
A. Methodology
The research will be done as a quantitative descriptive study, using the theory of pricing model, particularly the Capital Asset Pricing Model (CAPM) and various variations of the Sharia Compliant Asset Pricing Model (SCAPM). The data used in this research are daily data from stock returns contained in the Jakarta Islamic Index (^JKII), daily market return of Jakarta Composite Index (^JKSE), risk-free rate using BI rate or BI 7-days Repo Rate, and the equivalent return mudharabah using return mudharabah of Islamic Banking in Indonesia during period from January 2014 to December 2018.

The model used in this research is linear regression. The testing toward the strength of the mudharabah equivalent variable was carried out by using partial significance test. On the other hand, to find out whether SCAPM model could be used as the alternative of CAPM conventional, then the average difference test between SCAPM and CAPM is carried out.

B. Data and Analysis
This research is designed with some stages to achieve the purpose of the research. The stages of completion are written as follows:
1. Calculating daily return of individual shares of each company that meets the criteria in ^JKII,
2. Calculating return value of daily market (Rm) from JKSE,
3. Calculating beta (\(\beta\)) risk value,
4. Calculating the value of daily risk-free rate (Rf)
5. Calculating the value of daily equivalent mudharabah (Rmd)
6. Calculating the estimated daily return for ^JKII index using CAPM with the following equation (1), and calculating the estimated daily return for ^JKII index of each variation of SCAPM mudharabah by using general equation (9) to (14).
7. Testing the significance of the linear regression model from each variation of SCAPM mudharabah by using the partial significance test (t-test), applying significance criteria of 95% (\(\alpha = 5\%\)).
8. Testing the average difference test between CAPM and each mudharabah SCAPM variations using the Mann-Whitney test, under the condition:
   a. If the significance value of Mann-Whitney (Asymp. Sig) < 0.05, then there is a significant difference of the average between CAPM and the variation of SCAPM Mudharabah.
   b. If the significance value of Mann-Whitney (Asymp. Sig) > 0.05, then there is no significant difference between CAPM and the variation of SCAPM Mudharabah.

4 Research Result and Discussion

Data of linear regression from the variation of SCAPM mudharabah model that passes the classical assumption calculations, is then tested for the significance of each variable with the following results:

Table 1. Significant Test Result to Variant Model of SCAPM Mudharabah

<table>
<thead>
<tr>
<th>No.</th>
<th>MODEL</th>
<th>Dependent Variable</th>
<th>Independent Variable</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SCAPM_{RmdZ}</td>
<td>( Rm - ((1 - Z) Rmd) )</td>
<td>( Rm - ((1 - Z) Rmd) )</td>
<td>Significant</td>
</tr>
<tr>
<td>2</td>
<td>SCAPM((Rmd+SD)Z))</td>
<td>( Rm - ((1 - Z) (Rmd + SD)) )</td>
<td>( Rm - ((1 - Z) (Rmd + SD)) )</td>
<td>Significant</td>
</tr>
<tr>
<td>3</td>
<td>SCAPM((Rmd - SD)Z))</td>
<td>( Rm - ((1 - Z) (Rmd - SD)) )</td>
<td>( Rm - ((1 - Z) (Rmd - SD)) )</td>
<td>Significant</td>
</tr>
<tr>
<td>4</td>
<td>SCAPM_{Rmd}</td>
<td>( Rm - Rmd )</td>
<td>( Rm - Rmd )</td>
<td>Significant</td>
</tr>
<tr>
<td>5</td>
<td>SCAPM((Rmd + SD))</td>
<td>( Rm - (Rmd + SD) )</td>
<td>( Rm - (Rmd + SD) )</td>
<td>Significant</td>
</tr>
<tr>
<td>6</td>
<td>SCAPM((Rmd - SD))</td>
<td>( Rm - (Rmd - SD) )</td>
<td>( Rm - (Rmd - SD) )</td>
<td>Significant</td>
</tr>
</tbody>
</table>

Source: processed data with spss

Based on the results of the calculations in Table 1, it is found that in all variations of the SCAPM mudharabah model, the independent variable which contains all variations of mudharabah return is significant. Therefore, it can be concluded that all mudharabah variables with all their variations can serve as an alternative to the risk-free rate.

After testing the significance of the mudharabah variable, the next step is comparing the CAPM model with all variations of the mudharabah SCAPM model using the Mann-Whitney average difference test with the following results:

Table 2. Mann-Whitney test Result

<table>
<thead>
<tr>
<th>No.</th>
<th>MODEL</th>
<th>Significant Value of Mann-Whitney</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SCAPM_{RmdZ}</td>
<td>0.981</td>
<td>There is no significant difference between CAPM dan SCAPM_{RmdZ}</td>
</tr>
<tr>
<td>2</td>
<td>SCAPM((Rmd+SD)Z))</td>
<td>0.978</td>
<td>There is no significant difference between CAPM dan SCAPM((Rmd+SD)Z))</td>
</tr>
<tr>
<td>3</td>
<td>SCAPM((Rmd - SD)Z))</td>
<td>0.948</td>
<td>There is no significant difference between CAPM dan SCAPM((Rmd - SD)Z))</td>
</tr>
<tr>
<td>4</td>
<td>SCAPM_{Rmd}</td>
<td>0.988</td>
<td>There is no significant difference between CAPM dan SCAPM_{Rmd}</td>
</tr>
<tr>
<td>5</td>
<td>SCAPM((Rmd + SD))</td>
<td>0.961</td>
<td>There is no significant difference between CAPM dan SCAPM((Rmd + SD))</td>
</tr>
<tr>
<td>6</td>
<td>SCAPM((Rmd - SD))</td>
<td>0.961</td>
<td>There is no significant difference between CAPM dan SCAPM((Rmd - SD))</td>
</tr>
</tbody>
</table>

Source: processed data with spss
The results of the two different average tests of Mann-Whitney show that there is no significant average difference between CAPM and all variations of the SCAPM mudharabah. Thus, it can be stated that the expected return of all variations of the SCAPM mudharabah is relatively similar to the expected return of CAPM, so that the mudharabah SCAPM model can be used as an alternative to CAPM.

The findings generated in this study are mentioned as follows:

1. Mudharabah return variable has a significant effect on the dependent variable, so it is concluded that this variable can replace the risk-free rate variable as in the CAPM model.
2. The results of the two-average difference test between the CAPM model and all the mudharabah SCAPM variations show that there is no significant average difference between both of them, so it can be stated that all variations of the mudharabah SCAPM model can be used as an alternative to the classic CAPM model. And therefore, the use of variation mudharabah is a reasonable step for the sharia economics stakeholders.

5 Implication and Suggestion for Future Research

The existence of the mudharabah variable with all of its variations that have proven to be significant and capable of being a substitute for the risk-free rate or interest, has implications for carrying out similar researches in the formation of non-interest-based financial models, which in turn can be the beginning for the realization of usury-free economic practices.

Although in this study the value of mudharabah return is proxied in the average return in mudharabah contract in Islamic banking, ideally, what is used as a proxy for mudharabah return is the average profit sharing in certain industrial sectors according to the type of asset sector to be invested.

The mudharabah SCAPM model needs to be tested for the accuracy in empirical practice. Therefore, it is necessary to carry out further research that examines the strength of the mudharabah SCAPM model in various market conditions, such as when anomalies occur, in the conditional market, or when other variables are present. In addition, it is also necessary to test the use of the return mudharabah variable by using proxies for other industrial sectors, apart from the Islamic banking industry.

6 Reference


Finding the Gap between Economic Globalization Index and Economic Growth Challenges in Indonesia, Malaysia, and Thailand

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Department of Economics Development, University of Lampung1,2,3,4

Abstract. The relationship of globalization to economic growth is a topic of debate in the literature on economic growth and development. Several studies have found positive effects of globalization on growth through effective allocation of domestic resources, diffusion of technology, increased factor productivity, and capital gains. On the other hand, others argue that globalization harms growth in countries with weak institutions, political instability, and in countries that specialize in activities that are not effective in the globalization process. This study investigates the gap between economic globalization represented by KOF Index and economic growth in selected ASEAN countries such as Indonesia, Malaysia, and Thailand. It supported a competitive business climate in free trade, reducing barriers and taxes in international trade, attracting foreign investment in line with improving infrastructure, financing exports, and building facilities in the form of infrastructure as a place for business transit and business licensing processes. So that in the absence of easy access in economic globalization, rapid progress in innovation, market opening, and an increase in productive investment can lead to continued economic growth. However, economic openness is accompanied by restrictive policies that protect domestic industries and defense investment policies.

Keywords: Economy Growth, Globalization, KOF Index, Trade Performance

1 Introduction

Globalization is an interesting phenomenon and cannot be separated from people's lives in various parts of the world. This phenomenon is interesting to research because economic systems have become more interconnected between countries.[1]. Furthermore, have various opinions in influencing economic growth in a country. Globalization is a process that puts the world's people in reach or connects in all aspects of their lives, whether in culture, economy, politics, technology, and the environment [2].

The benefits of globalization can increase economic freedom and provide access to information, empowering communities and making them authorized regulators of corporate activity, responsibility, and accountability [3]. Globalization results in a process that further unites many countries' economies encourage the global economy, and globalizes economic policies. Globalization is a challenge for almost all countries in the world by demanding more
comprehensive economic openness. According to Nowbutsing's (2014) research, openness is a means to promote growth through research and development and broader market access.

The impact of globalization is the rapid liberalization of trade and investment by developed countries to developing countries, including ASEAN countries, such as Indonesia, Malaysia, and Thailand. These three countries have a market share. The dominance in southeast Asia is related to the flow of foreign direct investment. Direct investment flows indicate the country's contribution in attracting investments directly related to the use of factors of production.

![Fig. 1. FDI Inflow in Three ASEAN Countries, 2018-2020 (Source: UNCTAD, 2021)](image)

Based on the picture above, the total flow of foreign investment into Thailand is higher than Malaysia and Indonesia. This is following the strategic position of Thailand as the epicenter of manufacturing production factors in the Southeast Asia region. In addition, in the tourism sector, Thailand develops and opens tourist taps from abroad with various segmentation, ranging from health to rural.

FDI is one of the critical sources of financing for developing countries, including ASEAN countries that are, on average, developing countries. With an immense contribution to development, asset transfer, technology, and managerial skills can boost economic growth. In the theory of economic growth, there are capital accumulation factors that affect economic growth.

Globalization opens up domestic product market opportunities to competitive international markets. Nevertheless, on the other hand, it will open the global product into the domestic so that domestic goods will be more rivaled or less competitive with foreign goods. Domestic goods, especially in developing countries with labor-intensive characteristics, are increasingly abandoned due to the presence of foreign goods produced with high technology, causing low selling prices and domestic goods that cannot compete on a price basis. This leads to declining employment opportunities, increasing unemployment, and poverty rates.

The relationship of globalization to economic growth is a contentious topic in the literature on economic growth and development. Several studies have found positive influences of
globalization on growth through effective allocation of domestic resources, diffusion of technology, increased productivity, and capital addition. In contrast, others argue that globalization harms growth in countries with weak institutions, political instability, and in countries that specialize in ineffective activities in the process of globalization.

The level of globalization of countries can be seen from the KOF Globalization Index (KonjunkturforschungsstelleI), first published in 2002 by ETH Zurich. The KOF Globalization Index scale is between 1 to 100. The higher the index value indicates that the level of globalization that occurs in a country is higher. Measuring globalization is not easy because much of its coverage is strongly linked to each other and including everything in a model presents the problem of collinearity, but if one scope is missing from the model, it also raises serious biases.

Economic globalization is a process of economic activity and trade, where various countries around the world become market forces and increasingly integrated without barriers or territorial boundaries of each other. Todaro and Smith (2006) suggest that the economic definition of globalization is the increasing openness of a country's economy to international trade, international funds flows, and foreign investment.

Economic globalization is understood by Dreher (2006) as the flow of goods, capital, and services as well as the information and perceptions that accompany market exchange. Some experts argue that globalization is essentially an economic process and can therefore be measured by trade and Foreign Direct Investment (FDI) [4].

The economic success of a country can be determined by economic growth. Because the higher the rate of economic growth, the process of increasing a country's output so that the prospects for a country's development are better. Therefore, this study took on the topic of, “Finding the Gap between Economic Globalization Index and Economic Growth Challenges in Indonesia, Malaysia, and Thailand.”

2 Literature Review

a) Economy Growth

According to Todaro and Smith (2006), economic growth is a process of continuously increasing productive capacity in an economy over time, resulting in a level of national income and output that is getting bigger and greater. The three components of economic growth that are important to every society are (1) capital accumulation, including all new investments in land, physical equipment, and human resources through improvements in health, education, and work skills, (2) population growth that ultimately leads to the growth of the labor force, (3) technological advances that are widely interpreted as new ways of getting work done.

Some factors that affect economic growth:
1. Land and other natural wealth
2. The number and quality of the population and labor
3. Capital goods and technology levels
b) Economic Globalization

Economic globalization is a process of economic activity and trade in which various countries worldwide become market forces and are increasingly integrated without barriers or territorial boundaries of each other. Economic globalization is closely related to free trade. In the KOF Globalization Index, economic globalization is measured by variable indicators of trade openness (50%) consisting of trade activities of goods and services seen from exports and imports and the diversity of trading partners.

The globalization of sub-dimensional trade openness includes variables that measure the exchange of goods and services over long distances. The Swiss Economic Institute uses the number of exports and imports of goods as a share of GDP, exports and services imports as part of GDP, and variables that measure diversification of trading partners in trade in goods. Diversification of trading partners is calculated as the opposite of the average Herfindahl-Hirschmann trading partner concentration index for the export and import of goods. The Herfindahl-Hirschmann trading partner concentration index measures companies to industry and indicates the amount of competition between them. The more spread a country trades through different trading partners, the higher the value of the variable.

Then also with the second variable indicator, namely financial openness (50%) consisting of Foreign Direct Investment (FDI), portfolio investment, foreign debt, foreign exchange reserves, and trade balance components. Based on the work of Lane and Milesi-Ferretti (2007), KOF Swiss Economic Institute includes the variable number of foreign direct investment stocks and liabilities as a share of GDP, the number of assets and investment obligations of international equity portfolios as a share of GDP, the number of shares in and out of international portfolio debt securities and bank loans and deposits as part of GDP and international reserves excluding gold as a share of GDP. As the sole flow variable, it includes payment and receipt of primary income as a share of GDP. Furthermore, it consists of income and payments arising mainly from providing labor and capital across borders. According to Todaro and Smith (2006), economic growth is a process of increasing

<table>
<thead>
<tr>
<th>Table 1. Approach De fact KOF Economic Globalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicators and Variables</td>
</tr>
<tr>
<td>---------------------------</td>
</tr>
<tr>
<td><strong>Trade Globalisation (50.0)</strong></td>
</tr>
<tr>
<td>Trade-in goods</td>
</tr>
<tr>
<td>Trade-in services</td>
</tr>
<tr>
<td>Trade partner diversity</td>
</tr>
<tr>
<td>Trade agreements</td>
</tr>
<tr>
<td><strong>Financial Globalisation (50.0)</strong></td>
</tr>
<tr>
<td>Foreign direct investment</td>
</tr>
<tr>
<td>Portfolio investment</td>
</tr>
</tbody>
</table>
Research Methodology

This method is used because the data panel is a combination of two types of data, time series, and cross-section, that can provide more data so that it will produce a greater degree of freedom and by using panel data can overcome the problem omitted-variable [5].

Data is sourced from ETH Zurich and the World Bank. The variables used in this study are summarized in the table as follows:

<table>
<thead>
<tr>
<th>No</th>
<th>Variable Name</th>
<th>Symbol</th>
<th>Period</th>
<th>Unit</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Economy Growth</td>
<td>EG</td>
<td>Yearly</td>
<td>Percentage</td>
<td>World Bank</td>
</tr>
<tr>
<td>2.</td>
<td>Economic Globalization</td>
<td>ECO</td>
<td>Yearly</td>
<td>Percentage</td>
<td>ETH Zurich</td>
</tr>
<tr>
<td>3.</td>
<td>Government Expenditure</td>
<td>GOV</td>
<td>Yearly</td>
<td>Percentage</td>
<td>World Bank</td>
</tr>
</tbody>
</table>

To obtain a general picture of the results of this study and in the framework of testing hypotheses as a temporary answer to the solution of the proposed problems can be seen through the equation of function:

\[ EG = \beta_0 + \beta_1 ECO_{1t} + \mu \]

where:
- \( EG \) = economic growth (percent)
- \( ECO \) = economic globalization (index)
- \( t \) = 1, 2, . . . , \( t \), showing the dimensions of the time demand (time series)
- \( \beta_0 \) = constant
- \( \beta_1 \) = regression coefficient to economic growth
- \( \mu \) = error term

Estimation using the method Random Effect Model (REM). Method Random Effect Model (REM) uses a variable approach to distraction (error term) to find out the relationship between cross-individual and time-in-time [6]. This tends to see changes between individuals and between times. The previous modeling was the Fixed Effect Model with an extras dummy variable. It can reduce the number of degrees of freedom (degree of freedom) which ultimately reduces the efficiency of the estimated parameters. So the REM method comes with perfecting the FEM model [5]. Rem model equation as follows [7]:

\[ Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \mu_{it} \]
By treating $\beta_0$ as fixed (fixed), we assume that constants are random variables with average values $\beta$. Moreover, constant values for each unit across individuals (cross-section) it can be written as follows:

$$\beta_0i + \epsilon_i = 1, 2, ... N$$

Where $\mu_i$ is a random error term with zero average value and variation is $\beta_0^2 \mu$ (constant). Essentially, we want to say that all the individuals who entered the sample were taken from a larger population, and they had the same average value for constants ($\beta_0$), and the individual differences and constant values of each individual will be reflected in the error term ($\mu_i$). Thus the equation Random Effect Model (REM) can be re-written to:

$$Y_{it} = \beta_{it} + \beta_0X_{1it} + \beta_0X_{2it} + \epsilon_{it} + \mu_{it}$$

$$Y_{it} = \beta_{it} + \beta_0X_{1it} + \beta_0X_{2it} + \omega_{it}$$

where

$$\omega_{it} = e_{it} + \mu_{i}$$

4 Discussion and Findings

Based on World Bank Data (2021), the average economic growth in selected ASEAN countries is 5.702 %. The highest economic growth was in Thailand, with the highest figure reaching 7.513 %, while the lowest at 0.84 %, was also in Thailand. Economic globalization has an average index of 66.47 from selected countries in ASEAN. Economic globalization reached the highest index of 83.78 in Malaysia, while Indonesia’s lowest index of 37.50.

| Table 2. GDP Growth in ASEAN Countries, 2013-2020 |
|----------|------|------|------|------|------|------|------|------|
| Malaysia | 7.42 | 5.29 | 5.47 | 4.69 | 6.01 | 5.09 | 4.45 | 5.81 |
| Thailand | 7.51 | 0.84 | 7.24 | 2.69 | 1.08 | 3.13 | 3.43 | 4.07 |
| Indonesia | 6.22 | 6.17 | 6.03 | 5.56 | 5.01 | 4.88 | 5.03 | 5.07 |

Putri (2019) stated that trade openness has a significant effect on economic growth in ASEAN. Leitao and Carles (2012) stated that international trade has a positive relationship to economic growth. Putri (2019) stated that trade openness has a significant effect on economic growth in ASEAN.

The components of financial disclosure consist of FDI (27.3 %), portfolio investment (16.9 %), foreign debt (25.7 %), foreign exchange reserves (3.2 %) and balance of payments (26.9 %). One of the measures of financial openness is Foreign Direct Investment (FDI). FDI is one of the critical sources of financing for developing countries, including ASEAN countries, which are average developing countries. Transfer of technology, supply of absorbed human resources, research and innovation, improvement of management skills and capacities, job opportunities, etc., are the benefits of FDI to the country where it is invested.
References

Is Financial Inclusion Driven by Mobile Payment Characteristics and Financial Literacy?

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Abstract. Indonesia as the fourth largest unbanked population in the world described the issue of financial exclusion. The Indonesian government has been promoting a cashless society by implementing mobile payment to promote financial inclusion. Therefore, this research aims to execute mobile payment characteristics and financial literacy to determine financial inclusion. Mobility, compatibility, reachability, and convenience are the mobile payment characteristics, while financial knowledge, behavior, and attitude are the indicators of financial literacy. This research employed multiple linear regression by generating primary data in form of a questionnaire and distributed it to 200 respondents who are millennials within the Jabodetabek area. The findings revealed that as the mobile phone is carried around thus the respondents could utilize m-payment anytime and everywhere, ease the users, and implementation of the newest technology could promote financial inclusion. Special knowledge about mobile payment is unnecessary because it is user-friendly, and they could easily manage their finances.

Keywords: Financial inclusion, mobile payment characteristics, financial literacy, multiple linear regression

1 Introduction

Home to 95 million adults, Indonesia remains unbanked as the top 4 of the world’s largest unbanked population. The third national survey on financial literacy and inclusion conducted by Indonesia’s financial services authority (OJK) in 2019, found that the index of financial literacy and inclusion reached 38.03% and 76.19% respectively, which was only 29.7% and 67.8% respectively in 2016. Although there was an escalation for about 8.33% of financial literacy understanding and 8.39% access to financial products and services, Indonesia still far-off in achieving 90% of financial inclusion as targeted by Indonesian president, Joko Widodo [1].

Since 2012, the National Financial Inclusion Strategies (NFIS) of Indonesia has launched action roadmaps to achieve broader access of financial system to the entire layers of the community in promoting economic growth, reduction of poverty, and income equality [2]. Therefore, people can participate to be part of the financial system itself [3]. The strategies are

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supported by the World Bank Group (WBG) in a form providing support technically, including payments and financial literacy [2].

Aligned with Indonesia’s NFIS that supported with WBG, financial inclusion is driven by financial literacy [4] and mobile money or digital financial product usage [4], [5]. In which we believe that the characteristics of mobile payment (m-payment) also determine financial inclusion. The prior research employed m-payment characteristics to determine the intention to use m-payment [6], [7]. Therefore, we would like to fill the research gap by employing m-payment characteristics as financial inclusion determinants along with financial literacy.

M-payment is a payment tool and electronic invoices that utilize the internet and technology which are equipped with interesting features [8]–[10]. For the first time in 2019, the use of the mobile phone as a shopping tool had a higher percentage compared to PC and tablet. Thereafter, the level of m-payment usage in Indonesia is higher than in the Middle East. It also proved that m-payment became a familiar financial transaction since then [11]. It is because of the m-payment characteristics [7], [10].

A large scale of customer could be reached by most people in developing countries through digital technology if it is affordable and easy, thus financial inclusion issues will be solved. The innovations of technology are bringing the users of m-payment into the market [12]. Hence, the use of mobile money could promote financial inclusion because it can help people to manage the risk of financial [13]. People should have a well understanding of financial literacy to decide the financial products and services to be used. It is the ability, knowledge, and belief that will affect an individual’s financial decision-making. The three indicators of financial literacy are financial knowledge, financial behavior, and financial attitude [14], [15].

This research targeted millennials as the respondents of the survey because they are categorized as a tech-savvy generation [6] who are located in the Jabodetabek areas. Millennials were raised during technology advancement and thus they are familiar with it. However, they are passive users with limited financial literacy and without having a deep understanding that m-payment could boost up financial inclusion promotion. Through this research, we highlight the main contributions are m-payment characteristics as a new determinant of financial inclusion and better understanding and analysis about financial literacy and inclusion from millennials’ perspective.

2 Literature Review and Hypotheses Development

2.1 Financial Inclusion

Financial inclusion provides access to financial services to the population, especially to the people at the bottom of the pyramid [16]. Through financial inclusion, the government expects that people could experience a good quality of financial services at low cost for their well-being [17]. Some of the practices of inclusive finance are bank account opening that required fewer documents and accessing financial products and services using mobile technology [18]. The indicators to measure financial inclusion are access, usage, and quality. Access is defined as the ability of society to reach the financial services through bank branches penetration in rural areas or the access to financial institutions in regards the information or cost. Usage is the habit and duration of the society in utilizing financial products and services from time to time. While quality describes whether a customer's needs are matched with the financial products and services as well as the ability to understand [19].

2.2 Mobile Payment Characteristics

Mobile payment is a form of technology development that can be used to support daily needs, especially in finances [7], [10]. According to the rapid growth of technology, good characteristics of m-payment should be identified [9], in which the characteristics are: mobility, compatibility, reachability, and convenience [7].
Mobility is defined as the ability of users to carry mobile devices and use them for transactions anywhere with an internet connection. The advantage of mobile payment is the flexibility to use that fits the user's activity. Compatibility is the possibility of m-payment to have innovations and compatible to the newest technology. It considers the expectation for new features, useful and, provides many benefits (16). Reachability makes people possible to be contacted anytime and anywhere through mobile devices. It also provides people with choices to limit themselves either with a particular person or time [6]. Convenience is providing users with ease-to-use and comfortable devices within place and time [7].

A better characteristics of m-payment (mobility, compatibility, reachability, and convenience) increase the intention to use m-payment [6], [7], [10], [18]. When financial services could be accessed by the excluded people through mobile phone as a tool, it could promote financial inclusion [5], [21], [22]. M-payment mobility [7], [23], compatibility [6], [18], reachability, and convenience [6], [9], [10] increase the intention to use m-payment, thus it leads to inclusive finance [4], [5] because there are a lot more people could utilize the financial services. Therefore, several hypotheses of m-payment characteristics are proposed:

**H₁.** Mobility of m-payment has a positive impact on financial inclusion.
**H₂.** Compatibility of m-payment has a positive impact on financial inclusion.
**H₃.** Reachability of m-payment has a positive impact on financial inclusion.
**H₄.** Convenience of m-payment has a positive impact on financial inclusion.

### 2.3 Financial Literacy

It is a big homework for Indonesia to boost up financial literacy and hence financial inclusion could be achieved. It is defined as a process or activity to improve the knowledge, skills, and abilities of individuals and teams to manage their finance optimally. It can improve the well-being and well-decision making of investment [14], [24]. Financial literacy could be measured through financial knowledge, behavior, and attitude [14], [15].

An individual can choose financial products and services, monitor their finance, and analyze the related financial information if they have well-understanding of financial knowledge. Thus, they could deal with the right decision-making on investment [25]. Financial knowledge is the foremost thing to empower and educate society [26].

Once an individual has the knowledge, it is important for them to apply those financial principles into an act and thus create and preserve the value through the right decision making. Financial behavior is the psychological character of a person related to their personal financial issue [27]. It refers to systematic financial management such as plan stable savings and a particular financial goal. The usage of financial technology in accessing financial information is a form of financial behavior [21].

Moreover, financial attitude is a condition about thoughts, opinions, and judgments about finances. It is related to personal state of mind in communicating opinion in the financial industry [22], the financial responsibility of financial management for instance. A person who is responsible for their financial condition will be able to manage the use of their money effectively by controlling expenses, investing, and paying the bills on time.

When those acts are applied, the society could be categorized as having good financial literacy, thus financial inclusion could be promoted [12], [28], [29]. Interestingly, even though an individual does not know finance, they are still m-payment users. They can manage their finances through m-payment and responsible for the entire financial decision-making. Therefore, the hypotheses of financial literacy are proposed:

**H₅.** Financial knowledge has a negative impact on financial inclusion.
**H₆.** Financial behavior has a positive impact on financial inclusion.
**H₇.** Financial attitude has a positive impact on financial inclusion.

The conceptual framework of research is proposed below, see Figure 1. Conceptual Framework
3 Methodology and Data Analysis

This research applied primary data with quantitative analysis. Millennials who were born between 1982–2000 [30] that currently stay in Jakarta, Bogor, Depok, Tangerang, and Bekasi (Jabodetabek) area were the respondents of the survey. They were also actively using any kind of m-payment. Google form was the tool to distribute the questionnaire and 220 respondents filled the questionnaire, but 20 of it cannot be used. Therefore, the final respondents were 200 as the samples. The research sample is sufficient when the respondents are 30-500 people [31], thus this research has sufficient data. A pilot study was done to test the validity and reliability of the questionnaire filled by the first 30 respondents. Once the questionnaire was valid and reliable, then the questionnaire was distributed again to fulfill the research sample. Respondents were required to answer by giving a score from 1 to 5, in which 1 point as strongly disagree to 5 points as strongly agree. Normality, multicollinearity, and heteroscedasticity tests were tested as part of the classic assumption test. Afterward, Multiple Linear Regression was applied to test the hypotheses that consist of 7 independent variables and 1 dependent variable. Data was proceeded by SPSS version 23. Below is the equation:

\[ FI = \alpha + \beta_1 \text{MOB} + \beta_2 \text{COM} + \beta_3 \text{REA} + \beta_4 \text{CON} - \beta_5 \text{FK} + \beta_6 \text{FB} + \beta_7 \text{FA} + \varepsilon \]  

Where FI is financial inclusion, MOB is mobility, REA indicates reachability, CON refers to convenience, FK represents financial knowledge, FB defines financial behavior, FA indicates financial attitude, \( \alpha \) is constant, \( \beta \) is coefficient, \( \varepsilon \) refers to the error term.

4 Research Result and Discussion

4.1 Validity and Reliability test

All the variables: independent and dependent variables were valid because the R-value is greater than R-table (0.139). Each variable consists of 3 mobility statements, 3 compatibility

![Conceptual Framework](image-url)
statements, 3 reachability statements, 4 statements of convenience, 5 statements of financial knowledge, 6 and 4 statements of financial behavior and financial attitude, respectively. Every single indicator of financial inclusion: access (5 statements), usage (4 statements), and quality (3 statements) were all valid. As for the reliability test, Cronbach's alpha was done and each statement of the questionnaire that represents each variable should be > 0.60. The results revealed that all Cronbach's alpha was > 0.60, thus the independent and dependent variables were reliable.

### 4.2 Classic Assumption Test

Based on table 1, Kolmogorov-Smirnov to test the normality revealed an insignificant probability (0.074 > 0.05). It proved that the data were distributed normally. The probability results of heteroscedasticity based on the Glejser test also revealed an insignificant p-value on the entire independent variables (p-value > 0.05). Thus, there was no heteroscedasticity issue. As for the multicollinearity test, the entire tolerance and VIF values of the independent variables were > 0.10 and < 10, respectively. It proved that there were no multicollinearity problems among the independent variables. Therefore, the multiple linear regression could be executed.

### 4.3 Multiple Linear Regression and R-square results

This research aimed to find the impact of m-payment characteristics and financial literacy on financial inclusion. Out of seven independent variables, five independent variables, namely: mobility, compatibility, convenience, and financial behavior positively impact financial inclusion, while financial knowledge negatively impacts financial inclusion. These 5 independent variables have significant p-values (p-value > 0.10), thus H1, H2, H4, H5, and H6 were supported. The implementation of innovation and the newest technology (compatibility) proved to be the most powerful factor of financial inclusion. The r-square result proved that the entire independent variables could explain financial inclusion for about 51.6%. The remaining 48.4% were explained by the other variables excluded in this research.

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Coef</th>
<th>T-Stat</th>
<th>P-Values</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOB → FI</td>
<td>0.180</td>
<td>2.729</td>
<td>0.007</td>
<td>Supported</td>
</tr>
<tr>
<td>COM → FI</td>
<td>0.756</td>
<td>7.439</td>
<td>0.000</td>
<td>Supported</td>
</tr>
<tr>
<td>REA → FI</td>
<td>-0.061</td>
<td>-1.002</td>
<td>0.317</td>
<td>Not Supported</td>
</tr>
<tr>
<td>CON → FI</td>
<td>0.149</td>
<td>2.024</td>
<td>0.044</td>
<td>Supported</td>
</tr>
<tr>
<td>FK → FI</td>
<td>-0.103</td>
<td>-2.465</td>
<td>0.015</td>
<td>Supported</td>
</tr>
<tr>
<td>FB → FI</td>
<td>0.098</td>
<td>1.767</td>
<td>0.079</td>
<td>Supported</td>
</tr>
<tr>
<td>FA → FI</td>
<td>0.052</td>
<td>0.733</td>
<td>0.465</td>
<td>Not Supported</td>
</tr>
</tbody>
</table>

### 4.4 Discussions

Better mobility increases inclusive finance since the easier m-payment to be carried around and could conduct transaction anywhere and everywhere will increase financial inclusion. It supports the prior researches that mobility positively impacts the intention to use m-payment [7], [23] and hence increases financial inclusion [5]. The newest technology as an innovative improvement proved the compatibility that needs by the users. It revealed that compatibility positively impacts financial inclusion and it supports the previous research (29,30). The convenience of m-payment users increases their willingness to utilize and hence it promotes financial inclusion. (8,14,16).

Less knowledge about m-payment does not identify a better financial inclusion which concluded a negative impact of financial knowledge on financial inclusion. Knowledge about finance negatively impacts financial literacy and hence lessens financial inclusion [12]. Managing their finances as the implementation of behavior in finance increases the awareness of financial management and hence promotes financial inclusion. Meanwhile, reachability and financial attitude were found to be insignificant factors in financial inclusion.
5 Implication and Suggestion for Future Research

The shifting habit of the society from traditional to digital required a dramatic change to the needs and wants of society, thus financial services should adjust themselves to keep up with the current condition. Indonesia as a developing country is far away from inclusive finance, in which financial products and services could not be utilized by the entire layers of the population. Categorized as the fourth largest unbanked society in the world, it is due to the rigid rules and regulations of the banking industry as the biggest player of financial services in Indonesia.

As people carry around their mobile phones, it is easier for them to conduct a transaction through it. It also goes along with the government of Indonesia in creating a cashless society. Since then, numerous m-payments came within the society to promote financial inclusion because of the characteristics of m-payment itself. This research proved that mobility, compatibility, and convenience as the characteristics of m-payment could promote financial inclusion. The flexibility of m-payment in offering the advantages to be able to conduct any kind of transactions anytime and everywhere, ease the users because it implements the newest technology. As the society in all layers carry their mobile phone with them and financial services are provided in it, inclusive finance could be achieved. Financial literacy also could boost up financial inclusion. As m-payment is provided in the most crucial thing (mobile phone) for an individual, they can just utilize m-payment easily since the application is user-friendly.

Therefore, a broad knowledge of m-payment was found to be unnecessary because they simply know how to manage their finance through mobile phones.

Acknowledgments. We are thankful to anonymous reviewers for their insightful suggestions to improve this manuscript and to Bina Nusantara University for their financial support.

6 Reference


Forecasting Oil Sales Volume with Data Visualization in Sinar Servindo Sakti Company for 1 Year with Knowledge Discovery of Database (KDD) Method

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Abstract. This research is conducted as quantitative research discusses the concept of industry 4.0 by promoting the era of digital technology. This Research is centered on the development of Forecasting in Sinar Servindo company, an oil retail company that purchases orders from their partner companies. The main result is that the company’s sales volume predicted to increase quite rapidly and provide excellent profits for the company in the next 1 year with Rapid Miner and Power BI.

Keywords: Forecasting, Rapid Miner, K-Medoids, DBScan, X-Means

1 Introduction

In industry 4.0, there is a rapid development of technology with massive changes giving birth to a new generation, namely Generation Y. There are several main aspects in this era as a sign of the times such as the Internet of Things, Artificial Intelligence, Big Data, Cloud Computing, and so on¹.

In a company, the stock of goods used does not experience many problems, but often this becomes a problem because these raw materials are already scarce. Considering that an item in the company's inventory will incur a large cost, the producer must prepare a stock of oil goods with a capacity of 2 times the previous one. If this is successful, then sales will increase and finances will recover [1].

From this background, the problem statement taken as the main material for this thesis research is the main factors of the influence of sales volume from the price of an oil distribution company in South Tangerang named Sinar Servindo company. This Topic is important because the inventory cost is high and need support to make the balance with stock goods.

The research method to be researched and worked on is quantitative research method with visualization data result of sales price prediction using Rapid Miner and Power BI. Thus, the result of this research is a dashboard visualization of data marts that have been predicted from the company's data in the field of marketing that is linked to sales data at Sinar Servindo company to determine forecasting planning for 3 years (August 2017 – August 2020) along with nominal forecasting and inventory of goods for the next 1 years.

¹ Rizkinaswara, L. (2020). Revolusi Industri 4.0. Infrastruktur TIK. https://aptika.kominfo.go.id/2020/01/revolusi-industri-4-0/
After knowing the background gap for the selection of the topic, the important problem formulations are how the influence of the main factors of the company's price sales volume based on the application of the K-medoids, DBScan, and X-means models in the creation of data visualization of prediction results conducted in the company Sinar Servindo company.

The purpose of this research is to help the process of calculating the predicted sales volume of Sinar Servindo Sakti company for 3 years. The main things that have good benefits to the development of this thesis research is to determine the influence of sales volume prediction process in Sinar Servindo Sakti company based on oil distribution market trends.

2 Literature Review

2.1 THEORY REVIEW

2.1.1 Data Mining

Data mining is one of the main methods to perform extract data patterns and detect several parameter relationships in the data. The main purpose of using Educational Data Mining is to develop the model so that it can determine the performance of each available variable. [2]

2.1.2 Data Visualization

A working method for making presentation dashboards that are made as attractive as possible to attract customer attention based on the results of mathematical calculations predicting a problem in the vicinity. [3]

2.1.3 Prediction

The method of work using survey research that occurs around us with the aim of calculating a number that can predict a problem recorded in valid data. [4]

2.1.4 K-Medoids

The difference between the K-Medoids model and the K-Means model is that the K-Medoids model uses representative objects (medoids) as the center of clustering in a research study, while the K-Means model only uses the mean or average value as the center of the process. [5]

2.1.5 DBScan

One of the clustering models is used to cluster a particular problem with irregular data. Research using this model is more efficient than Clarans because this model can detect noise or outliers widely, does not need input as in the K-Medoids model, and can recognize some irregular sample data. [6]

2.1.6 X-means

This method enhances the limitations or shortcomings of this K-Means clustering research. This x-means model algorithm will recursively add the number of existing clusters so that the resulting number is the same as the user value above. [7]
2.1.7. Knowledge Discovery of Database

A method where all the knowledge of a data related to an organization or institution that has a very large amount of data and focuses on a broad methodology. An example of application is in the calculation of the FP-Growth Algorithm in an existing pattern. [8]

2.2. CONCEPTUAL FRAMEWORK

![Fig.1. Conceptual Framework Knowledge Discovery Of Database](image)

Figure 1 based on the main journal which is the main reference for determining the factors that influence the volume of sales in the company Sinar Servindo Sakti company, which is the calculation of nominal predictions and inventory of sales for 1 year with the category of hydraulic oil, engine oil, compressor oil and gearbox oil.

3. Methodology and Data Analysis

2.1. RESEARCH PARADIGM

The quantitative research work that will be used is the classification of models from three models at once, namely K-medoids, DBScan, and X-means. This research has a positivist paradigm because the thesis research is carried out using a quantitative research approach.

2.2. OBJECT OF RESEARCH

The research object of this research is the influencing factors of the sales volume of company prices and will be examined by means of the forecasting formulation of the K-medoids, DBScan, and X-means models using predetermined tools, namely Rapid Miner and Power BI.

2.3. POPULATION AND SAMPLE

The sample and population data, which is about 993 lines of sample data, has been recorded and divided into 3 transaction periods totaling 350 rows, 330 lines, and 312 rows respectively.

2.4. OPERATIONAL VARIABLE
The variable to be studied is the volume of sales prices made in the Sinar Servindo Sakti company for 3 years (August 2017 to August 2020) based on a one-year record of sales transactions that have been recorded properly and are valid and divided into two main sub-variables, inventory and sales.

2.5. DATA COLLECTION TECHNIQUE
The data collection technique in this thesis is the method of observation, which is looking at the raw data to classify the model to find out the main factors of the sales volume of the company price.

2.6. DATA PROCESSING TECHNIQUES
These data will be formed into fresh data through data cleansing. All data that has been cleansed and tidied will be classified using three models, namely K-medoids, DBScan, and X-means.

2.7. DATA ANALYSIS TECHNIQUE
The research method that will be used is KDD (Knowledge Discovery in Database) to work on and research using Rapid Miner and Power BI tools to determine the prediction of sales volume of company with three models (K-medoids, DBScan, and X-means).

4. Research Result and Discussion
2.1. CHARACTERISTIC
The customer who includes in this research will be the company and individual company. All respondents selected come from individuals who join companies and companies that are partners of Sinar Servindo company. The Forecasting system is not optimal. The application cannot be done without the Acceptance Test because it’s still prototype.

2.2. RESULT
The results of the analysis for forecasting research are carried out based on the implementation of the three models and will be compared to make final conclusions and the implications of the analysis results using data visualization.

2.2.1.1. K-Medoids
Fig.1. Visualization forecasting K-medoids dashboard for inventory items

The stock of these items is at 116 stock items. This shows that there was a recovery in the stock of goods which had almost doubled from the previous period.

![K-medoids dashboard for inventory items](image1)

Fig.2. Visualization forecasting K-medoids dashboard for sales items

Sales volume of the Sinar Servindo Sakti company is predicted to increase to IDR 706,548,259 at the end of the next period (August 2020 - July 2021). DBScan

![K-medoids dashboard for sales items](image2)

Fig.3. Visualization forecasting DBScan dashboard for inventory items

The forecasting process for the next period shows an improvement in the stock of goods with 130 items predicted to be stored in the company's inventory of Sinar Servindo Sakti.

![DBScan dashboard for inventory items](image3)

Fig.4. Visualization forecasting DBScan dashboard for sales items

The company's sales volume is predicted to increase in the next period (August 2020 - July 2021) with the resulting projected value of IDR 816,963,220.

![DBScan dashboard for sales items](image4)
2.2.1.2. X-Means

The end of the new period (August 2020 - July 2021) predicts an increase in the stock of goods, which will be around 136 stocks.

At the end of the next period (August 2020 - July 2021) it predicts an increase in the company's sales volume figure at IDR 843,880,990.

2.3. DISCUSSION

The main result of this research is that the company's sales volume is predicted to increase quite rapidly and will provide a very good profit for the company in the next 1 year. The main problem in the research that has been made is that the company data has not been audited by the sales company until now. Further research focused on the completeness data of PT. Sinar Servindo Sakti to find out the main factors of the inventory cost of these goods to the customer.

5. Implication and Suggestion for Future Research

2.1. IMPLICATION

The three models in the same KDD method, namely K-medoids, DBScan, and X-means both predict that if all stock of goods increases, sales volume will also increase quite rapidly.
2.2. SUGGESTION

Three suggestions of this research is to check the inventory stock of goods in the company with the aim of reducing the costs that have been budgeted by the company.

Sales companies need to pay attention to and learn about the company's forecasting of Sinar Servindo Sakti. It is better to train for development of the existing forecasting system to improve the quality of sales of goods in the next few years.

It is necessary to do further research on the characteristics of the category of oil goods that are inherent in society with existing data and a broader and more modern forecasting system.

6. Reference


How The Effect of Economic Shocks on Regional Income? Period Before and During COVID-19: Case 18 Largest Cities In Indonesia

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Abstract. This study analyzes the economic shocks to regional income before and during COVID-19 in the 18 largest cities in Indonesia (DKI Jakarta, Bandung, Semarang, Surabaya, Medan, Palembang, Banjar Masin, Bandar Lampung, Makassar, Samarinda, Denpasar, Padang, Pontianak, Manado, Mataram, Pangkal Pinang, Ambon and Banten) for the period August-2018 until May-2021 using panel regression. The findings are that the economic shocks due to the spread of the COVID-19 pandemic have resulted in a decrease in regional income. Furthermore, economic conditions, employment opportunities and price stability have a positive and significant effect on regional income. Meanwhile, price expectations also have a positive but insignificant effect on regional revenues. The government needs to deal with the impact of the economic shocks caused by the COVID-19 pandemic, including maintaining the stability of control variables, providing stimulus for the business sector and strengthening people's purchasing power.

Keywords: Regional Income, Economic Shocks, Employment Opportunities, Price Stability, Price Expectations.

1. Introduction

Income stability is the main thing in ensuring that the economy can continue to grow [1]. However, the condition that occurs is that the economy is always in a very dynamic condition so that it cannot really ensure income stability for a country that adheres to an open economic system, such as Indonesia. In an open economic system, part of global conditions always has an influence on domestic stability conditions [2]. Thus, macroeconomic stability becomes very important, which includes income, price conditions and improvements in employment opportunities.

One of the impacts of global conditions on the economy is the economic contraction due to the COVID-19 pandemic, which was accompanied by the world geopolitical situation which took place in the third quarter of 2020 against the third quarter of 2019 experiencing a growth contraction of minus 3.49 percent which resulted in GDP growth in Indonesia being slowed down, with the decline starting to occur in 2020 when the pandemic began. Growth in the first quarter of 2020 was recorded at 2.97 percent. If it is calculated against the same quarter in 2019 of 5.07 percent, it means that there is a difference of minus 2.1 percent. Meanwhile, the difference in the second quarter is bigger, if it is calculated between the first quarter of 2020 of -5.32 percent against the second quarter of 2019 of 5.05, then there is a difference of -10.37 percent. The record number is different when compared to conditions before COVID-19. If you
compare the first and second quarters of 2019 to 2018, the numbers tend to be stable with a fairly small difference. The difference between the first quarter of 2019 when compared to the first quarter of 2018 was 5.06 percent, an increase of 0.01 percent was recorded. If you compare the second quarter of the same two years, the difference in numbers will be minus 0.22 percent [3].

Based on this explanation, it can be seen that fluctuations in economic conditions are closely related to income conditions. Furthermore, relevant research states that the variables that affect income are economic conditions, employment opportunities, price stability and price expectations [4]-[12] which are described in the literature review section. Thus, the novelty of this research is to analyze economic shocks on regional income in the period before and during COVID-19 in 18 largest cities in Indonesia to maintain public welfare due to the outbreak of the COVID-19 pandemic which has an impact on slowing economic conditions, so this research will produce policies that addressed to the government in overcoming social and economic problems due to the COVID-19 pandemic.

2. Literature Review

Studies on economic conditions have been carried out by several previous researchers, including an analysis of the level of economic shocks in the metropolitan economy to see the effects of these shocks from one region to another such as adjustment and recovery of these areas, it was found that shocks can be of three types. First, shocks caused by a slowdown in the national economy. Second, shocks caused by a decline in certain industries, which are an important component of the region's export base. Third, other external shocks, such as natural disasters, closure of military bases, movement of important companies out of the area [4].

The economic shock that occurred to the Chinese population was due to the impact of the changing age profile with India on GDP per capita, so that China had to maintain the level of productivity growth because it only benefited slightly from increased labor force participation. Labor productivity in China has benefited from investment in education as the average education level of the population continues to increase which will indicate technological progress at the level of China's productivity increasing in the future [5].

Economic uncertainty, financial deregulation and money demand in Australia during the period 1976: 2 and 2008: 4 using Johansen cointegration to estimate long-run stationary relationships, it was found that there was a long-term relationship between money demand, economic activity, interest rates and prices. However, there is no long-run equilibrium relationship between money demand and its determinants. In addition, no cointegration relationship was found between financial deregulation, economic uncertainty and long-term interest rates for post-regulation and for the entire sample for the traditional money demand equation [6].

Analysis of economic growth in landlocked developing countries (LLDCs), it was found that LLDSs hampered economic growth. However, good governance, trade openness, and coordination of infrastructure development with neighboring countries have a significant influence between LLDC and natural resources contributing to LLDC economic growth [7].

Investigating trade, investment and economic growth in New Zealand for the period 1954–2007, it found that there was consistent support for the long-term effects of trade and investment on output. Furthermore, there is a long-term positive and significant effect of exports and investment on output. The effect of imports on output is positive. The positive and significant long-term impact of exports and investment on output underscores the need for increased exports and increased investment to drive higher levels of output and economic growth [8].
Analysis of the effect of economic shocks on unemployment in peripheral European countries under EMU using the VAR structural model, it is found that the unemployment multiplier due to government expenditure shocks is higher than the multiplier associated with variable government revenue shocks by country. Furthermore, fiscal and financial shocks are not one of the long-term drivers of unemployment, but a more important role played by shocks throughout the Euro area, with a major role for general monetary policy shocks [9].

Based on the description of previous research, it can be seen that the novelty of this study is to analyze economic shocks in the period before and during COVID-19. The COVID-19 problem is a global problem that is increasingly plaguing economic conditions, especially the Indonesian economy. Initially, the economic impact of this virus only eroded the external side of the Indonesian economy by increasing a number of imported commodities from China.

3. Methodology and Data Analysis

The objects in this study are the 18 largest cities in Indonesia, namely DKI Jakarta, Bandung, Semarang, Surabaya, Medan, Palembang, Banjar Masin, Bandar Lampung, Makassar, Samarinda, Denpasar, Padang, Pontianak, Manado, Mataram, Pangkal Pinang, Ambon and Banten. This study uses secondary data which is grouped into two, namely the period before COVID-19 (August 2018 until December 2019), then during COVID-19 (January 2020 until May 2021). The data used in this study were obtained from the Publication of the Bank Indonesia Consumer Survey. Furthermore, this study uses a panel regression model, as follows:

\[
RI_{it} = \alpha_0 + \alpha_1 ES_{1it} + \alpha_2 EC_{it} + \alpha_3 EO_{it} + \alpha_4 PS_{it} + \alpha_5 PE_{it} + \epsilon_{it}
\]  

Where:
- \(RI_{it}\): Regional Income
- \(ES_{1it}\): Economic Shocks
  - 0 \(\rightarrow\) Before COVID-19 (August 2018 until December 2019)
  - 1 \(\rightarrow\) During COVID-19 (January 2020 until May 2021)
- \(EC_{it}\): Economic Conditions
- \(EO_{it}\): Employment Opportunities
- \(PS_{it}\): Price Stability
- \(PE_{it}\): Price Expectations
- \(\alpha\): Parameters
- i: Cross Section
- t: Time Series
- \(\epsilon_{it}\): Error Term

Based on equation (1) above, the operational definitions of variables in this study are summarized in Table 1 below:

<table>
<thead>
<tr>
<th>Table 1. Variable Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>Regional Income (RI)</td>
</tr>
</tbody>
</table>
Economic Shocks (ES)
Economic shocks are a proxy for dummy variables to explain the effect of qualitative variables that cannot be measured, but can only be marked. The spread of the COVID-19 pandemic resulted in unstable economic conditions, where \( 0 = \) before COVID-19 (August 2018 until December 2019) and \( 1 = \) during COVID-19 (January 2020 until May 2021)

Economic Conditions (EC)
Economic conditions are measured using an index of economic conditions calculated by the balance score method (net balance + 100) which shows that if the index is above 100 it means optimistic and below 100 means pessimistic

Employment Opportunities (EO)
Employment opportunities are measured using the employment opportunity availability index which is calculated by the balance score method (net balance + 100) which shows that if the index is above 100 it means optimistic and below 100 means pessimistic

Price Stability (PS)
Price stability is measured using a price stability index calculated by the balance score method (net balance + 100) which shows that if the index is above 100 it means optimistic and below 100 means pessimistic

Price Expectations (PE)
Price expectations are measured using the price expectation index which is an estimate of the price level for the next 12 months calculated by the balance score method (net balance + 100) which shows that if the index is above 100 it means optimistic and below 100 means pessimistic

Hypothesis testing in this study is based on several approaches, namely the common effect model, fixed effect model and random effect model. In determining the approach to be used in this study, several tests will be carried out. The first is the Chow test to choose between the common effect model or the fixed effect model. The second is the Hausman test to determine the fixed effect model or the random effect model. The third is the Lagrangian test to determine the common effect model or the random effect model.

4. Research Result and Discussion

4.1. Research Result

This section will describe the statistical analysis and interpretation of the estimation results based on the approach described in the methodology section, which consists of the results of the panel regression stages.

<table>
<thead>
<tr>
<th>Table 2. Chow Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effects Test</td>
</tr>
<tr>
<td>Cross-section F</td>
</tr>
<tr>
<td>Cross-section Chi-Square</td>
</tr>
</tbody>
</table>

Source: Author's Calculation.

Based on the results of the Chow test in Table 2, the fixed effect model is better than the common effect model because the probability value of the chi-square cross-section is less than 0.05. The next step is the Hausman test.
Table 3. Hausman Test Results

<table>
<thead>
<tr>
<th>Test Summary</th>
<th>Chi-Sq. Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section Random</td>
<td>0.0000</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

Source: Author's Calculation.

Based on the results of the Hausman test in Table 3, the random effect model is better than the fixed effect model because the probability value of the chi-square cross-section is greater than 0.05. The next step is the Lagrangian test.

Table 4. Lagrangian Test Results

<table>
<thead>
<tr>
<th>Test Hypothesis</th>
<th>Cross-section</th>
<th>Time</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breusch-Pagan</td>
<td>1.8637</td>
<td>3.8516</td>
<td>5.7153</td>
</tr>
<tr>
<td>(0.0022)</td>
<td>(0.0497)</td>
<td>(0.0168)</td>
<td></td>
</tr>
</tbody>
</table>

() indicates the probability. Source: Author's Calculation.

Based on the results of the Lagrangian test in Table 4, the probability value for cross section and time is less than 0.05. So the best estimation method is the random effect model. Based on the stage test for selecting the best panel regression model, the interpretation stage of the research results uses a random effect model.

4.2. Discussion

\[ RI_{it} = 0.023 - 1.965 ES_{it} + 1.451 EC_{it} + 2.306 EO_{it} + 6.505 PS_{it} + 0.177 PE_{it} + \epsilon_{it} \]  
\( (0.0081) \quad (0.0483) \quad (0.0000) \quad (0.0229) \quad (0.4921) \)

F-statistic: 67.62 and R-squared: 0.8891

() indicates the probability

Based on the information in equation 2, the interpretation of the estimation results from the panel regression model with the random effects model approach in this study include:

First, the results of the analysis for the F test are that economic shocks, economic conditions, employment opportunities, price stability and price expectations together affect regional income in the 18 largest cities in Indonesia because the probability of the F test is significant (0.0000 < 0.05).

Second, the results of the analysis for the t test include the results of the analysis for economic shocks that have a negative and significant effect (0.0483 < 0.05) meaning that economic shocks due to the spread of the COVID-19 pandemic have an effect on regional income, an increase in the COVID-19 pandemic by 1 point resulted in a decrease in regional income of –1,965 points assuming ceteris paribus. The results of this study support the findings [7]–[9]. The paralysis of the economic sector due to the increase in the COVID-19 pandemic is getting worse with the lockdown on all community economic activities which accelerates the increase in the number of unemployed because many employees are laid off from their jobs so that regional incomes have decreased. Furthermore, economic conditions have a positive and significant effect (0.0000 < 0.05) on regional income in the 18 largest cities in Indonesia, if there is an increase in economic conditions by 1 point, the regional income condition will increase by 1,451 points with the assumption of ceteris paribus. The results of this study support the findings of [10]–[12]. Improved economic conditions will increase the demand for goods and services
which will be responded to by all economic sectors, which will increase regional income. Then, employment opportunities also have a positive and significant effect (0.0000 < 0.05) on regional income in the 18 largest cities in Indonesia, if there is an increase in employment opportunities of 1 point, regional income will increase by 2,306 points with the assumption of cateris paribus. The results of this study support the findings of [13]–[15]. Increasing employment opportunities through increasing government or private projects, more companies operating and easier access to credit to banks will increase regional income. Meanwhile, price stability also has a positive and significant effect (0.0229 < 0.05) on regional income in the 18 largest cities in Indonesia, if there is an increase in price stability of 1 point, economic conditions will increase by 6,505 points with the assumption of cateris paribus. The results of this study support the findings of [16]–[18]. The condition for creating price stability as indicated by low inflation through the availability of affordable prices, availability of supply and smooth distribution is a prerequisite for regional income stability. Finally, price expectations have a positive but not significant effect (0.4921 > 0.05) on regional income in the 18 largest cities in Indonesia. Price expectations are a picture of prices in the future whose conditions are assessed based on people's perceptions. Price expectations tend to experience uncertainty from the internal and external sectors and the range of the period is quite long compared to now, so this does not have a significant effect on regional income.

Third, the coefficient of determination (R-squared) obtained is 0.8891, which means that variations in regional income changes can be explained by economic conditions, employment opportunities, price stability, price expectations and economic shocks due to the spread of the COVID-19 pandemic of 88.91 percent, while the rest is explained by by other variables not included in the analysis model in this study.

5. Implication and Suggestion for Future Research

Some strategies that can be taken by the government include considering the condition of people's income due to a decrease in overall economic activity such as providing direct cash assistance which will be used directly by the community to be able to meet basic needs that may not be met due to reduced working time and possible termination of employment. Furthermore, the provision of stimulus for the business sector to reduce the potential for layoffs, such as the issuance of recovery bonds, is expected to reduce cash flow pressures for the real sector, which in turn can reduce layoffs. Lastly, strengthening people's purchasing power, such as maintaining the condition of people's consumption growth because it has a large enough role in national economic growth. Suggestions for future researchers are to analyze the impact of economic shocks in the short and long term on various macroeconomic indicators for the period before and during COVID-19, so that research results and policy recommendations to the government will be more specific to maintain people's welfare.

Acknowledgments

This study was supported by research funds from PNBP Universitas Negeri Padang for the 2020 fiscal year.

6. References


Improving Performance and Generating Competitive Advantage of Rural Banks: Do Coopetition and Capital Requirement Matter?

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Abstract. The increasing of small, micro, and medium enterprises; large low-income communities are relatively unaffordable by commercial finance institutions, generating growth of microfinance institutions. Rural banks (Bank Perkreditan Rakyat – BPRs) have been serving those markets for years. This study analyzes coopetition leverage and capital requirement in determining their competitiveness and performance. The respondents were 280 employees in Aceh, Indonesia. The structural equation modelling analysis was used. There is a positive influence of the coopetition leverage and capital requirement towards competitive advantage and business performance. The study also found that the competitive advantage in mediating the effect of coopetition leverage and capital requirements on performance is said to be partial mediation. These findings suggest that BPRs could use the opportunity by building coopetition with the other banks or fintech companies and maximizing their capital to reach the competitive advantage for their sustainability, applying better-modified strategies to survive and improve performance.

Keywords: Rural bank, coopetition leverage, capital requirement, competitive advantage, business performance.

1 Introduction

Bangladeshi economist Muhammad Yunus received the Nobel Peace Prize in 2006 to eradicate poverty by using a financial institution (rural bank), Grameen Bank. This fact proves that banks can be an instrument to improve people's lives and increase activity or economic growth in a region [1]. Currently, small and medium industries need microfinance institutions, especially small and micro-entrepreneurs and low-income communities, which are relatively unaffordable by formal financial institutions.

This study will discuss one of the institutions providing financing for those groups, namely the Rural Bank (Bank Perkreditan Rakyat-BPRs). The number of BPRs in Indonesia is recorded at 1,545, consisting of 1,413 Conventional BPRs and 132 Sharia BPRs. According to the Law of the Republic of Indonesia No. 7 of 1992 about Banking as amended by Law no. 10 of 1998, it is stated that BPRs are banks that carry out business activities conventionally and or based on sharia principles which in their business activities do not provide services in payment traffic. BPRs in rural areas are targeted to spearhead financing the micro, small and medium enterprises. The distribution of commercial bank credit to them is still relatively low, and it is due to some
reasons including, the high risk and limited information obtained regarding micro, small and medium enterprises [2].

Surviving in the financial service industry needs incredible strategies where the high level of competition comes from fellow BPRs and cooperatives, commercial banks, both government and privately owned and many other non-bank institutions that have openly entered micro banking. In addition to challenges, competition will also create many opportunities. The coopetition example is cooperation with commercial banks through linkage program, but the contribution towards total BPR credit is relatively small. That happens because of high excess liquidity in commercial banks. It is difficult for BPRs to charge low-interest rates to debtors because bank interest rates are very high [3].

Business strategy from the concept of coopetition is more directed at how a bank can create a sustainable competitive advantage by changing the rule of the game for its benefit. In order to improve competitivenes, Otoritas Jasa Keuangan has issued cooperation BPRs and a fintech peer-to-peer lending guidebook. The manual was launched virtually at the end of January 2021; they are no longer competitors but synergize to grow together by cooperating through two schemes, channelling and referral schemes [4]. Furthermore, the capital adequacy of BPRs in Aceh, the average CAR (Capital Adequacy Ratio) is still not optimal, which stands at only 8%, the lower threshold required by banking authorities.

Meanwhile, the COVID-19 pandemic is still a threat to our health and the economy at the moment; the financial services industry keeps struggling to cope with it. Still, BPRs managed to grow and contribute to the national economy despite facing the pressure of the Covid-19 pandemic and the squeeze of fintech. When general banking credit experienced a contraction in 2020, BPRs still recorded a positive growth of 1.82% year on year (YoY) to IDR110.7 trillion. BPRs Third Party Funds grew 3.53% from 2019 to IDR106.15 trillion, and assets rose 3.3% to IDR155.07 trillion [5]. However, the challenges faced will be more severe. BPRs must answer various challenges; increasingly fierce competition, increasingly rapid technological developments, changes in the ecosystem, digitalization, and strengthening capital. In addition, supporting adequate human resource infrastructure and implementing good governance, including industry consolidation, are essential [6].

2 Literature Review

2.1 Coopetition Leverage and Capital Requirement

Coopetition means collaborating with competitors for benefits that we cannot achieve on our own, including risk and cost-sharing, distribution channel sharing, co-marketing, and collaborative coopetition [7]. Coopetition usually evolves and shapes the competitiveness [8] thus well-positioned to gain a competitive advantage in various contexts [9]. Meanwhile, [10] studied why a firm decides to cooperate with competitors initiated and run continuously. Coopetition improves business performance, but the key is the number of links and obtained trust between pairs, mutual benefits, and commitments.

A high level of capital will increase cash reserves that can be used to expand credit so that a high level of solvency will open up more significant opportunities for banks to increase their profitability. It can even reduce public trust and adversely affect its business continuity if low solvency level [11]. According to Bank for International Settlements (BIS), the provisions and calculations of the Capital Adequacy Ratio (CAR) are formulated as “a minimum ratio of 8% of capital to assets that contain risks”. CAR compares the net capital owned by a bank and its total assets, a ratio that mainly functions as a reservoir for the risk of losses that banks face in the future. The higher the CAR, the better the bank’s ability to bear the risk of any risky
credit/productive assets [12]. Capital Adequacy Ratio, core capital, and supplementary capital are capital requirement indicators [13].

2.2 Competitive Advantage and Business Performance

Competitive advantage exists when there is harmony between competencies that distinguish a bank and have much better performance than its competitors [14]. The indicators of competitive advantage are product differentiation, cost, and market segmentation [15]. Competition is a way to encourage “the search for new combinations of resources, skills, and rental processes [16].” The influence of capital requirements on competitive advantage can be seen from several regulations, such as banks must maintain their CAR. The more adequate the funds they have, the more flexible management will be in carrying out the strategies of the institutions they lead through increasing their competitive advantage [17].

Performance is considered successful if the realization exceeds the set target. At the same time, the bank's performance measurement should use objective and subjective criteria such as the manager's perception and overall perception of stakeholders together [18]. A study proves the effect of coopetition on improving bank performance [19]. Business performance indicators accommodate customer needs, operating processes, service processes, and coopetition processes. Thus, it is affected by human resources and capital-related managerial factors [20].

![Fig. 1. The Proposed Research Model](image)

3. Methodology and Data Analysis

The primary quantitative instrument of study was the application of the proportional random sample use method. This study was conducted for all BPRs in Aceh province, 15 banks with 49 branch offices. The total sample is 280 employees out of 934 employee’s population. All variables were evaluated on a Likert scale of 1 to 5 (where 1 strongly disagree, 5 – strongly agree). The questionnaire aimed to identify the employee's statements towards the variables as contributors to the business process and the internal parties who know best about their own resources. In order to competitive advantages and business performance will sustain over time, the resources-based view theory suggests that understanding our resources and capabilities are crucial for establishing strategies [21]. The hypothesis testing is divided into two objectives: descriptive purposes and hypothesis testing. In the relationship between indicator variables, research variables, and measurement errors, the Structural Equation Modeling (SEM) approach is used. SEM can analyze measurement equations, structural equations, and reciprocal.
4. Research Result and Discussion

4.1 Respondent Characteristics

The total number of respondents is 280; male 173 (61.79%), female 107 (38.21%). The employees with the length of work between 5-10 years is 34.29% (96), 3-5 years is 33.21% (93), less than two years is 24.64% (69), and more than 10 years is 7.86% (22). According to the education level, most respondents have a bachelor's degree as many as 170 employees (60.71%). Only four employees (1.43%) have a master's degree, while the rest of 37.86% have completed a diploma (106 employees).

4.2 Descriptive Analysis

The categorization of the number of respondents' response scores is based on the maximum score range and the minimum score divided by the number of categories desired[22]. This study used the range values as Table 1. below:

<table>
<thead>
<tr>
<th>Average Score</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.20 – 5.00</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>3.40 – 4.19</td>
<td>Agree</td>
</tr>
<tr>
<td>2.60 – 3.39</td>
<td>Neutral</td>
</tr>
<tr>
<td>1.80 – 2.51</td>
<td>Disagree</td>
</tr>
<tr>
<td>1.00 – 1.79</td>
<td>Strongly Disagree</td>
</tr>
</tbody>
</table>

The descriptive analysis for each variable will be explained from Table 2. below:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coopetition Leverage</td>
<td>4.259</td>
<td>0.632</td>
</tr>
<tr>
<td>Capital_Requirement</td>
<td>4.202</td>
<td>0.636</td>
</tr>
<tr>
<td>Competitive_Advantage</td>
<td>4.239</td>
<td>0.613</td>
</tr>
<tr>
<td>Business_Performance</td>
<td>4.279</td>
<td>0.593</td>
</tr>
</tbody>
</table>

Overall, the respondents perceived the variables as favorable because the average value is 4.2, greater than 3.4 as the cut-off descriptive value representing the strongly agree category.

4.3 Confirmatory Factor Analysis Test

Confirmatory Factor Analysis test is used to reduce indicators on research variables. Refer to Table 3., those all existing indicators have exceeded the threshold of validity requirements, so they can be included in hypothesis testing through structural testing.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coopetition1</td>
<td>.904</td>
</tr>
<tr>
<td>Coopetition2</td>
<td>.880</td>
</tr>
<tr>
<td>Coopetition3</td>
<td>.739</td>
</tr>
<tr>
<td>Cap_Req1</td>
<td>.747</td>
</tr>
<tr>
<td>Cap_Req2</td>
<td>.501</td>
</tr>
<tr>
<td>Cap_Req3</td>
<td>.547</td>
</tr>
<tr>
<td>Com_Adv1</td>
<td>.915</td>
</tr>
<tr>
<td>Com_Adv2</td>
<td>.883</td>
</tr>
<tr>
<td>Com_Adv3</td>
<td>.866</td>
</tr>
<tr>
<td>Bus_Per1</td>
<td>.783</td>
</tr>
<tr>
<td>Bus_Per2</td>
<td>.878</td>
</tr>
<tr>
<td>Bus_Per3</td>
<td>.929</td>
</tr>
<tr>
<td>Bus_Per4</td>
<td>.938</td>
</tr>
</tbody>
</table>
4.3 Verification of Hypothesis Testing

From the results of data processing using SEM, a structural equation model (full model) can be formulated as Fig. 2.

![Fig. 2. Structural Model](image)

The results of the structural test using the entire model can be seen in Table 4.

### Table 4. Model Estimation Results

<table>
<thead>
<tr>
<th>Dependent Variable (DV)</th>
<th>Independent Variable (IV)</th>
<th>Beta</th>
<th>CR</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitive_Advantage (Y)</td>
<td>Coopetition_Leverage(X1)</td>
<td>0.374</td>
<td>6.762</td>
<td>***</td>
</tr>
<tr>
<td>Competitive_Advantage (Y)</td>
<td>Capital_Requirement (X2)</td>
<td>0.328</td>
<td>4.063</td>
<td>***</td>
</tr>
<tr>
<td>Business_Performance (Z)</td>
<td>Competitive_Advantage (Y)</td>
<td>0.567</td>
<td>12.851</td>
<td>***</td>
</tr>
<tr>
<td>Business_Performance (Z)</td>
<td>Coopetition_Leverage(X1)</td>
<td>0.399</td>
<td>7.515</td>
<td>***</td>
</tr>
<tr>
<td>Business_Performance (Z)</td>
<td>Capital_Requirement (X2)</td>
<td>0.134</td>
<td>1.972</td>
<td>0.046</td>
</tr>
</tbody>
</table>

Coopetition leverage affects competitive advantage due to the probability value is less than 0.05 (*** < 0.05) and the CR value is 6.762 (CR > 1.96). A positive estimation value of 0.374 means that the effect is positive; if coopetition leverage is high, the competitive advantage is also confirmed to increase. The results are consistent with the study that examines the effect of coopetition on the competitive advantage of SMEs in Turkey and the moderating effect of bank age [23].

Capital requirements also affect competitive advantage, the probability value is less than 0.05 (*** < 0.05) and the CR value is 4.063 (CR > 1.96). A positive estimation value of 0.328 means that the effect is positive. The results of this study are in line with research that examines the resource-based theory of competitive advantage, implications for strategy formulation in which one of the components is the financial capability of the bank [21].

Coopetition leverage has also influenced the business performance, the probability value is less than 0.05 (*** < 0.05) and the CR value is 7.515 (CR > 1.96). A positive estimation value of 0.399 means that the effect is positive. This study's results follow a study that examined the relationship between identifying and prioritizing critical success factors for coopetition strategy in Hong Kong [24].

The hypothesis that capital requirements affect business performance is also not rejected. This is because the probability value is less than 0.05 (*** < 0.05) and the CR value is 1.972 (CR > 1.96). A positive estimate value of 0.134 means that the effect is positive. The results are similar to a study that examined the influence between capital structure and performance of non-financial companies listed in the Nairobi Securities Exchange, Kenya [25].
There is also the influence between competitive advantage and business performance. The probability value is less than 0.05 (*** < 0.05) and the CR value is 12.851 (CR > 1.96). A positive estimation value of 0.567 means that the effect is positive. The results follow a previous study that emphasizes achieving and maintaining competitive advantage as an important strategic step in enabling superior bank performance [26].

4.4 Mediation Variable Hypothesis Testing

This study is also to determine the indirect effect of the mediating variable by using Sobel Test. The hypothesis is accepted if this calculation produces a z-value of 1.96 with a significance level of 0.05. First, the value of the influence of the competitive advantage variable in mediating the effect of coopetition leverage on business performance is positive at 0.212. The CR value is 2.4767 > 1.96. The value of the influence of the competitive advantage variable in mediating the effect of capital requirements on business performance is positive at 0.186. The CR value of 3.7052 > 1.96.

The findings of this study reveal that the coopetition leverage of BPRs is still low, so it seems that BPRs are managed by not utilizing maximum coopetition driving strategies, resulting in low competitiveness and performance BPRs. On the other hand, the capital requirement of BPRs in Aceh, the average CAR, is still able to meet the regulatory requirements around 8%. However, the competitive advantage variable is the variable that has the most significant influence compared to other variables because its beta coefficient number is the largest (0.567). As part of the service industry, human resources with higher skills can be developed to promote competitive advantage and performance.

5. Implication and Suggestion for Future Research

The analysis results found that the competitive advantage factor was the most dominant in encouraging BPRS performance. BPRs need to systematically build sustainable competitive advantage by building core competencies, cooperating with superior competitors, and building a reputation to offer superior value to their customers, which will impact BPRs performance towards a better future. Coopetition is considered capable of encouraging BPRs to increase their innovation power, providing benefits knowledge creation, increasing market share so that it will be able to improve BPRS’s competitiveness. The capital requirement also has a positive effect on BPRS performance.

Future studies should explore the effectiveness of the collaboration between rural banks and the other partner, such as from fintech industries and other commercial banks. The capital requirement for rural banks to perform better also should be highlighted as capital for microfinance institutions has a vital role for their long-lasting business. Suggestions for further research are expanding the object of research in BPRs, including other microfinance institutions, and adding other related variables.

6. References


COVID-19 Pandemic: Evidence from JII Stocks

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Abstract. The purpose of this study is to analyze the reaction of the Jakarta Islamic Index (JII) stocks to the announcement of COVID-19 as a national disaster in Indonesia. The sample used is 30 of JII stocks and an event study methodology applied. The results of the study found that there were in the second and the fourth day after the event date having significant on abnormal return at 1 % level. Additionally, there was the pretty strong impact of the event on Trading Volume Activity and Bid-Ask Spread of JII stocks. In addition, based on the regression test indicated that the event has a significant effect on JII stocks, so that the result remain robust. It indicated that the announcement of COVID-19 as a national disaster in Indonesia has affected market stock.

Keywords: COVID-19 Pandemic, JII Stocks, Event Study

1 Introduction

COVID-19 is an infectious disease caused by the SARS-CoV-2 coronavirus, which was recently found. This new virus was found after an outbreak in Wuhan, China, in December 2019, and the World Health Organization (WHO) designated it a pandemic on March 11, 2020 [1]. The results of research on the impact of the COVID-19 pandemic state that social distancing, self-isolation and travel restrictions have caused a reduction in the workforce in all sectors of the economy and caused many jobs to be lost. Schools are closed, and the need for manufactured commodities and products has decreased. However, the medical requirement stock increased significantly and food sector as well due to a panic buying [2].

The other research on market reactions related to COVID-19 pandemic has previously been carried out [3], [4], [5], [6], and [7] as a whole showed similar results that COVID-19 pandemic has affected stock returns negatively. Meanwhile, other studies have discovered that high and low COVID-19 mortality rates are linked to low and high liquidity in emerging markets, and that government policy restricting people's movement has contributed to increased liquidity in the capital market[8]. In economic theory, if there is risk and uncertainty, the bid-ask spread will tend to increase, but in the end it will cause a decrease in liquidity in the market [9].

The COVID-19 pandemic has had an impact on listed companies in Indonesia's capital market, as seen by a drop in stock indices, one of which is the Jakarta Islamic Index (JII). The JII is a sharia stock index that was initially introduced to the Indonesian capital market on July 3, 2000, and is comprised of 30 sharia stocks with high liquidity and high market capitalization, hence this research was done on JII.
This study aims to investigate the reaction of the JII stocks to the announcement of COVID-19 as a disaster in Indonesia. By looking at how it affects stock returns and liquidity, while in a liquidity perspective, this study measured liquidity from the dimensions of Trading Volume Activity (TVA) and Bid-Ask Spread (BAS).

2 Literature Review

COVID-19 is a new disease with an incomplete clinical course, where W. Liu et al described that the virus that causes COVID-19 was detected early in the epidemic due to a respiratory infection in Tongji Hospital, Wuhan and the World Health Organization (WHO) declared COVID-19 a Global Pandemic on March 11, 2020 [10].

In Indonesia case, on April 13, 2020 the Indonesian President declared the Covid-19 outbreak a national disaster through the issuance of Presidential Decree No. 12 of 2020 concerning the Determination of Non-Natural Disasters for COVID-19 as a national disaster [11].

Previous research has found that the COVID-19 pandemic has had a significant impact on global health and the economy, which has triggered the upcoming economic crisis and recession [2]. The rapid spread of the COVID-19 outbreak in Indonesia has had a great impact on the Indonesian economy, where there has been a spike in the number of sufferers with a high fatality rate of accumulated data from March 2 to May 4, 2020 as many as 11,192 positive cases and 8,452 deaths, this is very worrying and causing panic among the government, society, and the business world [12].

Previous studies have also proven that the COVID-19 pandemic has affected the world's capital markets by affecting stock prices, liquidity and volatility [3], [4], [5], [6], [8], [13]. Likewise with the capital market in emerging markets such as in Indonesia. Previous studies in Indonesia on the influence of the COVID-19 pandemic on the capital market in Indonesia [7], [14], [15], [16]. In the Indonesian capital market itself, the Covid-19 pandemic has also had an impact on listed companies, which is projected through a decline in stock indexes, one of which is the Jakarta Islamic Index (JII). JII is the first sharia index in Indonesia, which consists of 30 stocks that have a large market capitalization and high liquidity.

The extensive literature on liquidity agrees that various aspects of liquidity define different dimensions, although there is no clear list of dimensions [17]. This study used liquidity dimensions such as trading volume, which takes into account depth and bid-ask spread which measures tightness.

Previous research has shown that COVID-19 pandemic in Indonesia has greatly affected the stock market on the IDX [18], [19], [16], [15], [14]. However, based on the knowledge of the authors, previous studies have not yet explored other liquidity proxy such as bid-ask spread, especially in JII stocks. Therefore, this study conducted on this issue by using bid-ask spread Corwin-Schultz to measure other liquidity proxy besides TVA.

3 Methodology and Data Analysis

The study conducted an event study methodology [20]. The event of this study is the announcement of the Indonesian President declared the COVID-19 outbreak a national disaster which happened on 13 April 2021. The observation period in this study used a short-term period lasting 21 days, which are detailed in Table 1.
Table 1. Window Period

<table>
<thead>
<tr>
<th>Event Date</th>
<th>Event Window</th>
<th>Prior-Event Window</th>
<th>Post-Event Window</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 April 2020</td>
<td>26 March – 28 April</td>
<td>26 March – 9 April</td>
<td>14 – 28 April 2020</td>
</tr>
</tbody>
</table>

Source: Processed Data (2020)

For data analysis, t-test and regression employed in this study. Abnormal return employed to determine whether the event has an effect on the stocks return. Abnormal return is calculated in equation 1 [20]:

\[ AR_{it} = R_{it} - E(R_{it}) \] (1)

Where, \( AR_{it} \) is Abnormal Return, \( R_{it} \) is Actual Return and \( E(R_{it}) \) is the normal return.

Expected return is calculated in equation 2 [21]:

\[ E(R_{it}) = \alpha_i + \beta_i R_{mt} + \epsilon_{it} \] (2)

Where \( E(R_{it}) \), \( \alpha_i \), \( \beta_i \), \( R_{mt} \), \( \epsilon_{it} \) are expected return, constant, beta coefficient market return, market return and error term respectively.

Next, TVA is an equation that shows the comparison between the number of shares traded at a certain time and the number of shares outstanding at a certain time [22]. While bid-ask spread calculated in equation 3, This study employed bid-ask spread of Corwin-Schultz following the previous study [23].

\[ S = \frac{2(e^\gamma - 1)}{1 + e^\gamma} \] (3)

Where bid-ask spread denoted S and exponential denoted e.

\[ \alpha = \frac{2\beta - \sqrt{\beta^2 - 3\gamma}}{3 - 2\sqrt{2}}, \quad \beta = \sum_{j=1}^{\gamma} \left( \frac{H_{t+j}^0}{L_{t+j}^0} \right)^2 \]

which is the sum of the expected squared ratios of high and low prices for two days in a row

\[ \left( \frac{H_{t+j}^0}{L_{t+j}^0} \right)^2 \]

Gamma (\( \gamma \)) equals to a squared ratio of high and low prices a range of two days.

Next, the regression model employed to examine the effect of the event on return, TVA and bid-ask spread (BAS) in equation 4, 5 and 6 respectively:

\[ AR_{it} = \alpha_i + \beta_i R_{mt} + \epsilon_{it} \] (4)

\[ TVA_{it} = \alpha_i + \beta_i TVA_{mt} + \epsilon_{it} \] (5)

\[ BAS_{it} = \alpha_i + \beta_i BAS_{mt} + \epsilon_{it} \] (6)

Where \( AR_{it} \), \( TVA_{it} \), \( BAS_{it} \), \( \alpha_i \), \( \beta_i \), \( R_{mt} \), \( TVA_{mt} \), \( BAS_{mt} \), \( \epsilon_{it} \) are abnormal return, TVA, bid-ask spread constant, beta coefficient market return, beta coefficient market TVA, beta coefficient Market bid-ask spread, and an error term respectively.

The data used is JII stocks period of December 2019 – May 2020 which has 30 stocks. All data retrieved from Indonesian Stocks Exchange (IDX).

4 Research Result and Discussion

This study investigated the effect of the Indonesian President declared the COVID-19 outbreak as a national disaster which happened on 13 April 2021.
In Table 2, the results of the one sample t-test on average abnormal returns showed a significant effect on the second day and the fourth day after the announcement day which indicated an abnormal return received by investors on that day. However, the average value of a negative abnormal return in the fourth day implies that investors received a lower return than expected.

Additionally, based on the results of the one sample t-test of average TVA (ATVA) in Table 2, it is found that ten days after the announcement as a whole showed significant results. Next, based on the results of the one sample t-test of the average BAS (ABAS) in Table 2, significant results were obtained on the first day to the ninth day after the announcement. These results indicated that the event has an effect on TVA and BAS of JII stocks.

In sum, generally, based on the paired sample t-test for abnormal return, TVA and BAS experienced a significant effect before and after the announcement day, however it didn't display in the report.

### Table 2. Results of One Sample t-Test Abnormal Return, TVA and BAS of JII Stocks

<table>
<thead>
<tr>
<th>Date</th>
<th>AAR</th>
<th>p value</th>
<th>ATVA</th>
<th>p value</th>
<th>ABAS</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>-10</td>
<td>0.00533</td>
<td>0.626</td>
<td>0.00084</td>
<td>***0.000</td>
<td>0.15369</td>
<td>**0.043</td>
</tr>
<tr>
<td>-9</td>
<td>-0.00500</td>
<td>0.450</td>
<td>0.00144</td>
<td>***0.000</td>
<td>0.07453</td>
<td>**0.047</td>
</tr>
<tr>
<td>-8</td>
<td>0.00547</td>
<td>0.659</td>
<td>0.00129</td>
<td>***0.000</td>
<td>0.10131</td>
<td>***0.000</td>
</tr>
<tr>
<td>-7</td>
<td>-0.00664</td>
<td>0.095</td>
<td>0.00117</td>
<td>0.318</td>
<td>0.10769</td>
<td>0.326</td>
</tr>
<tr>
<td>-6</td>
<td>0.00521</td>
<td>0.495</td>
<td>0.00141</td>
<td>***0.001</td>
<td>0.11780</td>
<td>0.326</td>
</tr>
<tr>
<td>-5</td>
<td>-0.00732</td>
<td>0.498</td>
<td>0.00132</td>
<td>***0.000</td>
<td>0.09313</td>
<td>***0.000</td>
</tr>
<tr>
<td>-4</td>
<td>0.02065</td>
<td>0.152</td>
<td>0.00125</td>
<td>***0.000</td>
<td>0.14999</td>
<td>***0.004</td>
</tr>
<tr>
<td>-3</td>
<td>0.02285</td>
<td>0.097</td>
<td>0.00139</td>
<td>***0.000</td>
<td>0.12765</td>
<td>***0.008</td>
</tr>
<tr>
<td>-2</td>
<td>-0.00053</td>
<td>0.926</td>
<td>0.00172</td>
<td>***0.000</td>
<td>0.07653</td>
<td>***0.000</td>
</tr>
<tr>
<td>-1</td>
<td>-0.00219</td>
<td>0.788</td>
<td>0.00233</td>
<td>***0.000</td>
<td>0.10095</td>
<td>**0.020</td>
</tr>
<tr>
<td>+1</td>
<td>0.00898</td>
<td>0.330</td>
<td>0.00189</td>
<td>***0.000</td>
<td>0.07780</td>
<td>***0.000</td>
</tr>
<tr>
<td>+2</td>
<td>0.00041</td>
<td>***0.000</td>
<td>0.00186</td>
<td>***0.000</td>
<td>0.08272</td>
<td>**0.036</td>
</tr>
<tr>
<td>+3</td>
<td>0.01107</td>
<td>0.145</td>
<td>0.00173</td>
<td>***0.000</td>
<td>0.08187</td>
<td>***0.000</td>
</tr>
<tr>
<td>+4</td>
<td>-0.02412</td>
<td>***0.001</td>
<td>0.00134</td>
<td>***0.000</td>
<td>0.06381</td>
<td>***0.000</td>
</tr>
<tr>
<td>+5</td>
<td>-0.00253</td>
<td>0.553</td>
<td>0.00205</td>
<td>***0.000</td>
<td>0.06269</td>
<td>***0.000</td>
</tr>
<tr>
<td>+6</td>
<td>-0.01086</td>
<td>0.053</td>
<td>0.00199</td>
<td>***0.000</td>
<td>0.06529</td>
<td>***0.000</td>
</tr>
<tr>
<td>+7</td>
<td>-0.00039</td>
<td>0.969</td>
<td>0.00204</td>
<td>***0.000</td>
<td>0.10072</td>
<td>***0.000</td>
</tr>
<tr>
<td>+8</td>
<td>-0.00252</td>
<td>0.683</td>
<td>0.00212</td>
<td>***0.000</td>
<td>0.06794</td>
<td>***0.000</td>
</tr>
<tr>
<td>+9</td>
<td>0.00170</td>
<td>0.725</td>
<td>0.00261</td>
<td>***0.000</td>
<td>0.06631</td>
<td>***0.000</td>
</tr>
<tr>
<td>+10</td>
<td>-0.00237</td>
<td>0.593</td>
<td>0.00122</td>
<td>***0.000</td>
<td>0.05652</td>
<td>0.081</td>
</tr>
</tbody>
</table>

*Indicates statistical significance at the 0.05 level
**Indicates statistical significance at the 0.01 level
Furthermore, the results of the simple linear regression test in table 3 also strengthen the existing results where the significance value of market return is significant at 1% level, with a negative regression coefficient, which means that the announcement of the COVID-19 pandemic as a national disaster by Indonesian President was influential negative abnormal returns of JII stocks. The results of this study are in line with previous studies [3], [4], [5], [6], [24].

In addition, the results of the regression test in table 3 also strengthen existing findings where the significance is on 5%, with a positive regression coefficient on TVA. Next, in table 3 also show a significant level at 1%, on bid-ask spread, which means that the announcement of the COVID-19 pandemic as a national disaster has a positive effect on TVA and BAS as well. This result supports the previous research [8], [13].

| Table 3. Regression Results of Abnormal Return, TVA and BAS of JII Stocks |
|-----------------|-----------------|-----------------|
| Variable        | Coefficient     | t-statistics    | p-value           |
| Model 4         |                 |                 |                  |
| Constant        | 0,001           | 0,641           | 0,529            |
| Market Return   | -6,169          | -3,012          | ***0,007         |
| Model 5         |                 |                 |                  |
| Constant        | 4,037           | 24,285          | 0,000            |
| Market TVA      | 3,087           | 2,716           | **0,014          |
| Model 6         |                 |                 |                  |
| Constant        | 0,040           | 3,564           | 0,002            |
| Market BAS      | 1,566           | 4,806           | ***0,000         |

*** Indicates statistical significance at the 0.01 level
** Indicates statistical significance at the 0.05 level

In sum, these findings imply that Indonesian President declaration of COVID-19 as a national calamity contained information because the incident was accompanied by abnormal returns, causing investors to respond. Thus, these findings support the previous research. Furthermore, using the Corwin-Schultz formulation, the outcomes of this study added the liquidity dimension to the dimension of bid-ask spread.

5 Conclusion

This study found that there was a significant abnormal return on the second and the fourth after the event date. Additionally, there were significant differences in abnormal returns, TVA and bid-ask spreads of the JII before and after the announcement of COVID-19 as a national disaster by Indonesian President. In addition, the announcement of COVID-19 had a negative effect on abnormal returns, however, had a positive effect on TVA and bid-ask spread, therefore, these results supporting the previous researches.

6 Implication and Suggestion for Future Research

The implication of this study is to give companies and investors an overview of an event like a pandemic as a factor to consider when making investment decisions. Because the present
pandemic is still ongoing, this study has limitations, such as the fact that it only looks at stock market liquidity over a short period of time. As a result, it can be expanded to include more research on capital market liquidity over a longer length of time.

7 References


Forecasting Model for State-Owned Bank Stock Prices During Pandemic: GARCH Model Application

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Abstract. Since Covid-19 was announced as pandemic by Indonesian authorities, it had many negative effects, more particularly on banking sector. The aim of this study is to measure the impacts of Covid-19 on Bank Negara Indonesia stock prices and to find the best-fit model to forecast its daily stock prices for the next 30 days. The application of Generalized Autoregressive Conditional Heteroscedasticity (GARCH) model was applied to measure the residual of mean and variance. The finding is to apply AR(1)-GARCH(1,1) model to forecast the future stock prices as the R-square of the model is more than 98%, indicating more accuracy. The forecast shows gradual increase of stock prices indicating that economic growth tends to come out from recession gradually.

Keywords: Covid-19 Pandemic, Banking Sector, GARCH Model, Forecasting.

1 Introduction

Corona Virus 2019 (Covid-19) was spread globally in late 2019, and it started affecting Indonesia officially announced by authority in March 2020. Since then, many Indonesians have suffered to survive, as many aspects of life have been restricted such as economic activities have not been run as usual. [1] argued in his empirical study that the pandemic has caused slowing down the financial economics and so does economic growth around the world. Moreover, International Monetary Fund (IMF) in 2020 stated that the pandemic caused worse economic crisis than what happened in 2008. Indonesia composite index (IHSG) was also significantly dropped, of which it touched its lowest level of Rp3,911.71 for the first time. The Financial Authority Service (OJK) and Indonesia Stock Exchange (IDX) issued some policies to stabilize market condition by reducing the trading hour of 1.5 hour since 30th March 2020 and by loosening the investors to buy back without approval from General Meeting of Stockholders, and by implementing a policy of pausing trading for 30 minutes in case of a 5% decline in intraday trading.

Furthermore, [2] found the pandemic caused global banking sector having detrimental impacts, such as default risk, liquidity risk and asset risk. The negative impacts as global pandemic occurred in Chinese’s banking particularly are included in short term, long term, and systemic risks [3]. They suggested that credit supports from Chinese government is highly essential to prevent from high economic recession, such as interest rate deduction, and digital transformation. Meanwhile, Indonesian banking is also threatened to have some risks since the
Covid 19 pandemic, including default risk in Medium and Small Enterprises (UMKM) sector that might not enable to repay their obligation, market risk as weakening exchange rate, and liquidity risk as debitters experiencing some difficulties in their business and income [4]. As risk increasing, stock prices drop [5].

Bank Negara Indonesia (code: BBNI) is one of state-owned banks in Indonesia that also suffers from the negative impacts during the pandemic. It was reflected on their semi-annual financial report in Semester 1 2020, which showed a significant loss in a year-to-year basis. [6] found that BBNI had the most significant drop in earning, in which it suffered a loss of 41.54% compared with that in Semester 1 2019. This decreased earning is believed to decrease in BBNI stock prices as evidently showing in their financial report. Thereby, the volatility in price movement in stocks is essential to measure market risk in accordance to provide more insight for investors [7].

To some extent, volatility is the statistical measurement of the return distribution on a provided security that can be evaluated by implementing standard deviation among returns [8]. Of which, [9] introduced Generalized Autoregressive Conditional Heteroscedasticity (GARCH) model to measure the high volatility. The model has been widely used in various economic aspects to have its forecasting data. A model of AR(4)-GARCH(1,1) is applied to forecast volatility stock prices in Indika Energy (INDI) [10]. Besides, the model also is applied to predict the prices of some commodities, for example [11] estimated the future prices of future natural gas (FNG); [12] measured the forecasted daily oil prices by modelling GARCH (1,1).

Therefore, the study is to measure the future daily prices of BBNI stocks as the Covid-19 outbreak occurred in 2020 by implementing the application of GARCH model.

2 Methodology and Data Analysis

2.1 Transformation of Stationary Data

The first stage before modelling GARCH is to ensure the data set is in stationary. To do so, it can be done first by visually checking the data plot; second by statistically testing Augmented Dickey-Fuller (ADF Test); and third by computing autocorrelation function (ACF) and the partial autocorrelation (PACF). In ADF test, [13] proposed the equation statistically to check stationary data, which is as follows.

\[ DF_{t} = \frac{y_{t}}{\hat{\sigma}_{y_{t}}} \]  

(1)

The hypothesis is defined as.

H0 : \[ DF_{t} \tau > 2.57 \]  non-stationary

H0 : \[ DF_{t} \tau < 2.57 \]  stationary

However, Gunarto et al. (2020) stated that in financial data series stationary data set are not found both in mean and variance, so they suggested to apply differencing method.

2.2 Differencing Method

It was [14] offered the transformation tool to change the non-stationary data set into stationary by differencing data set to stabilize the mean and volatility.

\[ a(B) = (1-B)^d \]  

(2)
where \( B \) is defined as backward operator; \( d \) is the number of differencing; and \( a(B) \) is the integrating filter of order \( d \). [15] explained by implementing differencing method and the data set has been stationary, then GARCH model can be applied.

2.3 ARCH-effect Test

Heteroscedasticity in financial data set has been an issue in modelling time series data [16] or having an Autoregressive Conditional Heteroscedasticity (ARCH) effect, of which can make parameter estimate for forecasting model inaccurate. ARCH effect can be measured by examining Lagrange Multiplier (LM) test [17], and the order of ARCH can be determined by applying the Portmanteau test [18]. When LM test has a probability of 0.5, the model involves heteroscedasticity. Thereby to generalise it, GARCH(p,q) model can be applied [15].

2.4 AR(p)-GARCH(p,q) Model

The model can be equated as follows.

\[
BBNI_t = \alpha + \sum_{i=1}^{p} \theta_i BBNI_{t-i} + \epsilon_t \tag{4}
\]

\[
\sigma_t^2 = \beta + \sum_{i=1}^{q} \gamma_i \epsilon_{t-i}^2 + \sum_{j=1}^{p} \phi_j BBNI_{t-j} \tag{5}
\]

This model combines the \( m \)th-order autoregressive error model with the GARCH (p,q) variance model, which is denoted as the AR (m) - GARCH (p,q) regression model.
3 Results and Discussion

In this study, we observed daily data of stock prices from Bank Negara Indonesia (BBNI) in 2020. There are 242 data collection during the study period and to be analysed to obtain the fitted model for its daily forecasting. The graph below shows the plot for BBNI stock prices.

![Distribution of the Daily Stock Prices for Bank Negara Indonesia](image)

Generally, Figure 1 shows that the daily stock prices of BBNI during the study period have fluctuated. The fluctuation was quite normal in early 2020, but after Indonesian government officially announced pandemic in March 2020, BBNI stock price dropped significantly at the lowest level. Afterwards, the movement of BBNI stock price was in upward trend, although it was not that high. It was because authorities have implemented the “new normal” policy that encourage the economic growth. However, the graph shows as non-stationary because mean and variance are not at around zero. In addition, statistically this visual measurement can be proven by applying ADF test as follows.

**Table 1.** Augmented Dickey–Fuller (ADF) test for BBNI Stock Prices

<table>
<thead>
<tr>
<th>Bank Code</th>
<th>Type</th>
<th>Lags</th>
<th>Rho</th>
<th>Pr &lt; Rho</th>
<th>Tau</th>
<th>Pr &lt; Tau</th>
<th>F</th>
<th>Pr &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>BBNI</td>
<td>Zero Mean</td>
<td>3</td>
<td>-0.4072</td>
<td>0.5899</td>
<td>-0.6734</td>
<td>0.4249</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Single Mean</td>
<td>3</td>
<td>-4.7006</td>
<td>0.4618</td>
<td>-1.7011</td>
<td>0.4294</td>
<td>1.4931</td>
<td>0.6903</td>
</tr>
<tr>
<td></td>
<td>Trend</td>
<td>3</td>
<td>-3.7265</td>
<td>0.9008</td>
<td>-1.3976</td>
<td>0.8592</td>
<td>2.2395</td>
<td>0.7301</td>
</tr>
</tbody>
</table>
Table 1 shows the probability from ADF test in BBNI stock prices is more than 0.5, so we do not reject null hypothesis, or the data set is statistically non-stationary in mean and variance. This measurement also is supported by the examining ACF and PACF graphs as follows.

Figure 2 presents the slow movement in ACF indicating after lag 1 the data set distributions are not at around zero or non-stationary data set. In addition, the data sets on the PACF graph at lag 1 are also not at around zero which assigns time series as non-stationary data set.

### 3.1 Stationary Data

As data sets are non-stationary, the next stage is to transform it into stationary data by employing the differencing method. Table 2 shows ADF test after differencing lag 1 (d = 1) was conducted.

Table 2. ADF test for BBNI after differencing 1 (d = 1)

<table>
<thead>
<tr>
<th>Bank Code</th>
<th>Type</th>
<th>Lags</th>
<th>Rho</th>
<th>Pr &lt; Rho</th>
<th>Tau</th>
<th>Pr &lt; Tau</th>
<th>F</th>
<th>Pr &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>BBNI</td>
<td>Zero Mean</td>
<td>3</td>
<td>-137.438</td>
<td>0.0001</td>
<td>-6.57</td>
<td>&lt;.0001</td>
<td>21.51</td>
<td>0.0010</td>
</tr>
<tr>
<td></td>
<td>Single Mean</td>
<td>3</td>
<td>-138.101</td>
<td>0.0001</td>
<td>-6.56</td>
<td>&lt;.0001</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trend</td>
<td>3</td>
<td>-156.960</td>
<td>0.0001</td>
<td>-6.76</td>
<td>&lt;.0001</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

![ACF and PACF graphs for Bank Negara Indonesia](image)
Table 2 indicates data set has been stationary in mean and variance once differencing lag 1 (d=1) conducted, where its probability is significant of 0.001. Figure 2 verifies this transformation. The distribution of residual in ACF graph shows is at around zero in mean and variance, while PACF graph has a delay movement.

![Trend and Correlation Analysis for BNI(1)](image)

**3.2 ARCH Effect Identification**

Before modelling data set, heteroscedasticity issue should be solved by checking the involvement of ARCH effect. Table 3 measures Portmanteau Q and LM test that have probability value of <0.0001. Therefore, to generalize heteroscedasticity problem GARCH(p,q) model can be applied.

**Table 3. Tests for ARCH disturbances based on residuals for BBNI**

<table>
<thead>
<tr>
<th>Order</th>
<th>Q</th>
<th>Pr &gt; Q</th>
<th>LM</th>
<th>Pr &gt; LM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>249.215</td>
<td>&lt;.0001</td>
<td>215.266</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>2</td>
<td>469.538</td>
<td>&lt;.0001</td>
<td>215.673</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>3</td>
<td>665.988</td>
<td>&lt;.0001</td>
<td>215.794</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>4</td>
<td>840.811</td>
<td>&lt;.0001</td>
<td>215.89</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>5</td>
<td>998.464</td>
<td>&lt;.0001</td>
<td>215.89</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>6</td>
<td>1136.97</td>
<td>&lt;.0001</td>
<td>216.325</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>7</td>
<td>1255.85</td>
<td>&lt;.0001</td>
<td>216.375</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>8</td>
<td>1356.44</td>
<td>&lt;.0001</td>
<td>216.453</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>9</td>
<td>1441.9</td>
<td>&lt;.0001</td>
<td>216.455</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>10</td>
<td>1517.44</td>
<td>&lt;.0001</td>
<td>216.626</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>11</td>
<td>1584.63</td>
<td>&lt;.0001</td>
<td>216.631</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>12</td>
<td>1645.36</td>
<td>&lt;.0001</td>
<td>216.659</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>
3.3 GARCH Model

Conditional heteroscedasticity is crucial to have a good-fit forecasting model. The AR(p)-GARCH(p,q) model allows to do so, where AR(p) is conditional to have a mean model and GARCH(p,q) is to have a model of variances and squared residuals for BBNI data set.

Table 4. Estimation of the parameters of AR(1)-GARCH(1,1) for BBNI

| Variable | DF | Estimate | Standard Error | t Value | Approx. Pr > |t|
|----------|----|----------|----------------|---------|---------------|
| Intercept| 1  | 6395     | 791.5428       | 8.08    | <.0001        |
| AR1      | 1  | -0.9958  | 0.00588        | -169.3  | <.0001        |
| ARCH0    | 1  | 4209     | 2085           | 2.02    | 0.0435        |
| ARCH1    | 1  | 0.1751   | 0.0476         | 3.68    | 0.0002        |
| GARCH1   | 1  | 0.6575   | 0.1152         | 5.71    | <.0001        |

Table 5. Statistic Description for AR(1)-GARCH(1,1) model

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSE</td>
<td>6297864.61</td>
<td>Observations</td>
</tr>
<tr>
<td>MSE</td>
<td>26024</td>
<td>Uncond Var</td>
</tr>
<tr>
<td>Log Likelihood</td>
<td>-1557.1677</td>
<td>Total R-Square</td>
</tr>
<tr>
<td>SBC</td>
<td>3141.78008</td>
<td>AIC</td>
</tr>
<tr>
<td>MAE</td>
<td>115.602233</td>
<td>AICC</td>
</tr>
<tr>
<td>MAPE</td>
<td>2.36031843</td>
<td>HQC</td>
</tr>
<tr>
<td>Normality Test</td>
<td>24.0827</td>
<td></td>
</tr>
<tr>
<td>Pr &gt; ChiSq</td>
<td>&lt;.0001</td>
<td></td>
</tr>
</tbody>
</table>
The model of AR(1)-GARCH(1,1) model is equated as follows.

Mean model of AR (1): \[ BBNI_t = 6395 - 0.9958 \cdot BBNI_{t-1} \]

Variance model of GARCH (1,1): \[ \sigma_t^2 = 4209 + 0.1751 \cdot \varepsilon_{t-1}^2 + 0.6575 \cdot \sigma_{t-1}^2 \]

The equation models statistically fit the data set, as in Table 5 total R-square is 98.25%, indicating a strong explanation for the forecasting model. Further, the disturbances of conditional variance are constant because from the Table 4 it can be noticed that the sum of ARCH and GARCH coefficients is approaching one. Therefore, the model is confidently to forecast the daily stock prices of BBNI as follows.

![Fig. 4. Predicted Data of BBNI Stock Prices for 30 Days](image)

From the model, the expected estimation in the next 30 days of BBNI shows a gradual increase, as shown in Figure 4. This is believed as the authorities have been struggling to stabilize economic condition, such as providing assistance to business actors, providing tax incentives, relaxing and restructuring loans, expanding working capital financing, product support, and e-learning training [19]. Globally, [3] argued that the gradual increase in any sector during pandemic is to support MSEs by facilitating them with special credit lines, interest rate reduction on loans, deferred repayments, and digital transformation. When MSEs are excited again with various program support from the government, indirectly the role of banks in intermediation can be more stretched and result in better growth for the financial sector.

4 Conclusion

In our final section, the study that has been completed describes the performance of the econometric model in forecasting daily stock price for BBNI. Our study found an econometric model that can be used in designing BBNI’s future stock prices. AR(1)-GARCH(1,1) came out as the best. This model shows excellence with very applicable evidence in forecasting the future of BBNI. In more detail, we found that the stock prices of BBNI show a gradual performance but is not significant. Therefore, as an economic driver in Indonesia, BBNI should take a proper supporter for government to stabilize Indonesian economy.
References


[18] H. Wong and W. K. Li, “Portmanteau test for conditional heteroscedasticity, using ranks of

The Effect of GRDP, Foreign Investment and Population Density on Environmental Quality in Java Island (2010-2019)

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Abstract. This study aims to analyze and determine the effect of GRDP, Foreign investment and population density on the quality of the environment in Java Island from 2010 - 2019. The method used in this study is Panel Least Square (PLS) with Common Effects Model (CEM). The results of the analysis conducted show that the three independent variables have effects on the dependent variable EQI. With a confidence level of 95% and a significant result, the GRDP variable has a positive and significant effect, while the foreign investment variable and population density have a negative effect on the quality of the environment on the island of Java in 2010 - 2019. From the result of this study, the right steps can be taken for policy makers to achieve sustainable economic development and issue programs or policies that can support environmental quality improvement.

Keywords: Environmental Quality Index, GRDP, Foreign Investment, Population Density.

1 Introduction

Economic development to improve people’s welfare needs to be carried out in various aspects, but all economic activities require natural/environmental resources so that economic and environmental activities cannot be separated. The environment can be optimized to support economic development, a country must be able to utilize natural resources as well and efficiently as possible to support economic growth so that the use of natural resources is directed to protect the environment in an effort to grow. One of the challenges of national and regional development in Indonesia is the issue of resource utilization for the economy and environmentally sound resource management. Regional resource development has a dual role in utilizing it as a capital for economic growth (Resource Based Economy) and at the same time as a support for life systems (Life Support Economy) [1]

According to the Central Bureau of Statistics Indonesia, Indonesia’s economic growth is still supported by the island of Java as the center of the national economy and as the largest contributor to national economic growth compared to other islands outside Java. However, important issues in economic development in recent decades are the linkages between economic development and changes in environmental quality which tend to decline.

Based on the presentation of the data on the value of environmental quality and the classification of the EQI category and it is clarified from the comparison in Figure 2 provinces
on the Java Island, there are problems which indicate that no province has yet received the predicate of a good category in increasing the value of environmental quality. The achievement of the value of environmental quality in Java is predicted because of the high economic activity of the island of Java as an industrial island in supporting the development of the national economy. This study aims to examine the effect of GRDP, foreign investment and population density on environmental quality in Java.

2 Literature Review

Development Economic Theory

Economic development according to [2] is a process of increasing total income and per capita income by taking into account population growth accompanied by fundamental changes in the economic structure of a country and income distribution for all residents of a country. Economic development is an effort to increase per capita income by processing potential economic power into a real economy through investment, use of technology, addition of knowledge, improvement of community skills, as well as additional organizational and management capabilities.

Sustainable Development

Definition of sustainable development by [3] in World Commission on Environment and Development (WCED) are included in Our Common Future or report Brundlandyaitu development that meets the needs of the present generation without compromising the fulfillment of the needs of future generations whose concept consists of three A -spec economic, social and the environment [4]. According to the International Union for Conservation of Nature and Natural Resources (IUCN) (1980) in the world conservation strategy explained that to carry out sustainable development, the implementation of development must consider environmental, social and economic factors based on living resources and consider long-term and long-term advantages or disadvantages. short term of an alternative course of action.

Environmental Economics

According to Lopez, and Thomas [5] states that the economy derives most of its income from natural resources in the country or region. This means that the quality of existing natural resources (including the environment therein) has a considerable influence, where if a country or region is not able to preserve and maintain natural resources and its environment, it will be threatened with stagnation in its growth rate or even decline, especially in the long term.

Environmental Kuznet Curve (EKC)

The Environmental Kuznets Curve (EKC) theory states that cases in developing countries over time, technological advances can damage nature and the environment. Meanwhile, in developed countries over time, technological advances can improve environmental sustainability. This theory is known as the first theory to describe how the relationship between the level of economic growth and environmental degradation. This theory states that when a country's income is still relatively low, the country's attention - both in terms of production, is investment that can encourage an increase in income by ignoring environmental problems [6]. As a result, income growth will be followed by pollution levels and then it will decrease with continuous growth.
3 Methodology and Data Analysis

Variable Operational Definition
This study uses secondary data sourced from the Central Statistics Agency (BPS) of Indonesia and the Ministry of Environment and Forestry of the Republic of Indonesia. The following are the variables, in this study:

- \( Y \): Environmental Quality Index
- \( X_1 \): Gross Regional Domestic Product
- \( X_2 \): Foreign Investment
- \( X_3 \): Population Density

Data Types and Sources
The data used is a combination of cross section data and time series data which is also known as panel data. The cross section data is data from six provinces on the island of Java and time series data is data from the last four years, namely 2010-2019.

Analysis Method
The model used in this study is the specification of the research model as follows:

- \( EQI_{it} \): Environmental Quality Index
- \( GRDP_{it} \): Gross Regional Domestic Product
- \( PMA_{it} \): Foreign Investment Realization
- \( DEN_{it} \): Population Density
- \( \beta \): Constant
- \( \beta_{1,2} \): Coefficient
- \( \epsilon \): Residual (error term)
- \( i \): Province
- \( t \): Time
- \( \log \): Logarithmic transformation

4 Research Result and Discussion

Discussion of Research Results
From the results of the research that has been done, the results obtained in the model are as follows:

The Influence of GRDP on EQI in Java Island
Gross Regional Domestic Product (GRDP) according to the Central Statistics Agency is the overall value of all goods and services produced in a region within a certain period of time which is used as an indicator to determine the economic growth of a region, analysis material for the level of community prosperity and the level of change in goods and services. services, meaning that the success of the economic development of a country or region is reflected or can be seen from the country's GDP. Based on the results of the GRDP regression, it is positive and significant to the IKLH. This means that if there is an increase in GRDP of 1%, it will cause an increase in the IKLH value of 0.55563% with the assumption of \( ceteris paribus \).

The positive relationship between GRDP and environmental quality can be caused by several underlying factors, one of which is the comparison between the value of Eco Regional Domestic Product (ERD P) and GRDP. ERDP is the value of conventional GRDP minus the
value of GRDP from The extractive and polluting sectors, the calculation was initiated by The Statistical Office of the United Nations (UNSO) in 1990 as one of the Systems of Integrated Environmental and Economic Accounting (SEEA). Research conducted by [9] discusses related to ERDP in 30 provinces in Indonesia, the results of the study indicate that the province in Java is not included in the province that has a low proportion of ERDP value to GRDP, this means that the economy is dominant in Java Island, not supported by extractive or environmental resource sectors such as oil, gas, mining and forestry.

Then according to the Central Statistics Agency of Indonesia that economic growth in this case is GRDP in Java Island is still supported by the industrial and agricultural sectors. Gross Regional Domestic Product (GDP) in Java Island which is supported by the Industrial sector and the Agricultural sector when associated with (Law of the Republic of Indonesia Number 32 of 2009 concerning Environmental Protection and Management) concerning Environmental Protection and Management, in article 36 paragraph (1) it is explained that “Every businesses and or activities that are required to have an Amdal or UKL-UPL must have an environmental permit”. It is very evident that if every industrial activity actor can comply with this law to preserve the environment and get strict supervision by government agencies that allow these activities, then the positive influence on GRDP in affecting the environment in Java Island. Then research conducted by [11] discusses the green industrial policy (Green industrial Policy) which shows that industrial policy can achieve green growth (Green Growth) which is based on the use of sustainable renewable resources and green technology (Green Technology) or production techniques that save on non-renewable resources, and that produce fewer greenhouse gases.

The implementation and commitment of the government to maintain a sustainable quality of the environment, through the Ministry of Environment and Forestry of the Republic of Indonesia (KLHK RI) issued a Program for Rating Performance Ratings for Companies in Environmental Management (PROPER) which began in 1995 to encourage companies to improve their performance. sustainable environmental management. From the PROPER assessment, the company will get an image or reputation according to how it manages its environment. The image is divided into 5 upgrades, namely: assessed with Gold, Green, Blue, Red and Black Colors.

Based on the results of the evaluation of the KLHK and Provincial PROPER Technical Teams as well as considerations from the PROPER Advisory Council, then through the Decree of the Minister of Environment and Forestry of the Republic of Indonesia Number Sk. Environment in 2019 – 2020 (can be seen in appendix 9) that in Java there are 19 companies rated GOLD, 53 companies rated GREEN, 651 companies rated BLUE, 110 companies rated RED and 1 company rated BLACK. Of the 834 companies, these companies consist of Agroindustry, Manufacturing, Service Infrastructure, and Oil and Gas Energy Mining (Ministry of Environment and Forestry of the Republic of Indonesia).

From the KLHK publication report, the achievements of PROPER performance in 2019–2020 have achievements that are able to reduce greenhouse gas emissions by 131,238,206 tons of CO₂e, carry out energy efficiency of 430,244,918 gj, are able to reduce pollution loads by 46,160,473 tons, provide the impact of water efficiency is 339,529,963 m³ and 3R (Reuse, Reduce and Recycle) B3 waste 16,403,947 tons and 3R non-B3 waste 5,029,181 tons and are able to reduce conventional emissions by 5,942,514 tons. This achievement needs to be maintained and optimized to improve all aspects that are already running well so that the goal of the importance of a sustainable environmental condition can be achieved optimally and continue to be able to improve environmental quality, especially in Java.
The results of this study, which is a positive influence between GRDP and the quality of the environment in Java, are in accordance with previous research by [12], [13], as well as research from [14] which suggests that environmental quality will improve along with high economic growth.

The Influence of Foreign Investment on EQI in Java

Based on the regression calculation, Foreign Investment is negative and significant to IKLH. This means that every time there is an increase in the level of Foreign Investment by 1%, it will cause a decrease in the EQI value of 0.024166% with the assumption of ceteris paribus. The results of this study are in accordance with the hypothesis that has been determined by the author and the results of this study are in accordance with research conducted by Pranoto & Halim (2016) and (Hitam & Borhan, 2012) which research results show that foreign investment has a negative and significant effect on the environmental quality of the provinces in Indonesia.

The realization of foreign investment in Java, which can be seen through publications issued by the Indonesian Investment Coordinating Board, that the development of foreign investment in Java is still dominated by the housing, industrial estates and offices, electricity, gas, water transportation, telecommunications, Chemical and Pharmaceutical Industry and Motor Vehicle Industry.

The achievement of the realized value of foreign investment cannot be separated from the role of the government in efforts to increase income through various laws and regulations to regulate the flow of foreign investment funds into Indonesia. These regulations include (Law of the Republic of Indonesia Number 25 of 2007 concerning Investment, 2007 and later refined again in (Law of the Republic of Indonesia No. 11 of 2020 concerning Job Creation), one of which regulates the ease of doing business and improving the investment ecosystem and business activities. However, as a result of suboptimal adherence and less strict enforcement of regulations related to the environment and foreign investment so that there is a negative impact due to the high activity of industry that does not pay attention to environmental aspects then there are a variety of environmental issues, especially on water quality in Java. And based on the results of the evaluation of the KLHK and Provincial PROPER Technical Teams as well as the considerations of the oldest PROPER Advisory Council in the Decree of the Minister of Environment and Forestry of the Republic of Indonesia Number Sk.460/Menhk/Setjen/Kum.1/12/2020 concerning the results of the assessment of company performance ratings Life Management in 2019 – 2020 (can be seen in appendix 9) there are still as many as 110 companies getting the image or RED, which means that the company is carrying out environmental management efforts but has not complied with the requirements stipulated in the applicable law in this case including (Assessment) Water Management, Land Damage Assessment, Marine Pollution Control, Hazardous Waste Management, Air Pollution Control, Water Pollution Control, AMDAL Implementation) so that it causes environmental problems on water quality in Java Island. The following is the average water quality index on the island of Java.

The Effect of Population Density on EQI in Java

Based on the results of the Population Density regression, the value is negative and significant, so it can be interpreted that if there is an increase in population density by 1%, it will cause a decrease in the IKLH value of 0.0136004% with the assumption of ceteris Paribus. This means that as the population density increases in each province on the island of Java, the EQI will decrease as well.
The results of this study indicate that areas with high population density tend to have low environmental quality. In 2019, from a publication published by the Indonesian Central Bureau of Statistics that the largest population density in six provinces on the island of Java is DKI Jakarta province of 15900 people / KM $^2$ with an environmental quality value of 42.84 and is included in the alert category, then West Java as the second province with the highest population density after DKI Jakarta with a population density of 1394 people / KM $^2$ and the value of environmental quality of 51.64 which is included in the very poor category. In addition, centers of economic activity such as in big cities can also lead to increased population density. The desire to urbanize with reasons to find work, study, etc. is the main factor in increasing population density. For example, the DKI Jakarta area which is the center of education, and as the economic capital of the country certainly causes people to flock to urbanize there and there is a rapid increase in population density. That is, in theory population density will certainly increase the number of settlements as residential areas, besides that the population spike also results in environmental degradation or the erosion of very limited natural resources [2]. Therefore, the results of this study are in accordance with previous research conducted by Pranoto & Halim (2016) and [18] in which the results showed that population density had a negative and significant influence on environmental quality in 33 provinces of Indonesia.

The Influence of GRDP, PMA and Population Density on EQI in Java Island

In this study, the variables of GRDP, PMA and population density together have a significant effect on the Environmental Quality Indeks variable. This means that changes in economic growth can lead to changes in the quality of the environment in six provinces of Java Island. Thus, these results are consistent with the hypothesis that has been determined, as well as previous research Yang done by (Hitam & Borhan, 2012) Pranoto & Halim (2016), and RA & Arsyad (2015).

5 Implication and Suggestion for Future Research

For the creation of sustainable development and the protection of natural sustainability, the government as a policy maker is expected to pay more attention to the management of natural resources and the environment. Together with this, GRDP will have a positive effect on the quality of the environment for managing laws and regulations and also tightening regulations related to the environment in all economic activities that are carried out properly. The existence of these regulations and policies can later provide education about resources and the environment.

6 Reference


Analysis of Financial Distress Symptoms in the Company’s Performance: Bibliometric Studies

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Abstract. This study is a bibliometric analysis study of financial distress symptoms. The study aims to examine the development of research on financial distress to determine the following research. The phenomenon that occurs is the existence of global economic conditions that are not good from time to time, especially those that occur today with the covid19 pandemic. The research method was conducted using bibliometric analysis of 500 papers from indexed journals (Google Scholar) published from 2016 to 2021. The findings of this study were obtained by 5 cluster area studies on the symptoms of Financial Distress, so there is still a need for research to consider company managers or investors and other parties in making decisions.

Keywords: financial distress, distress, bankruptcy, performance

1 Introduction

When a company is established, the owner generally has a vision and mission to formulate the company's goals. The owner expects the company to get a significant profit, sales that increase over time. Furthermore, the company's goal can provide good performance, and the company continues to grow and survive for an extended period. This research aims to examine the symptoms of financial distress in the company's performance, where it is known that if the company's performance is not good, then it is likely that investors will leave the company so that it is likely that companies listed on the stock exchange can experience delisting. Initiating financial distress becomes essential to reduce losses and cost [1] Because of the importance of financial distress predictions in a company, a more dynamic and effective prediction model is needed for the company's sustainability [2]. Furthermore, this research will also examine alternative solutions that the company can do to avoid the occurrence of Financial Distress or the possibility of worse for the company.

Financial distress is a condition where the company is experiencing financial difficulties. In the long term, the company cannot achieve the company's goals. This condition does not occur suddenly but is a condition that can be seen; symptoms are mainly seen in the decline in performance over time.

Financial distress occurs due to various factors, both externally and internally, of the[3], where internal factors are generally influenced by a lack of knowledge and experience in effective
asset management and liabilities. In contrast, external factors that generally affect financial distress are high inflation, tax policies, regulations, applicable laws, and the decline in the currency's value. Events in the past year have been the Covid-19 pandemic, where macroeconomic conditions are declining in various countries in the world, including Indonesia. At that time, the government issued a decision on the implementation of Large-Scale Social Restrictions (PSBB) in Indonesia since April 2020, where people were urged to limit mobility and stay at home only, which then impacted all sectors of the economy and became a challenging year for various industries. Some sectors that experience unfavorable conditions based on statistical data [4] are retail and tourism, restaurants, and hotels. One example is Matahari Department Store, Tbk, which recorded a decrease in ROA from 33.4 in 2019 to -11.00 in 2020.[5]

A financial statement is one of the tools that can see the possibility of financial distress in a company. [3] statement analysis will be instrumental for company management to evaluate the company's performance. Financial statements can also be instrumental for investors to consider the possibility of further investments.

2 Literature Review

Conditions that are easily seen as an indication of financial distress in companies, especially in companies listed on the stock exchange, are removing its stock listing or commonly called delisting[4][6] listed shares or removing them from the existing list. In addition, it can also be removed at the request of the company issuer or called voluntary delisting.

Indications of financial distress are expressed by [5] in the banking context, where it can be seen from:

- Invalid reporting of the company's finances to investors where there is window dressing to the report to investors
- Financial ratios that exceed the threshold set by regulations show bad conditions.

Financial distress conditions experienced by the company are influenced by several factors, both external and internal,[6] while the internal factors that affect financial distress are:

- Liquidity is the ability of a company to make payments on its short-term obligations.
- Cash flow is a summary of a company's cash flow for a given period.
- The size of the company is generally calculated based on the total assets owned.
- Earnings/profits are changes in an entity's equity over a certain period or generally obtained from business activities.

External factors that affect financial distress are:

- Institutional ownership is the proportion of share ownership by the government / Institutions / legal entities / Financial institutions
- An independent commissioner is a member of the board of commissioners who are not affiliated with management, board members and shareholders, and is free from
business relationships or other relationships that affect the ability to act independently or act solely in the company's interests.

In other literature, financial distress is also regulations [7]. Macroeconomic conditions become a factor that increases the company's financial instability, where there is a decrease in demand for products or services produced, in the current macroeconomic conditions affected by the Covid-19 pandemic where these conditions aggravate the company's financial condition.

Various tools and models are used to analyze the symptoms of financial distress and even predict a company's bankruptcy; research tools and models about it have been done for a long time by Altman in 1968 [8] [10]. Altman developed the model using financial ratios into five categories, namely liquidity, profitability, leverage, solvency, and activities developed in a multi-discount model, namely [11]

\[
Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5
\]

\[X_1 = \text{Working capital/total asset}\]
\[X_2 = \text{Retained earning/total asset}\]
\[X_3 = \text{Earning before interest and taxes/total asset}\]
\[X_4 = \text{Market Value of Equity/Book Value}\]
\[X_5 = \text{Sales/total asset}\]
\[Z = \text{Score}\]

In addition to Altman, there is also a model to predict bankruptcy, which is a model developed by Springate [12] which uses multiple discriminant analysis (MDA) using four ratios of 19 financial ratios that will be able to provide the sound business of bankruptcy companies or not, where the models developed are:

\[
Z = 1.03X_1 + 3.07X_2 + 0.66X_3 + 0.4X_4
\]

\[X_1 = \text{Working capital/total asset}\]
\[X_2 = \text{Net profit before interest and taxes/total asset}\]
\[X_3 = \text{Net profit before taxes/current liability}\]
\[X_4 = \text{Sales/total asset}\]
\[Z = \text{Score}\]

In other [13] model that can also be used as a tool for predicting financial distress and bankruptcy symptoms is developed by:
1. **Zmijevski** where the models used are:

   \[ X = -4.3 - 4.5X1 + 5.7X2 + 0.004X3 \]

   \[ X1 = \text{ROA (return on asset)} \]

   \[ X2 = \text{Leverage} \quad (\text{total liabilities/total assets}) \]

   \[ X3 = \text{Liquidity} \quad (\text{asset lancef/lancef liability}) \]

2. **Foster** where the models used are:

   \[ Z = -3.66X + 0.657Y \]

   \[ X = \text{Transportation expense/operating revenue} \]

   \[ Y = \text{EBIT/interest expense} \]

3. **Grover's method, which is with the following models:**

   \[ Z = 1.650X1 + 3.404X2 + 0.016\text{ROA} + 0.057 \]

   \[ X1 = \text{Working Capital/total asset} \]

   \[ X2 = \text{Earning before interest and taxes/total asset} \]

   \[ \text{ROA = Net income/total asset} \]

All of the above models can be used to predict financial distress in companies both developed. Entrepreneurs use their accountants, administrators, and others who have an interest in their investment [14][15][16][2][17] While [18]conducting remarkable financial distress predictions of aviation companies in addition to the Altman method, it also compares with the P-Score model, Fuzzy logic model and Kroeze model, which with all models can describe the health condition of aviation companies in India.

### 3 Methodology and Data Analysis

This study uses bibliometric techniques where the steps are taken: 1) researchers use the Publish or Perish (PoP) application to determine the article that will be a sample of the study. The sample collection results obtained 500 articles from 2016 to 2021 from indexed journals (Google Scholar). 2) Researchers use the Vos Viewer application to map findings into the form of images based on 500 articles obtained, and mapping is done that is a) network image map(network) b) overlay visualization map c) density visualization map. 3) manually documenting the symptoms of Financial Distress based on the theory used, research methods/models (qualitative or quantitative research, data levels, variables used) 4) review
some samples of articles manually to examine further how financial distress symptoms occur and the possibility of alternative solutions that can be done to avoid the occurrence of Financial Distress

4 Results and Discussions

Table 1. Scope of research

<table>
<thead>
<tr>
<th>Range</th>
<th>Total</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesian</td>
<td>40</td>
<td>8</td>
</tr>
<tr>
<td>Asia</td>
<td>180</td>
<td>36</td>
</tr>
<tr>
<td>America, Europe, Australia</td>
<td>205</td>
<td>41</td>
</tr>
<tr>
<td>Africa</td>
<td>75</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>500</td>
<td>100</td>
</tr>
</tbody>
</table>

From Table 1, it can be seen that the scope of research obtained 8% of research related to financial distress symptoms was conducted in Indonesia, and the remaining 92% of research was conducted abroad. Most research was conducted in the Americas, Europe, and Australia, and the second largest was conducted in Asia, dominated by researchers from China. Thus it is concluded that there is still much-needed research on the symptoms of Financial Distress conducted in Indonesia from various types of business sectors; this is done to make theoretical and practical contributions.

Fig. 1. Network Visualization
Based on Figure 1, network visualization obtained 5 clusters based on color (red, green, blue, lime, and purple). Here is the cluster grouping

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Main variable</th>
<th>Supporting variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>Distress</td>
<td>Altman, capital structure, corporate financial distress, financial crisis, financial distress prediction, Kenya, prediction</td>
</tr>
<tr>
<td>Blue</td>
<td>Influence</td>
<td>The current ratio, financial statement, good corporate governance, Indonesian Stock Exchange</td>
</tr>
<tr>
<td>Lime</td>
<td>Leverage</td>
<td>Cash flow, liquidity, profitability</td>
</tr>
<tr>
<td>Purple</td>
<td>Covid</td>
<td>China</td>
</tr>
</tbody>
</table>

From the Network Visualization Image and the Cluster table concluded above, it can be known that the leading network is the Red Cluster, with the primary variable is distress. There is variable distress from 500 sample articles known to have 696 out of 1578 events in the sample article or 44%. In comparison, the smallest is the purple cluster with the primary variable Covid, which has ten events out of a total of 1578 events in the sample article or by 6%. That means that research on distress has been done very much, but research on Financial Distress caused by Covid is still very little.
In figure 2 about Overlay visualization, it can be seen that research on the symptoms of Financial Distress has been done for a long time. For samples taken by researchers where sample articles were conducted since 2017, the brighter the color shows the newness of the research conducted. Things that were widely researched from the beginning of 2017 and throughout the year were corporate financial distress, capital structure, good corporate governance, financial crisis, financial statement, current ratio, and many in Kenya. From the beginning of 2018 and throughout 2018 to early 2019, research was conducted on prediction, distress firms, financial distress risk, return, leverage, influence, and many studies on companies listed on the Indonesian Stock Exchange. Then in 2019, the research conducted was about financial distress prediction, cash flow, and the impact of Financial Distress. While for the year 2020 to early 2021, research is about Corporate Social Responsibility, Covid, and many studies conducted in China.
From figure 3 about Density, the visualization shows the most frequently researched topics from 500 sample articles. The most frequently researched topics are the brightest colored with extensive writing, namely Distress, financial distress prediction, leverage. This researcher's writing is a bit dark and small inscriptions that research has not been done much about capital structure, corporate social responsibility, and covid. It is intended that financial distress that occurs due to covid is still very little research done.

5 Conclusions

Based on the results of BIBLIOMETRIC research from 2016 to 2021, there are 5 groups (clusters) related to financial distress symptoms. Recent research is the symptoms of financial distress caused by the covid 19 pandemics; research on financial distress has also been conducted in many countries, including Indonesia, Kenya, and China. Research on distress experienced by the company became a topic that was widely chosen in that period and the impact caused by the symptoms of financial distress. Profit margin ratio, current ratio, leverage are factors that are always measured in predicting the symptoms of financial distress [19].
6 Implications/Limitations and Suggestions for Future Research

Furthermore, it is expected that more research on the symptoms of financial distress or prediction of bankruptcy, especially those associated with the current global condition of the covid19 pandemic that hit almost all countries in the world.

References


Future Conditions of the Mining Sector Seen from The Viewpoint of Stock Price

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Abstract. The daily share price of the mining sector is part of the financial data that is included in the determining criteria that describe the condition of the company. More broadly, the daily share price of the mining sector, especially in Indonesia, impacts the national economy. In these conditions, low-risk decision-making is needed. Methods in economics explaining forecasting of future economic conditions can reduce risk by preparing a treatment plan. Time series financial data, including daily stock prices, can be predicted using the ARIMA model. This study aims to design a time series financial data forecasting model with a low error rate so that the quality of the prepared decisions is of high quality.

Keywords: ARIMA, Timeseries, Financial Data, Mining Sector

1. Introduction
The mining sector is crucial in every country, including Indonesia, which has abundant mining resources. The mining sector, as well as its derivative industries, significantly affect the level of life. Furthermore, the mining sector is also one of the industries that support economic growth. Forecasting the financial condition of the mining sector is an important thing to do in order to determine the direction of goals, strategies, and policies in the future. Forecasting financial data is one way to predict the future by considering information and data from the previous period [1]; [2]. Projections or forecasts of financial data can be in the form of daily prices, earnings in each period, and stock prices carried out as an effort to check conditions based on the information obtained [3]; Information obtained earlier by decision-makers can facilitate efforts to minimize risks that may occur in the future.

Forecasting related to daily prices has a high level of data volatility. Daily price volatility indirectly describes the level of risk that occurs in the market. Low daily price volatility will cause downward movement in the market, and it signals a low level of profit from buying and selling transactions (capital gain). In economics science and practice, forecasting with a low error rate is used to plan economic conditions in a wide (macro) and small (micro) environment. The model with the type of data with a high level of volatility often used as a reference for forecasting is through the ARIMA model [4], [5]. Forecasting can show daily stock price figures for the mining sector for three months or 90 days.

2. Literature Review
2.1 Forecasting
The essence of forecasting is quantifying the mapping from the past and present to the future [6]. In his research said that forecasting results can offer a broad horizon and economic events. In the studies that have been carried out, forecasting can be divided into three classifications based on the period, namely short-term forecasting, medium-term forecasting, and long-term forecasting [8]. Concrete short-term forecasts assist management in making decisions that include human resource planning, inventory control, and cash flow management (Fildes dan Goodwin, 2007). Successful organizational planning has used good forecasting techniques because of the concrete forecasting results [10].

2.2 Forecasting Model for Timeseries Data
Daily stock price movements in the capital market can be interpreted as the gap between increasing or decreasing stock prices. The movement or volatility itself in the capital market can easily change. There are times when volatility will go up and down. High volatility means that stock prices go up and down significantly in a second. Volatility (changes in price) in the capital market significantly affects the return on investment. Volatility is known as the basis for determining asset prices and valuable information for investment. There are two types to measure volatility, namely constant volatility, and non-constant volatility. Constant volatility seems to come with standard deviation or historical simulation methods. Non-constant volatility consists of Autoregressive Moving Average (ARMA), Autoregressive Integral Moving Average (ARIMA), Autoregressive Conditional Heteroskedasticity (ARCH), and Generalized Autoregressive Conditional Heteroskedasticity (GARCH).

2.3 Autoregressive Integrated Moving Average (ARIMA)
A time-series based forecasting method relies on the classical Box-Jenkins methodology, which uses general model classes such as the Auto-Regressive Moving Average (ARMA(p,q)) model, or Auto-Regressive Integrated Moving Average (ARIMA (p, d, q)) to get a forecast [11]. Time series based forecasting method relies on the classical Box-Jenkins methodology, which uses general model classes such as the Auto-Regressive Moving Average (ARMA(p,q)) model, or Auto-Regressive Integrated Moving Average (ARIMA (p, d, q)) to get a forecast [10], [12].

3. Methodology and Data Analysis
3.1 Variables and Specifications of the Sample Period
Variables in this study are financial data. In more detail, the financial data is the daily share price of the mining sector. The timing of data collection is from January 1, 2015, to December 31, 2020. The data collected is a record of daily stock price data for the mining sector provided by the Indonesia Stock Exchange (IDX). After the data criteria are determined, then the data processing is carried out. The data processing results will be the basis for determining how the analysis of the results will be carried out.

3.2 Research Process
Process in this research is several important steps that will be taken to achieve the research objective, namely to obtain the best model for forecasting daily stock price data for the mining sector. Here is what describes the overall research process:
<table>
<thead>
<tr>
<th>No.</th>
<th>Activity</th>
<th>Outcomes</th>
<th>Success Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Collection Data</td>
<td>Mining Sector Daily Stock Price Data. &lt;br&gt; Mining sector daily stock price trend chart.</td>
<td>Complete data in the research period. &lt;br&gt; 2. The data is visually seen in terms of reasonable volatility.</td>
</tr>
<tr>
<td>2</td>
<td>Stationary Test</td>
<td>Stationary Graph SAS Process Output:</td>
<td>Stationary data &lt;br&gt; The data can be continued with the differencing process.</td>
</tr>
<tr>
<td>3</td>
<td>Data Differencing</td>
<td>Data After Differencing. SAS Process Output:</td>
<td>Data and Table after Differencing</td>
</tr>
<tr>
<td>4</td>
<td>Checking White noise</td>
<td>Check white table noise SAS Output Process:</td>
<td>Clean data from noise.</td>
</tr>
<tr>
<td>5</td>
<td>ARMA Test</td>
<td>Table of AR and MA Output SAS Process:</td>
<td>ARMA</td>
</tr>
<tr>
<td>6</td>
<td>Forecasting ARIMA</td>
<td>ARIMA forecasting results</td>
<td>ARIMA forecast table for the next 90 days.</td>
</tr>
</tbody>
</table>

4. **Research Result and Discussion**

The picture on the SEKTAM chart is an original description of how the volatility of the energy sector stock data with daily timeframe specifications is in Indonesia. The data is included in the extensive data criteria, 1437 days with a recurring volatility trend. A repeating trend is supported on the U curve at momentum A and B (represented by the blue box).
From Figure 1. above, this study further investigates the stationary level of volatility in the energy sector stock data. Expect the original data to have stable volatility. The subsequent research will look at the visuals of the Autocorrelation Function or ACF and the Partial Autocorrelation Function or PACF. In the image above, ACF and PACF provide a gradual decrease in visuals. Also, the Inverse Autocorrelation Function (IACF) provides a drastic decrease in visuals. This is a sign that the energy sector stock data is included in the non-stationary data category. Several recommendation steps can be taken to achieve stationary data. One of the most widely used is differentiation. The following is data on shares of the energy sector that have undergone the treatment of the differentiating strategy. Figure 2. gives you a visual of the energy sector stock price data differentiation.
With the differentiation strategy, energy sector stock price data processing results show a visual with relatively tight volatility (SEKTAM 1). Furthermore, the description of ACF, PACF, and IACF supports the criteria from data that has been stationary. Confidence in the data that has been stationary in this study also considers the results of the ADF test. The following table 2. shows the ADF test in more detail:

<table>
<thead>
<tr>
<th>Type</th>
<th>Lags</th>
<th>Rho</th>
<th>Pr &lt; Rho</th>
<th>Tau</th>
<th>Pr &lt; Tau</th>
<th>F</th>
<th>Pr &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero Mean</td>
<td>0</td>
<td>-1367.56</td>
<td>0.0001</td>
<td>-35.92</td>
<td>&lt;.0001</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>-1338.58</td>
<td>0.0001</td>
<td>-25.84</td>
<td>&lt;.0001</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>-935.962</td>
<td>0.0001</td>
<td>-18.78</td>
<td>&lt;.0001</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>-861.001</td>
<td>0.0001</td>
<td>-16.40</td>
<td>&lt;.0001</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>-872.859</td>
<td>0.0001</td>
<td>-15.09</td>
<td>&lt;.0001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Mean</td>
<td>0</td>
<td>-1368.12</td>
<td>0.0001</td>
<td>-35.92</td>
<td>&lt;.0001</td>
<td>645.17</td>
<td>0.0010</td>
</tr>
<tr>
<td></td>
<td>-1340.23-25.84</td>
<td>0.0001</td>
<td>1</td>
<td>&lt;.0001</td>
<td>333.97</td>
<td>0.0010</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-937.824-18.79</td>
<td>0.0001</td>
<td>2</td>
<td>&lt;.0001</td>
<td>176.49</td>
<td>0.0010</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-863,477-16.41</td>
<td>0.0001</td>
<td>3</td>
<td>&lt;.0001</td>
<td>134.65</td>
<td>0.0010</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-876,364-15.09</td>
<td>0.0001</td>
<td>4</td>
<td>&lt;.0001</td>
<td>113.92</td>
<td>0.0010</td>
<td></td>
</tr>
<tr>
<td>Trend</td>
<td>-1369.04-35.93</td>
<td>0.0001</td>
<td>0</td>
<td>&lt;.0001</td>
<td>645.47</td>
<td>0.0010</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-1342.65-25.85</td>
<td>0.0001</td>
<td>1</td>
<td>&lt;.0001</td>
<td>334.24</td>
<td>0.0010</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-940,493-18.80</td>
<td>0.0001</td>
<td>2</td>
<td>&lt;.0001</td>
<td>176.69</td>
<td>0.0010</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-866,957-16.42</td>
<td>0.0001</td>
<td>3</td>
<td>&lt;.0001</td>
<td>134.84</td>
<td>0.0010</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>-881.846</td>
<td>0.0001</td>
<td>-15.11</td>
<td>&lt;.0001</td>
<td>114.16</td>
<td>0.0010</td>
</tr>
</tbody>
</table>

The results are amazing and in line with expectations. The value of the ADF test with a lag scheme of 1 to 4 shows a positive thing with a p-value <0.0001, which is a valid signal from stationary. So the following process of researching stock prices in the energy sector is to consider the forecasting results from the ARIMA model.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>t Value</th>
<th>Approx Pr &gt;</th>
<th>lag</th>
</tr>
</thead>
<tbody>
<tr>
<td>MU</td>
<td>0.36312</td>
<td>0.67348</td>
<td>0.54</td>
<td>0.5899</td>
<td>0</td>
</tr>
<tr>
<td>MA1.1</td>
<td>0.78257</td>
<td>0.10237</td>
<td>7.64</td>
<td>&lt;.0001</td>
<td>1</td>
</tr>
<tr>
<td>AR1.1</td>
<td>0.83860</td>
<td>0.08970</td>
<td>9.35</td>
<td>&lt;.0001</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 4. ARIMA Statistical Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant Estimate</td>
</tr>
<tr>
<td>0.058609</td>
</tr>
<tr>
<td>Variance Estimate</td>
</tr>
<tr>
<td>363.8594</td>
</tr>
</tbody>
</table>
Based on tables 3 and 4 above, the ARIMA forecasting model can be formed. The model has shown significant AR(p), MA(q) with a p-value <0.0001 followed by AIC value of 12694.44 and SBC value of 12710.28. Thus, the equation for the ARIMA model of share prices in the energy sector can be arranged as follows:

$$SEKTAM_t = 0.058609 + 0.78257_{t-1} + 0.83860_{t-1} + e_t$$

The ARMA model equation provided an opportunity in terms of predictive figures for the mining sector's stock price, of course, with Confidence Limits and predicted errors. More complete numbers of energy sector stock price predictions can be displayed. As soon as the process has been completed, because the basic model of ARIMA has been formed.

### 5. Implication and Suggestion for Future Research

The quantitative approach is used as part of the advantages of this research, namely, based on substantial numbers and based on calculation results with clear assumptions. The initial form of this approach is to determine the size criteria. The criteria are determined to determine which forecasting model is close to actual or can be said to be accurate. In simple terms, we can use an error indicator that is reflected in the values of MSE, MAE, and MAPE. The closer the error is to zero, the better the forecasting model is. The following table 5. is a comparison of the two sizes:

<table>
<thead>
<tr>
<th>Number</th>
<th>ARIMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSE</td>
<td>110149</td>
</tr>
<tr>
<td>MAE</td>
<td>268.893287</td>
</tr>
<tr>
<td>MAPE</td>
<td>20.9596766</td>
</tr>
</tbody>
</table>

From table 5. it can be seen that quantitatively the ARIMA model gets an average error score component that is relatively small on average. Furthermore, with these results in the decision-making technique, there is a step to test the results of the decision. Figure 3. will display the full ARIMA forecasting results, which can be compared with the actual stock value to get a comparison.
6. Conclusion

The share price of the mining sector is an overview and carries the value of the business entities that are incorporated in it. This research produces a forecasting model, which is important because the mining sector provides benefits, especially in supporting the supply of energy raw materials. Furthermore, entities in the mining sector are companies that are quite crucial because they are used in all business lines that support life. In the end, this research determines that the ARIMA model can accurately predict the financial data of the mining sector. Forecasting the future accurately is ultimately a consideration that management can use in making strategic decisions that are good for the business. The approach in choosing the best model is also important so that the decisions made are supported by definite figures.

References


Analysis of the Impact of the Covid-19 Pandemic on the Financial Performance of Provincial Governments in Indonesia

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Abstract. This study aims to determine the impact of the Covid-19 pandemic on the financial performance of 34 provincial governments in Indonesia. The method used in this research is quantitative research with secondary data analysis. The test equipment used is the paired sample t-test and the Wilcoxon signed-rank test. The data used are in the form of Financial Statements for 2020 and 2019. The test results show a positive difference in financial performance as measured by the degree of decentralization. A negative difference appears in the results of economic performance as measured by the ratio of regional financial dependence, regional financial independence, and growth of regional original income. The test results also show no difference in economic performance before and during the pandemic as measured by the harmony ratio of operating expenditures and the effectiveness ratio of local revenue.

Keywords: Covid-19 pandemic, financial performance, local government

1 Introduction

The spread of Covid-19, which was declared a pandemic on March 9, 2020, significantly impacted the world, including Indonesia. The OECD [1] says the ongoing Covid-19 outbreak puts the government under pressure to provide emergency support to the health sector and the economy. Many countries’ budget adjustment measures have increased in size and scope since Covid-19 came to light. One of the policies taken by the Indonesian government is to optimize state and local budgets for preventing the spread of the virus and handling health impacts. State and regional financial policies begin with Government Regulations in place of Law Number 1 of 2020 [2]. This law regulates Policies in the Regional Finance Sector in Article 3 paragraph (1). This paragraph states that in the context of implementing policies in regional finance, local governments have the authority to prioritize budget allocations for specific activities/refocusing. The local government can also change the distribution and use of regional revenue and expenditure budgets/Anggaran Pendapatan dan Belanja Daerah (APBD). Suwanda [3] argues that the government must appropriately manage policies to handle the pandemic so that program implementation runs without causing problems. Park and Maher’s [4] research shows that fiscal decentralization causes variations in state and local fiscal capacity. Each level of government must have solid fiscal coordination, both in the mitigation process and in the upcoming recovery phase.

Financially independent local governments can suffer higher revenue losses because the transfer value from the central government remains small as before the pandemic [5]. The
Director-General of Fiscal Balance of the Ministry of Finance explains that in October 2020, the total regional income/pendapatan asli daerah (PAD) nationally reached IDR194.36 trillion. In the same period last year, it reached IDR228.24 trillion [6]. The Deputy Chairperson of the Household Affairs Agency of the House of Representatives of the Republic of Indonesia [7] revealed that the local government’s fiscal dependence increased during the pandemic. The regional financial dependence ratio is one of the indicators to assess regional financial performance. Regional financial performance is an economic analysis that comes from the budget that has been determined and implemented in the management of local government [8]. This background encourages research on the Analysis of the Impact of the Covid-19 Pandemic on the Financial Performance of Provincial Governments in Indonesia. This study aims to determine whether there are differences in regional financial performance before and during the pandemic. The update in this study is in the form of testing financial performance variables on local governments in Indonesia during the pandemic.

2 Literature Review

Regional Financial Performance

Sucipto in Junarwati [9] states that local government financial performance is the level of achievement of work in regional finance. This performance indicates provincial revenues and expenditures using economic indicators and formed from the Regional Head Accountability Report elements in APBD calculations [10]. Due to the importance of performance, the next step is performance measurement, which assesses the success or failure of an organization [11]. Mahmudi [12] proposes several measures of local government financial performance, among others:

Degree of decentralization This ratio shows local revenue/PAD contribution to total regional revenue. The higher the percentage of PAD, the higher the provincial government's ability to implement decentralization. The formula measures this ratio:

\[
DD = \frac{PAD}{\text{Total Income}} \quad (1)
\]

Regional financial dependence ratio This ratio measures by comparing the transfer income received by the provincial government with total regional revenues. The higher this ratio, the greater the level of dependence of local governments on gains from the central government. The formula measures this ratio:

\[
\text{RFDR} = \frac{\text{Transfer Income}}{\text{Total Income}} \quad (2)
\]

Operational expenditure harmony ratio This ratio informs the portion of regional expenditure used for operating costs. In general, the proportion of operating expenses dominates total provincial spending, which is 0.6 to 0.9. The formula measures this ratio:

\[
\text{OEHR} = \frac{\text{Operating Expenditure}}{\text{Total Expense}} \quad (3)
\]

Regional financial independence ratio This ratio compares the amount of PAD divided by the total transfer income from the central government and provincial loans. The higher this ratio, the more independent the local government.
The formula measures this ratio:

\[ RFIR = \frac{PAD}{Transfer\ Income + Loan} \] (4)

**PAD effectiveness ratio** This ratio shows the ability of local governments to mobilize PAD by following the target. The PAD effectiveness ratio compares the PAD realization with the PAD target. The formula measures this ratio:

\[ EPAD = \frac{Realization\ of\ PAD}{Budget\ of\ PAD} \] (5)

**PAD growth ratio** This ratio measures how much the local government can maintain and increase the success from one period to the next. The formula measures this ratio:

\[ GPAD = \frac{Realization\ of\ PAD_n - Realization\ of\ PAD_{n-1}}{Realization\ of\ PAD_{n-1}} \] (6)

**Hypothesis**

Research by Batool and Sahi [13] related to performance during the global financial crisis shows changes in economic performance in the United States and the United Kingdom from 2007 to 2016. Research by Huynh et al. [14] shows that the financial performance of the industrial sector that received financial assistance from the government was relatively stable during the pandemic. In contrast, the industrial sector that did not receive government assistance experienced a decline in economic performance during the Covid-19 pandemic. Research by Onibala et al. [15] at the Southeast Minahasa Regency Government showed changes in regional financial performance in increasing degrees of decentralization, PAD effectiveness ratios, operating expenditure harmony ratios, and decreasing regional financial independence ratios during the Covid-19 pandemic compared to 2019. Anas’ [16] research shows no significant difference in economic performance in the Provincial Government of the Special Capital Region of Jakarta, East Java, and North Sumatra during the pandemic. Previous studies related to financial performance when certain events occur encourage research to test hypotheses:

- **H1**: there is a difference in the degree of decentralization before and during the pandemic.
- **H2**: there is a difference in the ratio of regional financial dependence before and during the pandemic.
- **H3**: there is a difference in the harmony ratio of operating expenses before and during the pandemic.
- **H4**: there is a difference in the ratio of regional financial independence before and during the pandemic.
- **H5**: there is a difference in the effectiveness ratio of PAD before and during the pandemic.
- **H6**: there is a difference in the ratio of PAD growth before and during the pandemic.

**3 Methodology and Data Analysis**

The type of research used in this research is quantitative descriptive. The sampling technique was purposive sampling with a total of 34 provinces. The kind of data used is secondary data in the form of Regional Government Financial Reports contained in the Audit Results Report issued by The Audit Board of the Republic of Indonesia, with 2020 as the period during the pandemic and 2019 as the period before the pandemic. The data were analyzed using the SPSS application with paired sample t-test and Wilcoxon signed-rank test. Paired sample t-
test used for variables which normality test showed usually distributed data, namely decentralization degree, regional financial dependence ratio, and harmony of operating expenditures. Wilcoxon signed-rank test used for variables which normality test showed the data not normally distributed, namely the degree of regional financial independence, the effectiveness of PAD, and growth of PAD.

4 Research Result and Discussion

Test Results of Decentralization Degree

Table 1. Test results of DD variable

<table>
<thead>
<tr>
<th>Pair</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Paired Differences</th>
</tr>
</thead>
<tbody>
<tr>
<td>DD 2019 – DD 2020</td>
<td>4.604</td>
<td>33</td>
<td>0.000</td>
<td>0.01882</td>
</tr>
</tbody>
</table>

Table 1 shows the probability value/sig. 2-tailed ie 0.000 < 0.05. In addition, the table shows that the t count is 4.604 > t table is 2.035. The probability value is below the significance level and t counts above the t table, then H1 is accepted. There are differences in financial performance as measured by the degree of decentralization before and during the pandemic. The test results show an average decrease of 0.01882 in the degree of decentralization from 2019 to 2020. This decrease indicates the reduced ability of local governments to generate PAD during the pandemic. PAD, which includes taxes and levies, decreased in line with the reduced purchasing power of the people. Sharifi and Khavarian-Garmsir [17] revealed that the Covid-19 pandemic had lowered the tax base in many regions.

Test Results of Regional Financial Dependency Ratio

Table 2. Test results of RFDR variable

<table>
<thead>
<tr>
<th>Pair</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Paired Differences</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFDR 2019 – RFDR 2020</td>
<td>-3.973</td>
<td>33</td>
<td>0.000</td>
<td>-0.01618</td>
</tr>
</tbody>
</table>

Table 2 shows the probability value/sig. 2-tailed ie 0.000 < 0.05. In addition, the table shows that the t count is 3.973 > t table is 2.035. If the probability value is below the significance level and t count above the t table, H2 is accepted. There are differences in financial performance as measured by the regional financial dependence ratio before and during the pandemic. The test results state an average increase of 0.01618 in the regional financial dependence ratio from 2019 to 2020. This increase shows that the transfer income component from the central government increased during the pandemic. This increase in transfers is carried out to support the handling of Covid-19 in areas of the provincial government.

Test Results of Operational Expenditure Harmony Ratio

Table 3. Test results of OEHR variable

<table>
<thead>
<tr>
<th>Pair</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Paired Differences</th>
</tr>
</thead>
<tbody>
<tr>
<td>OEHR 2019 – OEHR 2020</td>
<td>1.240</td>
<td>33</td>
<td>0.224</td>
<td>0.01059</td>
</tr>
</tbody>
</table>

Table 3 shows the probability value/sig. 2-tailed ie 0.224 > 0.05. In addition, the table shows that the t count is 1.240 < t table is 2.035. Suppose the probability value is above the significance level and t is below the t table. In that case, H3 is rejected, which means no difference in financial performance as measured by the harmony ratio of operating expenses before and during the pandemic. The test results state an average decrease of 0.01059 in the harmony ratio of operating expenditures.
expenditures from 2019 to 2020. This decrease indicates a reduction in operating expenditures for the provincial government during the pandemic. Operational expenditure, including personnel and goods expenditures, will not focus in 2020 because regional expenditure shift to handling Covid-19 issued through unexpected spending.

**Test Results of Regional Financial Independence Ratio**

Table 4. Test results of RFIR variable

<table>
<thead>
<tr>
<th>Negative Ranks</th>
<th>Positive Ranks</th>
<th>Ties</th>
<th>Z</th>
<th>Asymp. Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>8</td>
<td>1</td>
<td>-3.894</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Table 4 shows the probability/asymp values. Sig. 2-tailed is 0.000 < 0.05, then H4 is accepted, which means there is a difference in financial performance as measured by the ratio of regional financial independence before and during the pandemic. Test results show the Negative Ranks (RFIR in 2020 < in 2019) are 25 samples, Positive Ranks (RFIR in 2020 > in 2019) are eight samples, and Ties (RFIR in 2020 = in 2019) are 1 sample. Opposing Ranks in most examples (25 from 34) show a decrease in the ratio of regional financial independence from 2019 to 2020. These results illustrate that PAD received by provincial treasuries in 2020 decreased compared to 2019 due to the decline in the community's economic capacity due to the pandemic.

**Test Results of PAD Effectiveness Ratio**

Table 5. Test results of EPAD variable

<table>
<thead>
<tr>
<th>Negative Ranks</th>
<th>Positive Ranks</th>
<th>Ties</th>
<th>Z</th>
<th>Asymp. Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>16</td>
<td>2</td>
<td>-0.608</td>
<td>0.543</td>
</tr>
</tbody>
</table>

Table 5 shows the probability/asymp values. Sig. 2-tailed is 0.543 > 0.05, then H5 is rejected, which means there is no difference in financial performance as measured by the PAD effectiveness ratio before and during the pandemic. The test results show the Negative Ranks (EPAD in 2020 < in 2019) are 16 samples, the Positive Ranks (EPAD in 2020 > in 2019) are 16 samples, and Ties (EPAD in 2020 = in 2019) are two samples. The exact 16 number of models in Negative and Positive Ranks shows that the provincial government's average ability to achieve PAD realization compared to its target in 2020 is the same as in 2019. The stability of EPAD during the pandemic supports by changes in the 2020 APBD, which budgeted PAD lower than 2019. For example, the Provincial Government of the Special Capital Region of Jakarta has budgeted PAD for 2020 of IDR38 trillion. This value has decreased compared to the 2019 budget of IDR50 trillion. The Gorontalo Provincial Government has budgeted PAD for 2020 of IDR337 billion. This value has decreased compared to the 2019 budget of IDR422 billion [18].

**Test Results of PAD Growth Ratio**

Table 6. Test results of GPAD variable

<table>
<thead>
<tr>
<th>Negative Ranks</th>
<th>Positive Ranks</th>
<th>Ties</th>
<th>Z</th>
<th>Asymp. Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>33</td>
<td>1</td>
<td>0</td>
<td>-4.934</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Table 6 shows the probability/asymp values. Sig. 2-tailed is 0.000 < 0.05, then H6 is accepted, which means there is a difference in financial performance as measured by the PAD growth ratio before and during the pandemic. The test results show that the Negative Ranks (GPAD in 2020 < in 2019) are 33, and the Positive Ranks (GPAD in 2020 > in 2019) are one sample. Most of the samples (33 from 34) show a decrease in the PAD growth ratio from 2019 to 2020. These
results illustrate that PAD growth declined during the pandemic due to reduced regional tax and levy revenues. The decline in revenue is one of the impacts of various policies taken by the government during the pandemic. For example, reducing population mobility and business or business trips affects hotel occupancy rates, decreasing hotel taxes. This finding is in line with research by Lai and Wong [19], which states that the pandemic has plunged the tourism sector, especially hospitality, into an unprecedented recession.

5 Implication and Suggestion for Future Research

This research implies that the financial performance of local governments has changed with the Covid-19 pandemic. This change is evidenced by differences in economic performance as measured by the degree of decentralization, the ratio of regional financial dependence, regional financial independence, and PAD growth. The degree of decentralization shows a positive change, according to the positive value of the t count. Positive change can also be clear from the average value before the pandemic that is higher than during the pandemic. The regional financial dependence ratio shows a negative change, according to the negative value on the t count. Negative change can also be clear from the average value before the pandemic lower than during the pandemic. The ratio of regional financial independence and PAD growth shows a negative change. This change is visible from the negative Z count and the dominance of the Negative Ranks on each variable which shows that the variable’s value during the pandemic is smaller than before. These results strengthen the results of previous studies that regional financial performance can change with the presence of a specific event. The results of this study can be a suggestion for the government in setting policies to improve financial performance. This result aligns with the national economic recovery policy strategy drawn up by the Coordinating Minister for the Economy. The strategy includes a fiscal stimulus to provide a multiplier impact on job creation, directing the purchase of locally produced goods and programs to increase people’s consumption power [20]. Suggestions for further research are to increase the research period until the post-pandemic and add samples to each province’s city/district government with the highest number of positive cases of Covid-19 during the pandemic.

Acknowledgement

The author would like to thank The Audit Board of the Republic of Indonesia, which has provided data in audited financial reports from every province of Indonesia. Also, thank The Indonesia Endowment Fund for Education, which has provided a master’s degree of scholarship for the author.

Reference


[18] “e-ppid.bpk.go.id.”


Bibliometric Analysis of Public Sector Budgets

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Abstract. The purpose of this study is to map articles related to public sector budgets for five years with categories of publication journals, variables or words, years of publication, topics covered research using bibliometric methods with VosViewer analysis tool data 100 articles taken from. The results of the analysis showed the development of publications during the period 2015-2021 decreased. The story of scientific publications with the lowest public sector budget topics occurred in 2021, with budget research as an estimation tool to deal with inflation in the future. The highest study appeared in 2016 with issues discussed regarding public sector budgets to improve public services and budgeting, including related subordinates. In 2016 - 2021 the words or variables used in research are public sectors, budget, and analysis, while the terms that are still rarely used in the study are budget allocation and private sector.

Keyword: Budget, Public Sector Budgets, Bibliometric

1 Introduction

The most important economic tool owned by the government is to direct social and economic development, ensure sustainability, and improve the community's quality of life, one of which is the Budget. Budgeting is essential to achieve the organization's goals. According to [1] in his book entitled Budgeting, "Budgeting is a future organizational work plan realized in quantitative, formal, and systematic form. According to [2] "A budget is a detailed plan of the acquisition and use of financial resources and other resources over some time. Budget as a controlling tool to direct activity in measuring the implementation of activities, so that the implementation process. Public sector budgets are created to plan what actions will be taken by the government, how much will be needed, and how much is obtained from government spending. According to [3] "Budget is a process undertaken by public sector organizations to allocate the resources they have to unlimited needs. This understanding reveals the strategic role of the Budget in the management of the wealth of a public sector organization that certainly wants to provide maximum service to the community. Still, often the desire is hampered by limited resources owned.

The reality in the public sector budget field still cannot control revenues and expenditures, so the organization's objectives are not practical. The research results [4] revealed that Budgeting carried out by related parties does not pay attention to income, so expenditures are more significant than revenue and public service purposes have not been effective. This is supported by the opinion [5] that one of the essential issues in the country's financial management is the Budget. Public budgets have always been associated with organizational executive
accountability. Conflicts that occur in budget determination significantly affect the executive capability of the organization to control spending. In practice, the executive will use an annual list of expenses and income and the purpose of their activities. In addition, the results of the study. [6] a budget participator allows the public sector to reduce budget allowances related to individual work. The involvement of subordinates in the budgeting process becomes essential for the implementation of organizational goals. The character of the Budget is uniformity, the overall impact of the organization, the regularity of the submission of the draft budget per year, the accuracy of revenue and expenditure forecasts based on approval, and published [7]. The purpose of this study is to map articles related to public sector budgets for five years with categories of publication journals, variables or words, years of publication, topics covered. Research using bibliometric methods becomes one way to outline publications that have been widely done. This bibliometric study is also used to understand how a field of science structures or how research develops specific topics in research [8]. The publication database used in this study is a database of metadata results on PoP (Publish or Perish).

2 Literature Review

Public sector budgeting determines the amount of allocation of funds per program and activity in monetary units. Budget is the articulation of the formulation of strategies and strategic planning that has been made. The budget stage becomes very important because an ineffective and not performance-oriented budget will be able to derail the planning is already drawn up [7] Definition of public sector budget according to [10] namely "Public sector budget is an activity plan that is represented in the form of a plan for income acquisition and spending in monetary units. Meanwhile, according to [11] the budget is a guideline of actions that the company or organization will implement following a plan of revenue, spending, transfer, and financing measured in units of money arranged according to certain classifications systematically for a period. Public sector budgeting is a process of preparing a financial plan that is income and financing and then allocating funds to each activity according to the functions and goals to be achieved in providing services to the community. According to [12], public sector budgeting is: "A plan for introducing program deal with objectives and goals within a period, including an estimate of resources required, usually compared with past periods and showing future requirements". Research on public sector budgets has been widely researched in Indonesia and abroad. Previous research results [13] reducing the problem of cost overruns.

Research [14] reveals that flexible budgets will help develop administration in government in the Australian federal government. Budgeting is attributed to subordinates producing flexible budgets so that they can make decisions wisely. Research [15] reveals that in public sector decision-making, budget allocation follows on from "objective" bureaucratic planning and takes the form of facts accomplish where politicians find it very difficult to decide differently than those proposed by bureaucracy. Research [16] management of public sector projects in Russia is inefficiently carried out. One reason for this is the absence of a generally accepted procedure for evaluating project performance. From the results of previous research, there is still a gap between theory and practice that occurs in the field. Analysis or bibliometric methods, also called scientometrics, is part of the methodology of research evaluation and from various literature that has been produced and allows the implementation of bibliometric analysis using
its methods. [17] Bibliometrics applies the mathematical and statistical analysis of patterns contained in the publication and use of documents in textbooks, journal articles, student dissertations, or other sources [18]. Public sector budgeting determines the amount of allocation of funds per program and activity in monetary units. Budget is the articulation of the formulation of strategies and strategic planning that has been made. The budget stage becomes very important because of an ineffective and not performance-oriented budget.

3 Methodology and Data Analysis

The data analysed in this study is sourced from scientific publications with the topic of public sector budget. Data is analysed by year, author, and publisher using Microsoft Excel. As for the development map of publications and words or variables related to the public sector, the budget was analysed using Vosviewer software. After the data is analysed using VOSViewer researchers, use text-mining analysis. This analysis aims to describe the appearance of a word or term displayed on a word presence map. In this analysis, the word calculation method used is binary. The binary process means that only the appearance or appearance of a word/term is calculated, no matter how many times it appears in a paper. In this study, the population used is a scientific publication with the public sector budget contained in google scholar. The number of samples used is as many as the top 100 samples. The selection is selected randomly sampling. With the publishing year 2015 - 2021. The articles that were tested in this study used domestic and foreign reports. The data in access use Publish or Perish (PoP) software to search for the bibliography as the initial database. The data source used for search in PoP is google scholar. Researchers used the keyword public sector budget, the period 2015-2021, and publication name journal. Researchers limit the search results of articles related to the public sector budget to as many as the top 100 articles. Data results from PoP (Publish or Perish) can be processed directly using VOSViewer by saving RIS / REF manager.

4 Research Result and Discussion

This section will discuss the results of the development of scientific publications related to the public sector budget that has been analysed using Microsoft excel 2010 and mapping using Vosviewer analysis tool text-mining analysis. Results from actions and mappings can be seen in Table 1 during the period 2015-2021.

<table>
<thead>
<tr>
<th>No</th>
<th>Publication Year</th>
<th>Number Of document</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2015</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>2</td>
<td>2016</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>3</td>
<td>2017</td>
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</tr>
<tr>
<td>4</td>
<td>2018</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>5</td>
<td>2019</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>6</td>
<td>2020</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>
The development of scientific publications with public sector budget topics based on Table 1 shows that the period 2015-2021 decreased. The lowest publications occurred in 2021 at 5%. The highest publications occurred in 2016 (23%). From the search results with the keyword public sector budget, the most scientific publications published on publisher Taylor & Francis as much as 10% More can be seen in Table 2 below.

Table 2. Publisher data in scientific publications with public sector budget topics during the period 2015-2021

<table>
<thead>
<tr>
<th>No</th>
<th>Publisher</th>
<th>Number of Documents</th>
<th>No</th>
<th>Publisher</th>
<th>Number of Documents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Taylor &amp; Francis</td>
<td>10</td>
<td>26</td>
<td>eprints.covenantuniversity.edu.ng</td>
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</tr>
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<td>2</td>
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</tr>
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</table>

<table>
<thead>
<tr>
<th>Amount</th>
<th>100</th>
</tr>
</thead>
</table>
Analysis conducted using binary methods on the vosviewer analysis tool will describe the network, overlay, and density results. The results of network visualization produce 36 words/terms with a limit of at least four times, then after the selection of words included in the research topic obtained 22 comments. You can see it in figure 1 below.

Fig. 1. Network visualization

The picture results above show that the topic of public sector budget can be divided into 3 clusters. Cluster 1 is shown in red, consists of Accountability, Accounting, Budget allocation, Effect, Effectiveness, Implementation, Performance, Public sector, Quality, and Service. Cluster 2 is indicated in green consisting of Analysis, Budget constraint, Budget deficit, Country, Economic Growth, Impact, Private sector, Public debt and Relationship and Cluster 3 is indicated in blue consisting of Budget, Budgeting, and Government. Larger point sizes characterize keywords that often appear. The results of overlay visualization in figure 3 show from 22 words/subjects displayed in figure 1 network visualization. In figure 2 it can be classified by year of publication. Where in 2017 to 2021 of 22 items related to public sector budget topics, there are words budget, budgeting, performance, accounting, effectiveness, government and impact published while the terms related to implementation, service, public sector, analysis, country, budget constraint, economic growth, private sector, accountability, quality, and effect published in 2017 and below until 2016. Articles published in 2016 down to 2015 related to budget allocation, relationship and budget deficit.

Fig. 2. Overlay visualization

The results of density visualization are shown in the 3th image describing the 22 items/words that have been analyzed. There are the most words used in publications indicated by a deep yellow color is a public sector, budget and government and the word that has not
been widely used in publications are characterized by a deep green color such as effectiveness, budget allocation, budget constraint, economic growth, relationship and private sector.

![Fig. 3. Density visualization](image)

Based on the results of data analysis on 100 articles on the topic of public sector budget, using metadata in 2015-2021 with Publish or Perish (PoP) software sourced from google scholar. It can be seen how the development of articles with public sector budget topics during the research period decreased in 2021 by 5% and the highest in 2016 as much as 23% in the category of scientific publication development. Based on the 2016 publication of several related research results on the application of public sector budgets to an organization, namely research [19] budgeting to external accountability and available tools to encourage transparency and stakeholder engagement; budgeting contributions to the development of practices and processes that ensure the proper functioning of inter-organizational arrangements for the provision of public services; interaction between budgeting and budgeting, budget formulation and budget implementation. Research [20] maximization of public sector budgets for application projects used to use them results in better public services. Research [14] reveals that flexible budgets will help develop administration in government in the Australian federal government. Budgeting is attributed to subordinates producing flexible budgets so that they can make decisions wisely. In addition, the study results [6] a Budget participator allow the public sector to reduce budget allowances related to individual work. The involvement of subordinates in the budgeting process becomes essential for the implementation of organizational goals. While the publication in 2021 related analysis of the performance of public sector budgets, the study results [13] use the budget estimation framework for future projects in the face of inflation to reduce the problem of cost overruns. Public sector budget research in 2016 discusses how to use budgets in government management to better public services and how budget-making links to subordinate participation to the purpose of proper realization. While in 2021, the topic of public sector budget discussion implements a budget strategy to deal with inflation.

The results of mapping using binary methods in the VOSViewer analysis tool describes the results of network visualization, overlay visualization and density visualization. These three results show that the first network visualization represents 3 clusters on the public sector budget. The 3 clusters that become variables or words that significantly affect the public sector, budget, and analysis where the publication of articles is done in 2016-2017. This is following a 2016 publication article that uses all three variables. Where budget variables are used as a tool for planning and supervision in implementing organizational or governmental goals. The last analysis using VOSViewer, density visualization described from the 2015-2021 research period.
the most words or variables related to the topic of public sector budget, namely items or words public sector and budget. These two words or items are still associated with the public sector budget published from 2017 to 2021. The word or item that is still rarely found is effectiveness, budget allocation, budget constraint, economic growth, relationship and private sector published in 2015-2016.

5 Implication and Suggestion for Future Research

From the results of an analysis of 100 publications on public sector budget topics that use excel and VOSViwer analysis tools, it is known that, the analysis of the development of scientific publications during the period 2015-2021 is less studied. The results of the 2021 budget concluded the budget as an estimation tool to deal with inflation in the future. The most publication research occurred in 2016 with issues discussed regarding the use of public sector budgets to improve public services and the implementation of budget preparation by including related subordinates. Data on the development of scientific publication publishers with public sector budget topics based on publicized documents. There are 10 of the most publicized documents by Taylor & Francis that publish scientific publications on the topic of public sector budget. The second elsevier with the number of documents as many as 8 and the third emerald.com with the number of 7 documents. Analysis conducted by text mining using binary methods, resulting in network visualization showing 22 words / items related to the topic of public sector budget with the division of 3 clusters. Where in 2016 the words or variables that are often used in research are public sector, budget, and analysis while the words that are still rarely used in research are effectiveness, budget allocation, budget constraint, economic growth, relationship and private sector. Related from the results of the conclusion above, further research can use data sourced from scopus. Metadata sourced from scopus has been accredited, and can be seen sources related to the author of the article and the country of publication. The limitations of this study using the amount of metadata in the analysis are still very lacking to produce significant data. Samples of articles taken using google scholar still do not identify accredited journals or not.

Reference

Factors Affecting Company Profit Growth During the Covid-19 Pandemic (Case Study on Plantation and Food Corps Companies Listed on the Indonesia Stock Exchange for the 2017-2020 Period)

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Department of Management, Faculty of Economics, Malahayati University¹,²

Abstract. The objective of this study is to determine the factor of profit growth of plantation and food corp companies listed in Indonesia Stock Exchange (IDX) for the period 2017-2020 during the Covid-19 pandemic. This sector contributes to the provision of food and economic growth today. The population of all plantation companies and food corps listed on the Indonesia Stock Exchange, with 12sample's companies that meet the sample criteria in this study. The dependent variable is the company's profit growth and the independent variables are Return On Assets, Net Profit Margin, and Debt Equity Ratio. The research method uses descriptive analysis, classical assumption test, and coefficient of determination test using SPSS. The calculation results state that partially NPM has a significant effect on revenue growth, while ROA and DER have no significant effect on company profit growth.

Keywords: Covid-19, Profit Growth, Return On Assets, Net Profit Margin, Debt Equity Ratio

1 Introduction

Business competition in the era of globalization makes companies to continue to strive to maintain and improve financial capabilities. So it is hoped that the increase in financial capacity can help the company with the aim of maintaining and improving the viability of the company. This condition is expected to spur management to continuously improve the company's financial condition. Many companies are continuously trying to improve their financial condition, one of which is by becoming a public company and listed on the Indonesian stock exchange.

Along with current economic developments and conditions, where the world has been affected by the Covid-19 pandemic, the country of Indonesia has also been affected by the virus. This was revealed by the University of Indonesia (UI) Epidemiologist Pandu Riono [1] stated that the SARS-CoV-2 type of corona virus as the cause of Covid-19 had entered Indonesia since early January 2020. The Financial Services Authority (OJK) provided information that many issuers experienced a decline in profits in the first quarter of 2020, namely 475 issuers or equivalent to 57.75% of all listed issuers. [2]

One of the sectors on the Indonesia Stock Exchange that may be affected by Covid-19 is a company engaged in plantations and food crops. This sector is a sector that indirectly helps the government in providing food in Indonesia. As Chairman of Kadin Rosan P. Roeslani in the virtual event of the Jakarta Food Security Summit-5 said that during the Covid-19 pandemic the
food crop sector if managed in an integrated manner could contribute to the provision of food to national economic development and become a source of income for the majority of the Indonesian population. This is also in line with the National Economic Recovery Program launched by the government which aims to strengthen the economy of farmers, the wheels of the economy are expected to turn back and become a driver of economic growth, this was revealed by Abidin [3]

Therefore, the plantation and food crops sector is necessary to maintain the company's profit growth, because the company's current sustainability contributes to the economy of the Indonesian people.

The growth of company profits from time to time is certainly an important note for investors, where these records provide information about the ups and downs of existing company profits. With the increase in profit, it is expected that the company's financial condition will also improve. Therefore, companies need to predict profit growth for the company's sustainability in the future. The purpose of this study is to examine the effect of Return On Assets (ROA), Net Profit Margin (NPM), and Debt Equity Ratio (DER) on Profit Growth of Plantation and Food Corps Companies listed on the Indonesia Stock Exchange (IDX) for the 2017-2020 period both partially or simultaneously. So the researcher assumes that ROA, NPM, and DER have a significant influence, either partially or simultaneously.

2 Literature Review

The company's financial condition may be used to determine the profit condition of company, one of which is by looking at the company's financial information through the profitability ratio which is a ratio to measure the amount of profit earned by the company. According to [4] the profitability ratio is a ratio that can be used to measure the ability of company to seek and increase company profits. One of the ratios in the profitability ratio that can help show the rate of return on the use of company assets is Return On Assets or ROA. [5] revealed that the utilization of all assets/assets which tells the ability of company to generate net profit after tax, can be done by assessing ROA. This is also stated by [6] the advantages of Return on Assets (ROA) are that it is relatively easy to understand and calculate, the ROA ratio is used by entity management in assessing performance. Its own management to generate high profits by utilizing low assets. [7] ROA is a measuring tool that can be used to assess the level of effectiveness of a company in generating net income through available assets (assets). This can be done by assessing ROA.

Net Profit Margin (NPM) is also a profitability ratio to measure profit growth, where this ratio calculates the net after-tax percentage of income earned from sales. According to [8] the ratio used to measure profit compared to sales is NPM. It is possible for NPM to be a big hope for investors in investing their capital in the company. According to [9] an increase in NPM can provide an illustration of an increase in the company's net profit. the higher the NPM, the higher the company's profit growth [10].

In addition to profitability, profit growth can also be seen from the condition of its capital structure. This is because the capital structure is a condition where this ratio can provide information about the company's operational funding originating from the specified equity and long-term debt by the company with its composition and proportion. The condition of the capital structure is expected to provide information about ability of company to manage its capital and debt as an efficiency effort to increase company profits [11]. In [12] DER is expected to be able to provide information and estimates of how much own capital is needed to fulfill its obligations. According to [4] DER means the financial ratio used to evaluate debt of company to equity, which is used to determine the total funds given to the owner of the company by the
borrower (creditor). In other words, how much is the value of each rupiah of the company's capital used as debt security. According [13] capital structure means a combination of debt and equity used to finance company projects. The company's capital structure is a mix of new equity, internally generated equity, and debt. [14] capital structure is the combination of long-term sources of funds used by the company.

### 3 Methodology and Data Analysis

Secondary data is the data’s type in this study.

#### 3.1. Population, Sample and Sampling Technique

All companies in the plantation and food crops sector listed on the Indonesia Stock Exchange, totaling 26 companies, are the population in this study. According to [15] the part of the population that has the same characteristics is called a sample. Technique of sampling used is purposive sampling technique, namely the sample to be used is one that meets certain criteria. As for the existing 26 companies, there are 12 companies that meet the existing criteria. The criteria for taking the sample of this research are:

2. Plantation and food crop companies that have complete financial reports for the 2017-2020 period.
3. Sample companies are companies that have complete data according to the variables in this study.

The following are the names of the companies that are sampled in this study:

<table>
<thead>
<tr>
<th>No.</th>
<th>Company Code</th>
<th>Company Name</th>
<th>No.</th>
<th>Company Code</th>
<th>Company Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>ANDI</td>
<td>Andira AgroTbk.</td>
<td>7.</td>
<td>PALM</td>
<td>Provident AgroTbk.</td>
</tr>
<tr>
<td>2.</td>
<td>BISI</td>
<td>BISI InternasionalTbk.</td>
<td>8.</td>
<td>SGRO</td>
<td>Sampoerna AgroTbk.</td>
</tr>
<tr>
<td>3.</td>
<td>BTEK</td>
<td>Bumi Teknik UnggulTbk.</td>
<td>9.</td>
<td>SIMP</td>
<td>Salim Ivomas Pratama Tbk.</td>
</tr>
<tr>
<td>4.</td>
<td>BWPT</td>
<td>Elang Tinggi Perkebunan Tbk.</td>
<td>10.</td>
<td>SMAR</td>
<td>Smart Tbk.</td>
</tr>
<tr>
<td>5.</td>
<td>DSNV</td>
<td>Dharma Satya Nusantara Tbk.</td>
<td>11.</td>
<td>UNSP</td>
<td>Bakrie Sumatera Plantations Tbk.</td>
</tr>
</tbody>
</table>

The data is secondary data documentation from various sources, namely financial data from the financial statements of food crop plantation companies listed on the Indonesia Stock Exchange for the 2017-2020 period which are accessed from the website. [16]

#### 3.2. Definition of Operational Variables

**Independent Variable (X)**

Return On Assets / ROA ($X_1$), according to [17] ROA can be calculated by comparing net income after tax with total assets, with the following formula:

$$\text{ROA} = \frac{\text{Profit after tax}}{\text{Total assets}}$$  \hspace{1cm} (1)

Net Profit Margin / NPM ($X_2$), according to [18] the NPM ratio shows the results of the calculation of net income compared to sales, the formula is as follows:

$$\text{NPM} = \frac{\text{Profit before tax}}{\text{Sales}}$$
NPM = Net Profit After Tax/Sales .........................................................(2)

Equity Ratio /DER (X_i), calculating the DER value can be done by comparing total debt with total equity [19] as follows:

\[ \text{DER} = \frac{\text{Total Debt}}{\text{Equity}} \] ............................................................................(3)

**Dependent Variable (Y)**

Profit Growth (Y), according to [20] profit growth can be seen from the calculation which states the difference between the net profit of a certain year and the net profit of a certain previous year. The formula for obtaining profit growth is as follows:

\[ \text{Profit Growth} = \frac{(\text{Net Profit in year } t - \text{Net Profit in year } t-1) \times 100\%}{\text{Net profit } t-1} \] ...................... (4)

**3.3. Data Analysis**

Descriptive statistics can describe the overview of research data. Explanation brief about the sample used, not hypothesis testing. [21].

**Classic Assumption Test**

According [21], classical assumption tests include: Normality test is a test used to determine whether the variables are normally distributed or not, carried out using the Kolmogorov Smirnov One Sample test, the data is normally distributed with the condition that the significance value is above 5% or 0.05. The data is not normally distributed if the result is below 0.05. Multicollinearity test to determine the resulting regression model whether there is a relationship between the independent variables and determined by the VIF value criteria used between 1 to 10. Heteroscedasticity test is a test carried out to find out if there is discomfort in the regression model from the residual variance of one observation to another. It is called heteroscedasticity if the variances are different and if it shows an unpatterned distribution on the Y axis. Autocorrelation test states that a good regression model means a regression model that is free from autocorrelation.

**Multiple Linear Regression**

According to [22] Multiple Linear Regression Analysis means that regression calculations are carried out with two or more independent variables, and the dependent variable. The formula for multiple regression is:

\[ Y = a + b_1X_1 + b_2X_2 + b_3X_3 \] ......................................................................................... (5)

Information:

Y = Profit Growth  
\( a \) = Constant  
\( b_1, b_2, b_3 \) = Regression Coefficient \( X_1, X_2, X_3 \)  
\( X_1 \) = ROA  
\( X_2 \) = NPM  
\( X_3 \) = DER

In [21], the simultaneous test (F test) is a joint test to determine the impact of the independent variable on the dependent variable if the value of 0.05 is smaller than the calculated F value, which means Ho is rejected and Ha is accepted, and if the significance value is more smaller than 0.05 and vice versa. While the Partial Test (T Test) the results of the t-test stated information as a temporary answer to the research conducted. This provides information about
the effect of the independent variable partially/individually on the dependent variable. Where the test results are declared influential if the calculated T value is greater than T table, and the significance of each independent variable is less than 0.05, then the test results are said to be Ha accepted and Ho rejected, and the significance is less than 0.05, and vice versa. And the Determination Test (R2) provides information about how much independent influence (X) is on the influencing variable (Y).

### 4 Research Result and Discussion

#### 4.1. Descriptive Statistics Test Results

The results showed that the number of samples in this study amounted to 36, it is known that the ROA (X₁) has a minimum value of -27.9877, a maximum value of 7.3277, average of -1.0079, and a standard deviation of 5.190035. NPM (X₂) has a minimum value of -1.79212, maximum value is 1.91645, average value is 0.00000, and standard deviation of 0.69463. while the DER (X₃) has a minimum value of -5.198, the maximum value is 1.606, average value is 0.000, and a standard deviation of 1000.

The results of the Normality Test, the X₁ value is 0.67, the X₂ value is 0.4, the X₃ value is 0.2 and the Y value is 0.7, so from these results it is said that all variables that have a value above 0.05 are considered distributed normal.

Multicollinearity test results, the value of VIF X₁ = 3.654, X₂ = 3.637, X₃ = 1.281. The results of the calculation of the multicollinearity test of all variables have values between 1.00-10.00, which means that these results indicate that it may be said that there is no multicollinearity.

Autocorrelation Test, the results of the run test autocorrelation test stated that the sig value of 0.237 was greater than 0.05 meaning that there were no symptoms of autocorrelation, which means these results indicate that this study has a good regression model (free from autocorrelation).

Heteroscedasticity test results using a scatterplot which states that the distribution is not patterned, the test’s results that there is no heteroscedasticity.

The results of the Multiple Linear Regression Test obtained the calculation results as shown in Table 2:

<table>
<thead>
<tr>
<th>Coefficients</th>
<th>Model</th>
<th>Standardized Coefficients</th>
<th>Standard Coefficient</th>
<th>T</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 A (Constant)</td>
<td>-.022</td>
<td>-124</td>
<td>-.124</td>
<td>-174</td>
<td>.863</td>
</tr>
<tr>
<td>ROA (X₁)</td>
<td>-.035</td>
<td>.053</td>
<td>-.029</td>
<td>-657</td>
<td>.516</td>
</tr>
<tr>
<td>NPM (X₂)</td>
<td>1.221</td>
<td>.054</td>
<td>1.013</td>
<td>22.654</td>
<td>.000</td>
</tr>
<tr>
<td>DER (X₃)</td>
<td>.128</td>
<td>.297</td>
<td>.011</td>
<td>.431</td>
<td>.669</td>
</tr>
</tbody>
</table>

Based on the results of existing calculations then:

\[
Y = -0.022 -0.035X1 + 1.221X2 + 0.128X3
\]

These results show that:

1. The constant value is -0.022, which means that there is one unit change in the Y variable (profit growth) which will decrease by 0.022 with the assumption that other variables (ROA, NPM, DER) are considered constant.
2. The ROA (X₁) value of -0.35 states that if the ROA (X₁) variable is increased by one unit, the Y variable (Profit Growth) will decrease by 0.35 assuming other variables are held constant.

3. The NPM (X₂) value of 1.221 states that if the NPM (X₂) variable is increased by one unit, the Y variable (Profit Growth) will increase by 122.1% assuming other variables are held constant.

4. The DER (X₃) value of 0.128 states that if the DER (X₃) variable is increased by one unit, the Y variable (profit growth) will decrease by 12.8% assuming other variables are constant.

The results of the Partial Test (T test) in table 1 obtained the following results:

1. Profitability value (ROA/X₁) is 0.516 and capital structure value (DER/X₃) is 0.669, which means X₁ and X₃ are greater than 0.05 which states ROA (X₁) and DER (X₂) partially have no effect on growth profit. Profitability value (ROA/X₁) is significant 0.516 > 0.05 meaning ROA has no effect on profit growth.

2. Profitability value (NPM/X₂) significance 0.000 <0.05, meaning that NPM has an effect on profit growth.

The results of the Simultaneous Test (Test F) in table 3 show that the simultaneous test is 0.000 <0.05, meaning that there is an effect of Variable X (ROA, NPM, DER) on profit growth (Y).

Table 3. Simultaneous Test Results

<table>
<thead>
<tr>
<th>ANOVA</th>
<th>Model</th>
<th>Number of Squares</th>
<th>df</th>
<th>Square Average</th>
<th>F</th>
<th>Sign</th>
</tr>
</thead>
<tbody>
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<td>3</td>
<td>314,297</td>
<td>595.545</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Remainder</td>
<td>16,888</td>
<td>32</td>
<td>.528</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>959,780</td>
<td>35</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A. Dependent Variable: PROFIT GROWTH
B. Predictors: (Constant), DER, NPM, ROA

Data processed, 2021

The result of the Determination Test (R²) is 0.982, which means that the variable X in the form of ROA, NPM, and DER has an effect on the y variable on profit growth of 98%. the difference may be other variables not included in this study.

4.2 Discussion

The effect of Return on Assets (ROA) on Profit Growth in the calculation results states that there is no significant effect of ROA on Profit Growth. This provides information that for Plantation and Food Crop companies during the Covid-19 pandemic, the number of assets owned by the company does not affect the profits of company. In line with the research of [23] that ROA has no effect on the company's profit growth, it is not in line with [5] which states that company assets can be used by companies to generate net income after tax, as well as the opinion of [7] that ROA is used to assess the level of company’s effectiveness in generating net income through available assets, also not in line with [4] that ROA can help show the rate of
return on the use of company assets (profit). The study’s results indicate that the amount of assets cannot be utilized optimally so that the sales made do not have an effect on the profit growth of company during this Covid-19 pandemic.

The effect of Net Profit Margin (NPM) on Profit Growth in the calculation results show that there is a significant influence on the company's profit growth. This high value provides information on the ability of company to generate profits at a certain sales stage. [17] that NPM is a ratio that is expected to increase by investors. In line with [9] increased profit growth can indicate an increase in company sales. This result is different from the research result of [10]. NPM has no significant effect on Profit Change.

The effect of DER on Profit Growth DER on the calculation analysis’s results shows that DER (X₃) has no effect on profit growth company during the Covid-19 pandemic. A higher DER allows lower profit growth, where the capital structure listed in the DER indicates that equity ownership is smaller than debt. [13] capital structure means a combination of debt and equity used to finance the company's projects, while debt will make the company tied to debtors to pay off its debts. If debt is greater than own capital, profits will decrease. In line with [10] which states that DER has no significant effect on profit growth. However, it is not in line with [24] where DER has an effect on profit growth. Then [11], that the condition of the capital structure is expected to provide information about the company's ability to manage capital and debt as an efficiency effort to increase company profits. The study’s results indicate that the amount of DER (capital structure) does not have a significant effect on the company's profit growth, the capital structure owned is less efficient in its utilization during the Covid-19 pandemic.

This study used a sample of 12 companies, this number can cause a lack of generalization to the population. The small number of samples is due to the small number of companies that provide accessible financial statement information.

5 Implication and Suggestion for Future Research

5.1. Conclusion

The Covid-19 pandemic has had an effect on decreasing the profit growth of plantation and food crop companies in Indonesia. As well as having an impact on the management of company assets so that the amount of ROA does not affect profit growth. Net Profit Margin in this study has a fairly large effect on profit growth. The capital structure consisting of equity and debt has no effect on profit growth of company during the Covid-19 pandemic.

5.2. Implication

The study’s results may be used as a reference for investors, decision makers in an effort to increase company profits during the covid-19 pandemic. A high NPM attracts investors to channel their funds to the company. However, a sufficiently large ROA does not necessarily help profit growth, it is hoped that ROA can be used more efficiently in improving company operations so as to contribute to profit growth. Furthermore, DER has no effect on profit growth, this is to get attention so that debt remains at a small value, which allows the company to increase its own capital during the Covid-19 pandemic. These results can also be used as input for company management to be able to continue to maintain and improve NPM, manage ROA more efficiently and control DER so that it does not increase.
5.3. Suggestion

Future researchers can use more complete data, more number of companies, more independent variables, wider field of business, longer period of time, and more complex research objects. can contribute to decision makers.

5.4. Acknowledgements

This research was carried out thanks to the assistance of various parties, therefore the researchers would like to thank the Dean of the Faculty of Economics, Malahayati University who always provides motivation and support, as well as all parties who help carry out this research activity.

References

Empirical Analysis of The Probability Bankruptcy, Audit Effort, And Its Impact on Audit Delay: Evidence from State-Owned Enterprise in Indonesia

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Abstract. Audit Delay is the period of auditing financial statements by the auditor from the closing year until the independent auditor's report is signed. If it takes a long time can cause delays in reporting the financial statement by the company. This study aims to obtain empirical evidence about several factors that can cause audit delay. The variables used in this study are the probability of State-Owned Enterprise bankruptcy and audit effort as independent variable and audit delay as dependant variable. The population used in this study are state-owned companies listed on the Indonesia Stock Exchange (IDX) for the period 2016-2020. Samples of 17 states-owned companies were taken using purposive sampling method. Data analysis used logistic regression analysis with SPSS 22 tool. The result of this study is expected to be the additional literature that can be used for companies to prevent long audit that causing delays in financial reporting.

Keywords: Bankruptcy Probability, State-Owned Enterprise, Audit Effort, Audit Delay.

1 Introduction

Good financial reports according to Kieso is a relevant financial report, which is said to be relevant if it has predictive value and timeliness so that it does not reduce the quality of information for decision making [1]. In ensuring the timeliness of reporting financial statements, a regulation is made in Bapepam and LK Regulation Number X.K.6 in the decision of the Chairman of the Capital Market and Financial Institution Supervisory Agency Number KEP-431/BL/2012, stating that the annual financial report is submitted no later than the end of the fourth month (120 days) after the date of the annual financial statements and must be accompanied by a public accountant's report indicating that the financial statements have been audited.

The audit process requires a long period of time. If it gets longer, the company is threatened not to be able to comply with the regulations from the regulator. There is a phenomenon of delay in the collection of financial statements that occurred in several companies, such as in the IDX announcement no. Peng-LK-00005/BEL.PP1/07-2020, as of June 30, 2020, there are 42 companies that have not submitted audited financial statements ending as of December 31, 2019. Companies need to consider audit delays so that there are no delays caused by several factors. The first factor that affects audit delay is the probability of bankruptcy. Companies that have a high probability of bankruptcy will increase audit delay because auditors will need additional data needed to produce opinions that are in accordance with the company's circumstances and require a longer audit time [2].
The second factor that affects audit delay is audit effort. In carrying out the audit process there will be an effort made by the auditors to complete in order to obtain an audit opinion. The more assets that must be audited, the effort or time that will be sought to conduct an audit must be higher and ultimately increase the audit delay. Wijayanti and Effriyanti who conducted research on service and real estate companies in 2009-2017 found that audit effort had an effect on audit delay [3].

2 Literature Review

2.1.1 BASIC THEORY
There is a general theory or grand theory that is needed in a study as a basis and a starting point for other theories. In this study, the general theory used is Agency Theory and Signal Theory. Agency theory according to Jensen and Meckling is an agency relationship between the principal or the owner of the company and the management as an agent in which the principal asks the agent to perform services in his interest by delegating authority to the agent [4]. The signal theory proposed by Spence says that the sender will provide information that can be utilized by the recipient to then adjust his behavior according to the understanding of the signal given [5].

2.1.2 AUDIT DELAY
The definition of audit delay has been put forward by several previous researchers. Audit report lag or audit delay is the interval from the end of the year to the date of signing in the auditor's report [6]. According to Ashton, audit delay is the time span between the reporting date and the date of the auditor's opinion [7]. Halim defines audit delay as the length of time for the completion of the audit, measured from the closing date of the financial year to the date of issuance of the audit report [8]. Based on the understanding according to some researchers, audit delay or audit report lag is the period of time for the auditor to complete the audit process on the annual financial statements which can be measured from the time difference between the closing date of the financial reporting year (December 31) and the date of signing in the report of independent auditors.

2.1.3 PROBABILITY OF BANKRUPTCY
Nurahmayani stated that high level of bankruptcy probability will increase audit delay because auditors will need additional data in order to produce opinions according to the companies’s circumstances and requiring a longer audit time. Otherwise, a low level of bankruptcy probability will minimize audit delay because the company will try to improve the timeliness of the financial statement submission as a good signal for interested parties [2].

There are several models that can be used to predict bankruptcy, but this research used The Altman model that known as the Altman z-score, which is a bankruptcy prediction model using the Multiple Discriminant Analysis method on five types of financial ratios, namely working capital to total assets, retained earnings to total assets, earnings before interest and taxes to total assets, market value of equity to book value of total debts, and sales to total assets [9]. There have been several revisions made to this model, until the last model developed by Altman is:

\[ Z = 6,56X_1 + 3,26X_2 + 6,73X_3 + 1,05X_4 \]
$X_1$ is working capital (difference between current assets and current liabilities) divided by total assets (total current assets and fixed assets), $X_2$ is retained earnings (total profit that has been determined and has not been determined) divided by total assets, $X_3$ is profit before interest and taxes divided by total assets, $X_4$ is the book value of equity (the number of outstanding shares multiplied by the year-end stock price) divided by the book value of debt (amount of short-term and long-term debt), the resulting z-score will be divided into three categories, namely the Safe Zone ($Z > 2.60$), Gray Zone ($1.1 < Z < 2.60$), and Danger Zone ($Z < 1.1$) [10].

2.1.4 AUDIT EFFORT
Audit effort is the effort required by the audit team to complete the overall audit process, including audit planning, fieldwork, and review [11]. Caramanis and Lennox say that audit time is a reasonable projection for audit effort, where audit time is closely related to the size of the client company [12]. Vuko and Ular in their research measured audit effort by comparing the scope of the audited company's assets, inventories and receivables, with the overall assets owned by the company [13]. The more units of inventory and receivables that must be audited, the effort or time that will be sought to conduct an audit must be higher and ultimately increase the audit delay.

3 Methodology and Data Analysis

3.1 RESEARCH METHOD
The data collection method used is the documentation method obtained from previous research and support from other literature. Data on variables are obtained from financial and annual reports published by companies on the IDX on its official website www.idx.co.id. The type of research used is quantitative with secondary data obtained from existing media and sources. In accordance with the proposed hypothesis, this study uses the statistical method of logistic regression analysis.

3.2 VARIABLE OPERATION
3.2.1 AUDIT DELAY
According to several studies, audit delay or audit report lag is the period of time for the auditor to complete the audit process on the annual financial statements which can be measured by the time difference between the closing date of the financial reporting year (December 31) and the date of signing the auditor's report. In this study, audit delay is measured by a dummy variable as in [14] where 0 is for companies that experience audit delays of no later than 120 days and 1 for companies that experience audit delays of more than 120 days.

3.2.2 PROBABILITY OF BANKRUPTCY
Based on the several studies, bankruptcy can be defined as a company's failure to carry out its operations that occurs when all debts exceed the fair value of their total assets (actual insolvency) or when the company is unable to meet obligations at maturity (technical insolvency) due to the current state of the dynamic business world. The indicator used is the third Altman formula which according to Rudianto [10] is the most flexible formula to be used in various types of company business fields, both go-public and not, and suitable for use in developing countries such as Indonesia. It can be mathematically written as follows:
Z = 6,56X_1 + 3,26X_2 + 6,72X_3 + 1,05X_4

Information:
X_1 = Working Capital/Total Assets
X_2 = Retained Earnings/Total Assets
X_3 = EBIT/Total Assets
X_4 = Book Value of Equity/Book Value of Debt

In the Altman model, the results of the z-score will be divided into three categories, namely the Safe Zone (Z > 2.60), the Gray Zone (1.1 < Z < 2.60), and the Danger Zone (Z < 1.1). Similar to the research of Widyawati and Anggraita (2013), this variable will be measured as a dummy variable with a value of 1 if the company is included in the dangerous and gray zone (vulnerable) and 0 for companies that are included in the safe zone.

3.2.3 Audit Effort
Audit effort is the effort required by the audit team to complete the overall audit process, including audit planning, fieldwork, and review [11]. Caramanis and Lennox say that audit time is a reasonable projection for audit effort, where audit time is closely related to the size of the client company [12]. Vuko and Ćular in their research measure audit effort by comparing the scope of the audited company's assets, inventories and receivables, with the overall assets owned by the company [13]. This study measures audit effort using the formula used by Vuko and Ćular which compares audited current assets (inventory and receivables) with the company's overall assets, mathematically it can be written as:

\[ \text{Audit Effort} = \frac{\text{Inventories + Receivables}}{\text{Total Assets}} \]

<table>
<thead>
<tr>
<th>Table 3.1. Variable Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>X_1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>X_2</td>
</tr>
<tr>
<td>Y</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
3.2.4 RESEARCH POPULATION AND RESEARCH SAMPLE

The population used in this study were all state-owned companies listed on the Indonesia Stock Exchange (IDX) from 2016 to 2020. The sample in this study was taken using a purposive sampling method with the following criteria:

1. Reported financial statements from 2016 to 2020
2. Published financial statements in rupiah currency.

3.2.5 Data Collection and Testing Method

In this study, the data collection method used is the documentation method, where data on literature studies are obtained from previous research and support from other literature. Data on variables are obtained from financial and annual reports published by companies on the IDX on its official website www.idx.co.id. The data analysis technique used is logistic regression analysis which must pay attention to three things, test of the Hosmer and Lemeshow model, the overall fit model, and the coefficient of determination of Nagelkerke R Square.

3.3 HYPOTESIS TEST

This study uses the variables of bankruptcy probability and audit effort that affect audit delay with logistic regression. In this study there are two hypotheses and tested with the Wald test to determine whether there is an effect of the independent variable on the dependent variable partially by looking at the significant p-value (probability value), if it is greater than the 5% then the hypothesis is rejected or the independent variable does not have a significant effect on the dependent variable [15].

3.4 RESEARCH MODEL

The logistic regression analysis tool is used because Ghozali says that this tool is suitable for use in research that has a categorical dependent variable (nominal or non-metric) where the audit delay variable in this study is a dummy variable [15].

![Fig. 1. Research Mode](image-url)
4 Research Result and Discussion

4.1 Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit Delay</td>
<td>85</td>
<td>0</td>
<td>1</td>
<td>0.02</td>
<td>0.152</td>
</tr>
<tr>
<td>Probability of Bankruptcy of SOE</td>
<td>85</td>
<td>0</td>
<td>1</td>
<td>0.56</td>
<td>0.499</td>
</tr>
<tr>
<td>Audit Effort</td>
<td>85</td>
<td>0.0015</td>
<td>0.6835</td>
<td>0.217146</td>
<td>0.2051021</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It is known that the Audit Delay (Y) in this research has a minimum of 0 for company data that experiences audit delay no later than 120 days and a maximum of 1 for company data that experiences an audit delay of more than 120 days. The sample mean value is 0.02 and the standard deviation is 0.152, which means that the deviation of each individual value in the data used in the study with the mean is 0.152.

The probability of bankruptcy of SOE (X1) which is a dummy variable has a minimum value or the lowest value of the sample is 0 (zero) for companies that are safe from the possibility of bankruptcy, the maximum value or the highest value of the sample is 1 (one) for companies with the possibility of bankruptcy, the sample mean is 0.56, and the standard deviation is 0.499, which means the deviation of each individual in the research data with the mean is 0.499.

Audit Effort (X2) has a minimum value or the lowest value of the sample is 0.0015, which means that the smallest audit scope of the entire sample is 0.0015 or 0.15% of PT Bank Tabungan Negara Tbk's assets are receivables and inventories, the maximum value or the highest sample value is 0.6835 means that the largest audit scope of the entire sample is 0.6835 or 68.35% of the assets of PT Bank Negara Indonesia Tbk are receivables and inventories, the average value of the scope of the entire sample is 0.217146 or 21.71% of the company's assets are receivables and inventories and the standard deviation value is 0.2051021, which means that the deviation of each individual audit effort value with the mean is 0.2051021.

4.2 Goodness of Fit Test

<table>
<thead>
<tr>
<th>Step</th>
<th>Chi-square</th>
<th>Df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7.507</td>
<td>7</td>
<td>0.378</td>
</tr>
</tbody>
</table>

From the Hosmer and Lemeshow test results obtained a significant value is 0.378 and chi-square is 7.507. The significance value of this test produces a number that less than 0.05 and the calculated Chi-Square value is less than the chi-square table value of 14.067, so it can be concluded that the model is able to predict the observation value (Hypothesis 0 is accepted) and is feasible in explaining the research variables.
4.3 Overall Fit Model

Table 4.3. Overall Fit Model Test Result

<table>
<thead>
<tr>
<th>-2 Log Likelihood</th>
<th>Iteration History</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blok 0</td>
<td>18,951</td>
</tr>
<tr>
<td>Blok 1</td>
<td>18,827</td>
</tr>
<tr>
<td></td>
<td>0,124</td>
</tr>
</tbody>
</table>

The value of -2 Log Likelihood (LL) at the beginning (block number = 0) is 18.951 and the number -2 Log Likelihood in block number 1 is 18,827 which means that there is a decrease in -2 Log Likelihood (LL) of 0.124, indicating a good regression model and the fit of the hypothesized model with the data.

4.4 Coefficient of Determination (Nagelkerke R Square)

Table 4.4. Coefficient of Determination

<table>
<thead>
<tr>
<th>Step</th>
<th>-2 Log likelihood</th>
<th>Cox &amp; Snell R Square</th>
<th>Nagelkerke R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>18,827</td>
<td>,001</td>
<td>,007</td>
</tr>
</tbody>
</table>

a. Estimation terminated at iteration number 7 because parameter estimates changed by less than ,001.

The value obtained and used as a result of this test is Nagelkerke's R Square of 0.007 where the independent variable is only able to explain 0.7% of the dependent variable and the remaining 99.3% is explained by variables outside the research model.

4.5 Hypothesis Test Result

Table 4.5. Logistics Coefficient Test Results

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>Df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1*</td>
<td>X1</td>
<td>-.240</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>X2</td>
<td>-1.166</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Constant</td>
<td>-3.370</td>
<td>1</td>
</tr>
</tbody>
</table>

a. Variable(s) entered on step 1: X1, X2.

The regression coefficient of SOE Bankruptcy Probability (X1) has a Significant p-value (probability value) of 0.867 where the significance level of 0.05 is less than that value, meaning that this variable does not significantly affect the dependent variable (H1 is not supported) according to research by Nurahmayani [2] and Widyawati & Anggraira [16].

According to the research of Nurahmayani, factor that makes the first hypothesis is not supported is because of one of the ratios included in the measurement with the Altman z-score model that can predict bankruptcy, the solvency ratio has no effect. In maintaining the good name of the company, the company must report the amount of debt that is relevant and in
accordance with the facts so that the size of the debt of a company does not determine the sooner or later the completion of the audit and the announcement of the annual financial statements to the public [2].

Table 4.6. Frequency Statistics Result

<table>
<thead>
<tr>
<th>Audit Delay</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No later than 120 Days</td>
<td>83</td>
<td>97,6</td>
<td>97,6</td>
<td>97,6</td>
</tr>
<tr>
<td>More Than 120 Days</td>
<td>2</td>
<td>2,4</td>
<td>2,4</td>
<td>100,0</td>
</tr>
<tr>
<td>Total</td>
<td>85</td>
<td>100,0</td>
<td>100,0</td>
<td></td>
</tr>
</tbody>
</table>

The unsupported first hypothesis can also be caused by only a few data on state-owned companies listed on the Indonesia Stock Exchange from 2016 to 2020 whose audit delay exceeds the reporting time limit based on the results of the frequency statistics on these variables. Almost all state-owned companies can report their financial statements on time even though the probability of bankruptcy is high.

Audit Effort regression coefficient (X3) has a Significant p-value (probability value) of the audit effort variable of 0.775 where the significance level of 0.05 is smaller than that value, it can be interpreted that this variable does not significantly affect the dependent variable (H2 is not supported). according to the research of Vuko & cular [13].

This shows that the auditor actually conducts an assessment of the risks that will be faced (the length of time required) in conducting the audit process, looking at the level of receivables and inventory so as to reduce the length of audit delay [3]. In conducting an audit of a company with a large audit scope, seen from the level of receivables and inventories of a company, the auditor needs additional time to complete audit procedures, thereby increasing the audit delay time and threatening the company to be late in submitting its financial statements. Therefore, the auditor will try to prevent it by giving an effort in another form, for example increasing the number of audit team staff. Efforts given by the auditor in the form of increasing the number of staff to complete the audit process in a company with a large audit scope can solve the problem of late audit delay so that no matter how wide the scope is, it will not affect audit delay.

The second hypothesis is not supported, it can also be seen from the minimum and maximum values which have a very wide range, causing poor results. This is because the audit scope of several banking companies cannot only be represented using the formula used in this study, because all of these companies do not have inventory and their assets are in monetary form.

From the results of statistical analysis and justifications from this study, it can be an answer to anticipate or resolve the phenomenon of the problem of delays in reporting financial statements which according to Bapepam rules should be submitted to the Indonesia Stock Exchange at the end of the third month or in accordance with applicable regulations due to the ongoing Covid-19 pandemic that hit the world. Statistically, audit effort does not affect the length of audit delay, where the auditor can assess the risk of increasing the length of audit time (audit delay) by looking at the breadth of the audit scope using the level of receivables and inventories of a company.

The breadth of the audit scope can be a signal for the auditor to provide audit efforts in other forms, such as increasing the number of audit teams so that the auditors can adjust their
behavior by anticipating the risk of the length of audit delay (the time required for the auditor to carry out the audit process) delays in reporting independent reports which ultimately lead to delays in the publication of financial statements can be avoided. If the company's financial statements can be submitted in a timely manner, it can minimize the problem of information asymmetry that will occur according to agency theory.

5 Implication and Suggestion for Future Research

5.1 Implication

The purpose of this research is to see the effect of Bankruptcy Probability of State-owned enterprise and Audit Effort on Audit Delay in State-owned enterprise that listed on the Indonesia Stock Exchange for the 2015-2019 period. Logistic regression analysis is a hypothetical tool used. The results obtained are the probability of SOE bankruptcy and audit effort does not affect audit delay.

5.2 Suggestions

Add and use other factors, such as KAP size, audit type, auditor type, auditor turnover, audit report type, business risk, company size, convergence, profitability, accounting complexity, audit opinion, audit committee size, auditor industry specialization, solvency IFRS convergence, subsidiaries, audit fees, and the complexity of company operations, as well as Covid-19 pandemic.

6 Reference


Tax Incentive during Covid-19 Pandemic: How Effective is it to Recover Indonesia’s Economy?

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Universitas Multimedia Nusantara, Banten, Indonesia²

Abstract. The Indonesia government grants an incentive for Article 21 Income Tax to increase public consumption which has decreased due to Covid-19 pandemic. This article discusses the effectiveness of tax incentives for taxpayers and factors that contribute to the effectiveness. We measured the effectiveness with taxpayers awareness and the economic effect for taxpayers. Data was collected through questionnaires and analyzed using multiple regression analysis. The results are publicized tax policy and personal financial planning have positive significant effects towards the effectiveness of Article 21 Income Tax incentive.

Keywords: Covid-19, Indonesia, Tax Incentive, Government Policy

1 Introduction

Covid-19 pandemic has made many countries introduce policy responses including fiscal policy. Stimulus package for industries, social welfare payments, and provision of income support are types of policy response of Covid-19 pandemic [1]. Tax relief for individuals provided by governments (e.g., Australia, Ireland, and Indonesia) [2]. The Government of Indonesia in April 2020 declared Covid-19 pandemic as a national disaster. The Ministry of Finance has issued Decree No.23/PMK.03/2020 [3] on Tax Incentives to stabilize the economy, purchasing power, and productivity of some industry sectors due to Covid-19 pandemic. One of the tax incentives is Article 21 Income Tax borne by the Government (DTP) from the tax period of April 2020 until December 2021 [4]. The employer will give Article 21 Income Tax as additional payment to the employees who receive an annualized regular gross income not exceeding IDR 200 million [5].

Based on the calculation, the employees will receive between IDR 3 thousands – IDR 1,3 million per month from the tax income, depending on their income. Employers have to prepare and submit some documents to implement the incentive of Article 21 Income Tax (DTP) [6]. The Tax Incentives for Article 21 raised some concerns for the employer and employees. Companies have to break down employees’ income to determine the eligibility for tax incentive. For those employees who are unqualified with the criterias, the management has to explain to avoid the feeling of unfairness between co-workers. There are also some possibilities employees do not realize they get the incentive due to insufficient information.

Sri Mulyani, Minister of Finance of Indonesia stated there were only 62.875 out of 72.869 companies that got approval by the government to implement the incentive [7]. As a comparison, in 2016, Statistics Indonesia recorded 26,7 millions companies in Indonesia [8].
This research will focus on employees’ perspective about the tax incentive because the purpose of the policy is to increase public expenditure. We also want to know independent factors related to the effectiveness of tax incentives.

2 Literature Review

Rittel and Webber in wicked policy problems theory [9] stated some barriers to make perfect planning for government. One of the barriers is heterogeneous society. To make it worse, when there is plurality in politics, it will make impossible to aim for the same objectives. For information, Indonesian has over 200 ethnic with their own languages [10] and the 2019 Indonesia general election had 14 parties [11]. Ferro, Loukis, Charalabidis, and Osella [12] suggested the government to increase their approaches to citizens using social media during their policy making. However, the government need to train their staff about content posting in social media.

Individual tax rates for resident taxpayer in Indonesia are [13]:

<table>
<thead>
<tr>
<th>Taxable Income</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to IDR 50 million</td>
<td>5%</td>
</tr>
<tr>
<td>Over IDR 50 million – IDR 250 million</td>
<td>15%</td>
</tr>
<tr>
<td>Over IDR 250 million – IDR 500 million</td>
<td>25%</td>
</tr>
<tr>
<td>Over IDR 500 million</td>
<td>30%</td>
</tr>
</tbody>
</table>

Guiding principles of good tax policy are including effective tax administration, equity and fairness, simplicity, transparency and visibility, and accountability to taxpayers [14]. An efficient tax administration need support from a well educated and well trained staff [15]. Communicate with taxpayers to inform their rights and consistently deliver quality information are some guidances for revenue authorities [16]. According to Sri Mulyani, Minister of Finance, human resources and information technology system and database are component to reform Directorate General of Taxes [17]. Tax reform might be needed during economy crisis, for example the government gives lower tax rate to increase public consumption [18]. Consumption taxes during Covid 19 pandemic has to carefully designed because low income households tend to spend most of their income on consumption so they are heavily burdened to consumption taxes [19].

Based on explanation above, there are 4 hypotheses for this research:
- Ha1: Publicized tax policy has positive effect towards the effectiveness of Article 21 Income Tax incentive
- Ha2: Tax system modernization has positive effect towards the effectiveness of Article 21 Income Tax incentive
- Ha3: Tax knowledge has positive effect towards the effectiveness of Article 21 Income Tax incentive
- Ha4: Personal financial planning has positive effect towards the effectiveness of Article 21 Income Tax incentive
3 Methodology and Data Analysis

The research used questionnaire to get data with respondent criteria consists of:

- a. Have a Taxpayer Identification Number (NPWP),
- b. receive monthly income around IDR 6 million – IDR 16 million,
- c. business classification are eligible for Article 21 incentives

The effectiveness of Article 21 Income Tax incentive is variable dependent and there are 6 questionnaire statements to measure it. Indicators of Tax Incentive effectiveness consists of understanding policy, amount materiality, how to use incentive, and time of payment. First variable independent is publicized tax policy (6 statements). Indicators of publicized tax policy consists of received publicized about tax incentive, taxpayers felt helpful by the tax officers, knowledge about tax incentive, and use of social media. Second is tax system modernization (5 statements) with indicators consists of technological sophistication and find it helpful for taxpayer. Third is tax knowledge (6 statements) consists of understanding tax including the purpose of tax incentive and procedural knowledge about tax. Last is personal financial planning (7 statements) with indicators consists of prepare financial planning, get benefit by financial planning, and use of financial planning application. A Likert scale from 1-5 was used for each questionnaire statement. Data analysis used multiple regression analysis with SPSS 25 software. The equation is:

\[ Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + e \]  

Desc:
- \( \alpha \) : Constant
- \( \beta_1, \beta_2, \beta_3, \beta_4 \) : Regression coefficient
- \( Y \) : The effectiveness of Article 21 Income Tax incentive
- \( X_1 \) : Publicized tax policy
- \( X_2 \) : Tax system modernization
- \( X_3 \) : Tax knowledge
- \( X_4 \) : Personal financial planning
- \( e \) : error

Reliability test, validity test, classic assumption test, F-test, and t-test, are statistical tests for this research.

![Fig. 1. Research Model](image)
4 Research Result and Discussion

<table>
<thead>
<tr>
<th>Table 2. Descriptive Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
</tr>
<tr>
<td>Y1Total</td>
</tr>
<tr>
<td>X1Total</td>
</tr>
<tr>
<td>X2Total</td>
</tr>
<tr>
<td>X3Total</td>
</tr>
<tr>
<td>X4Total</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
</tr>
</tbody>
</table>

Desc:
Y1 : The effectiveness of Article 21 Income Tax incentive
X1 : Publicized tax policy
X2 : Tax system modernization
X3 : Tax knowledge
X4 : Personal financial planning

Table 2 shows there are 170 eligible respondents. The effectiveness of tax incentive has a mean value 20.68 (6 statements), it means most respondents gave neutral answers for the effectiveness of tax incentive. Publicized tax policy has mean value 20.25 (6 statements) and personal financial planning has 26.92 (7 statements). These two independent variables give the same results with tax incentive, most respondents from scale 1 to 5 (disagree to very much agree), gave scale 3 for publicizing tax policy and their financial planning. Modernization systems and tax knowledge have average answers around scale 4. Tax reform for the modernization system in the Directorate General of Tax is quite successful to implement. The respondents also have good knowledge about taxation.

<table>
<thead>
<tr>
<th>Table 3. Validity test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>The effectiveness of Article 21 Income Tax incentive</td>
</tr>
<tr>
<td>Publicized tax policy</td>
</tr>
<tr>
<td>Tax system modernization</td>
</tr>
<tr>
<td>Tax knowledge</td>
</tr>
<tr>
<td>Personal financial planning</td>
</tr>
</tbody>
</table>
Table 4. Validity Test

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cronbach Alpha based on Standardized Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>The effectiveness of Article 21 Income Tax incentive</td>
<td>0.878</td>
</tr>
<tr>
<td>Publicized tax policy</td>
<td>0.808</td>
</tr>
<tr>
<td>Tax system modernization</td>
<td>0.820</td>
</tr>
<tr>
<td>Tax knowledge</td>
<td>0.769</td>
</tr>
<tr>
<td>Personal financial planning</td>
<td>0.762</td>
</tr>
</tbody>
</table>

Table 5. ANOVA∗

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>2906.776</td>
<td>4</td>
<td>726.694</td>
<td>40.069</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>2992.430</td>
<td>165</td>
<td>18.136</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5899.206</td>
<td>169</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: The effectiveness of Article 21 Income Tax incentive

Table 6. t-test

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>1.603</td>
<td>2.900</td>
<td>.553</td>
</tr>
<tr>
<td></td>
<td>X1Total</td>
<td>.858</td>
<td>.076</td>
<td>.711</td>
</tr>
<tr>
<td></td>
<td>X2Total</td>
<td>-.034</td>
<td>.129</td>
<td>-.018</td>
</tr>
<tr>
<td></td>
<td>X3Total</td>
<td>-.156</td>
<td>.129</td>
<td>-.096</td>
</tr>
<tr>
<td></td>
<td>X4Total</td>
<td>.230</td>
<td>.091</td>
<td>.155</td>
</tr>
</tbody>
</table>

Desc:
Y1 : The effectiveness of Article 21 Income Tax incentive
X1 : Publicized tax policy
X2 : Tax system modernization
X3 : Tax knowledge
X4 : Personal financial planning
Table 6 shows the result, publicized tax policy and personal financial planning have positive significant effects towards the effectiveness of Article 21 Income Tax incentive. Therefore, Ha1 and Ha4 are accepted. Policies with much publicity helped tax payers understand their rights and they felt a significant increase in their income. Respondents with sensible financial planning notice government effort during Covid 19 pandemic and the purpose of it. Tax system modernization and tax knowledge have negative effects with significant above 0.05, and consequently Ha2 and Ha3 are rejected.

5 Implication and Suggestion for Future Research

The Indonesia Government has to increase their effort for fiscal policies to get acknowledged by the taxpayer. Most of the respondents gave neutral answers about tax incentives. Social media usage could improve public awareness for government policies. It might be disappoiting if the public remained oblivious when the government lost potential income tax for the incentive. For future research, it might be better to conduct research based on a company’s perspective to understand their constraint to implement tax incentives in their place.

Acknowledgments

This research was supported and funded by Universitas Multimedia Nusantara

6 Reference


Accounting Value Relevance Analysis on IFRS Convergence in Stages at Banking Company Registered in Indonesia Stock Exchange

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Bachelor Student of Accounting Department at Lampung University1, Professor of Accounting Department at Lampung University2, Assistant Professor of Accounting Department at Lampung University3, Associate Professor of Accounting Department at Lampung University4

Abstract. This study aims to analyze the impact of the IFRS convergence policy in stages on the relevance of accounting values and trends in the banking industry listed on the Indonesia Stock Exchange. Data were taken for empirical analysis which is divided into four stages of research in 2010-2011, 2012-2013, 2015-2016, and 2018-2019. To examine the impact of IFRS convergence on the value relevance of accounting, we use the regression equation with the returned model from Easton Harris (1991). The test results show that the impact of IFRS convergence policy against the value relevance of accounting in the first, two, and three stages of IFRS convergence has no significant effect, while the fourth phase of IFRS convergence policies shows a significant effect on the value relevance of accounting. The results of this study also indicate that there is an increasing trend of the relevance of accounting values at each stage of the IFRS convergence.

Keywords: Book to market ratio, Changes in earnings, Relevance of accounting value, IFRS, Return

1 Introduction

The era of globalization has encouraged the development of countries in international competition, especially for companies conducting cross-border business transactions. This situation causes the need for financial information and reporting that can be accessed globally in international business and creates harmony in financial reporting. To answer the existing conditions, the International Accounting Standards Board (IASB) in 2001 compiled an international financial reporting standard known as the International Financial Reporting Standards (IFRS).

Indonesia, in this case, the Indonesian Accounting Association (IAI), formulated an IFRS adoption policy in four stages, namely (1) 2008 to 2009 as the initial period of IFRS adoption, (2) 2010 to 2011 as an advanced stage of IFRS adoption, (3) 2012 as the first stage results adoption of IFRS, as well as (4) in 2015 as a result of the second phase of IFRS adoption.

The adoption of IFRS into PSAK is expected to be able to increase the comparability, transparency, and quality of the financial statements of entities in Indonesia which in turn will have an impact on increasing the value relevance at each stage of IFRS adoption. The
increasing relevance of the value of accounting information has become an indicator of quality accounting information. The quality of accounting information will affect economic decisions by stakeholders and the content of information derived from accounting numbers is one of the main elements that must describe the actual circumstances of an entity's financial condition.

The results of IFRS research published in accredited journals over the past decade still show inconsistent results. Differences and quite a long debate have occurred regarding the impact of the convergence of IFRS on the value relevance of accounting information. This is shown in research conducted by [1]; [2] where after the adoption of IFRS there was an increase in the value relevance of accounting information. Therefore, this study provides full support for IFRS adoption. In contrast to research conducted by [3]; [4]; and [5] show conflicting empirical evidence, namely that after the adoption of IFRS which is seen from the quality of accounting information, it shows that the value relevance of accounting information does not show significant results. Almost all research objects use samples from all types of industries. However, based on the statement [6], different impacts or reactions related to the convergence of IFRS and the relevance of accounting values will cause differences in each industry because it has its characteristics and uniqueness.

This study will investigate the impact of gradual convergence of the adoption of IFRS on the relevance of accounting values in the banking industry. The banking industry was chosen in this study because the banking industry is closely related to economic growth performance. This means that when the economy grows well, the banking sector will naturally grow in line with the development of business, industry, and trade in the real sector. This study is different from previous studies in analyzing the impact of IFRS adoption on the relevance of accounting value. The difference lies in the methodology of testing the relevance of accounting values. This study examines the relevance of accounting value at each stage of IFRS adoption. The next difference lies in the proxy of accounting value relevance. Previous research used the price model from [7] as a proxy for the relevance of accounting value, while this study used the return model. According to [8], the return model is more appropriate than the price model, because the return model pays more attention to econometric issues.

The objectives of this study include analyzing the impact of IFRS policies and convergence trends gradually on the relevance of accounting values. There are three benefits of this study. First, theoretical benefits, this research is expected to enrich the literature and knowledge regarding the impact of IFRS convergence on the relevance of accounting values, especially in the banking industry. Empirical Benefits. This research is expected to be able to complete empirical evidence about the impact of IFRS convergence on the relevance of accounting values in the banking industry. Practical Benefits, this research is expected to provide input and suggestions to standard makers on the convergence policy of PSAK to IFRS so that it can be used as evaluation material. Another practical benefit is as an assessment material for investors and capital market players regarding the quality and value relevance of accounting information in Indonesia after the gradual implementation of IFRS.

2 Literature Review

2.1 Theoretical Background

This research is based on regulatory theory and signaling theory. [9] state that theorists argue that if regulation emerges as a response to a crisis that cannot be identified, thus what drives regulatory policy to emerge is because of a crisis in standard setting. Accounting standard-setting parties provide a policy to respond to demands for a policy or standard that is
motivated by an emerging crisis. This theory states that the rules made by the legislature aim to protect users of financial statements through increasing economic performance. IFRS is a global accounting standard that was created to be able to meet every need of its users through established regulations. The new accounting policies (IFRS) resulted in changes in standards and affected both the financial and nominal financial comparisons of accounting activities thus affecting accounting information as a whole [10]. Apart from that, this research is also based on signaling theory. According to [11], signaling theory is information published as an announcement that will provide a signal for investors in making investment decisions. Signal theory is based on the assumption that the information received by management with the parties having an interest in other information is not the same (information asymmetry). According to [12], managers need to provide Information by publishing financial reports as a signal to assist interested parties' decision-making. The values presented in the financial statements need to have a high level of relevance to provide a signal that describes the value of a company well. Changes in decision making will be reflected in the price and trading volume of shares.

2.2 IFRS convergence policy at each stage on the relevance of accounting value

The emergence of regulatory policies was driven by various crises in setting standards. Therefore, with the encouragement of an ongoing crisis, it raises a request for a policy or standard, and as a response, accounting standard setters, in this case, the interested parties, respond to this by providing a policy [13]. Regulatory theory in this study is used based on themes related to accounting standards, namely IFRS, with the existence of IFRS, has led to a policy of uniform financial reporting and the quality of accounting contained in each global financial report.

Based on the results of [3] research, it was found that fair value accounting leads to a value relevance that is greater than the book value of equity, income, and changes in earnings in explaining stock prices and stock returns. IFRS contributes to the improvement of accounting information and market value. Following the comparison of the problem results from the regression of the price model and the return model that the transition to IFRS increases the book value of equity, income, and changes in income for value relevance during the IFRS period for non-financial listed companies in European Listed Companies (Germany, France, and Belgium). [14] stated that the IFRS adoption policy affects the value relevance or relationship of earnings value, book value and stock prices in the regression models in 2007 and 2008 and regression models in 2012 and 2013 are not the same.

Efforts to adopt IFRS are expected to provide excellent results, not only increasing the value relevance of accounting information but also the confidence of standard setters. As one of the developing countries, Indonesia is included in the group of countries that adhere to the code law. [15] in their research found that countries adhering to code law have increased the value relevance of the IFRS convergence policy. On the other hand, when the common law country adopted the policy, the value relevance decreased. Thus, this study examines the impact of IFRS convergence at each stage of adoption on the relevance of accounting value.

H1: IFRS convergence policy in the first stage has a positive effect on the relevance of accounting value

H2: IFRS convergence policy in the second stage has a positive effect on the relevance of accounting value

H3: IFRS convergence policy in the third stage has a positive effect on the relevance of accounting value
H4: IFRS convergence policy in the fourth stage has a positive effect on the relevance of accounting value

2.3 The trend of accounting value relevance at each stage of the application of IFRS Convergence

In presenting financial statements, IFRS with a principle-based approach and fair value measurement is considered to have a positive impact on the value relevance of accounting information. The application of IFRS can be useful to harmonize accounting practices, lower transaction costs, and be able to increase international investment, and benefit the effectiveness of communication with investors. The accuracy of financial analysis also improves after an entity adopts these international accounting standards. The increase in accuracy is due to IFRS requiring more detailed disclosures of financial conditions than local accounting standards that have been adjusted to global needs and conditions. This is in line with the objectives of IFRS, namely, to ensure that the company's internal financial statements for the periods referred to in the annual financial statements contain transparent and high-quality information, so that shareholders do not make mistakes in making decisions.

Fair value measurement is able to increase investor confidence in the value of earnings in valuing companies so that it will also increase the effect of changes in the relevance of accounting value. However, this increase is predicted to react optimally in its initial period in the first few years after the good news of the full convergence implementation of IFRS is informed. This is in accordance with the signaling theory where the market will react quickly and precisely to the information provided, be it good news or bad news. [16] investigates the value relevance of accounting information under the IFRS transition in Indonesia from 1994 to 2009. He finds that the value relevance of the book value of earnings and equity is higher in the period of IAS / IFRS adoption which is significant than in the small period IAS / IFRS adoption. The results proved that value relevance increased after the adoption of IFRS. Thus, the authors formulate the following hypothesis:

H5: The trend of accounting value relevance increases at each stage of the application of IFRS convergence

3 Methodology and Data Analysis

The research population is the banking industry which is listed on the Indonesia Stock Exchange. Researchers used purposive sampling, which is a technique used in determining the selected sample based on certain criteria and based on certain considerations that are tailored to the research objectives. By considering data availability and obtaining a balanced time observation, the researcher divides the four research periods, namely the IFRS convergence process (2010-2011), the results of the first stage of IFRS convergence (2012-2013), the results of the second stage of IFRS convergence (2015-2016) and the third stage of IFRS convergence (2018-2019).
Table 3.1 Research Data

<table>
<thead>
<tr>
<th>Information</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>The number of all banking companies listed on the IDX</td>
<td>48</td>
</tr>
<tr>
<td>Banking companies listed before 2010</td>
<td>26</td>
</tr>
<tr>
<td>Incomplete data</td>
<td>8</td>
</tr>
<tr>
<td>Company Samples</td>
<td>18</td>
</tr>
<tr>
<td>Research Period: 4 stages</td>
<td></td>
</tr>
<tr>
<td>Each Stage</td>
<td>36</td>
</tr>
</tbody>
</table>

Based on the results of observations made regarding the sample selection criteria, the sample data that passed the test were 18 companies from 26 companies. The details of this research data can be seen in Table 3.1. Based on the hypothesis that has been built in the explanation in the previous chapter. The value relevance is measured by looking at the sig of F test and the adjusted R2 value from the regression of the following equation:

\[
\text{Rit} = \beta_0 + \beta_1 \Delta \text{EPSit} + \beta_2 \text{BM it} + e \text{it}
\]

Rit is the stock return of company i in year t, which is measured by the ratio ((Pi - Pt (t-1)) / (Pi (t-1))); \( \Delta \text{EPS} \) it is the change in earnings per share of the company in year t, which is measured with the ratio ((\( \text{EPSit} - \text{EPSi} \) (t-1)) / (Pi (t-1))); BM it is the book to market ratio of the company in year t, which is measured by the ratio (BV/MV) and e it is the error term.

The main variable of this research is value relevance. The value relevance in this study is measured using the return model from [17] where it is assumed that the return on company shares is explained by changes in net income per share and book to market ratio. The dependent variable is stock returns.

4 Research Results and Discussion

4.1. IFRS convergence policy in stage effect on the relevance of accounting value

Hypothesis testing at each stage of the IFRS convergence of this research data uses the F test. The test results are presented in Table 4.2 which shows that the hypotheses of one to three studies are not supported with a sig value greater than 0.05. While the fourth hypothesis in this study is supported by a sig value of less than 0.05. The results of the four-stage IFRS convergence F test show the sig probability in each stage of 0.300 at the IFRS convergence stage (2010-2011), 0.097 in the results of the IFRS stage 1 (2012-2013), 0.079 in the results of the second stage of IFRS convergence (2015-2016), and 0.001 in the convergence stage three process (2018-2019). Based on the statistical results, it can be explained that the variables \( \Delta \text{EPS} \) and BM simultaneously have no effect on stock returns in the first, second, and third stages of IFRS convergence. Whereas in stage four of the IFRS convergence, the variables \( \Delta \text{EPS} \) and BM together have an effect on stock returns.
Table 4.2 F Test of Multiple Regression Analysis

<table>
<thead>
<tr>
<th>Stage</th>
<th>Sum of Model Squares</th>
<th>F</th>
<th>Sig.</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010-2011</td>
<td>Regression</td>
<td>0.574</td>
<td>1.247</td>
<td>0.300&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>2012-2013</td>
<td>Regression</td>
<td>0.240</td>
<td>2.511</td>
<td>0.097&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>2015-2016</td>
<td>Regression</td>
<td>0.601</td>
<td>2.739</td>
<td>0.079&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>2018-2019</td>
<td>Regression</td>
<td>1.081</td>
<td>9.243</td>
<td>0.001&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

Based on the results of statistical testing, it shows that in the IFRS convergence process in 2010-2011 (H1) the IFRS convergence policy in the first stage has no effect on the relevance of accounting values with a sig value of 0.300 (greater than 0.05). This means that statistically the variable changes in accounting earnings and book value on market value together have no effect on company stock returns, so H1 is not supported.

At this stage, the IFRS convergence process policy was taken so that Indonesian banks could be recognized globally to be able to compete and attract investors, with the repeal of PSAK No. 31 on banking accounting since January 1, 2010. Researchers see IFRS convergence for countries with code law traditions such as Indonesia. The model of the financial system and institutional environment is less suitable when compared to common law countries such as England, Australia, and Canada, which causes insignificant improvement in the quality of accounting information after IFRS adoption. Countries in the code law cluster generally have a more dominant banking function than the capital market in meeting corporate funding needs. State accounting standards in the code law cluster are also prepared by regulatory agencies controlled by the state through detailed legislation to achieve uniformity. These various characteristics of the institutional environment cause the need for public disclosure to be less important in code law countries than in common law [18]. Where this can hinder the purpose of IFRS adoption to improve the quality of accounting information. In addition, banks in Indonesia are deemed not ready to adjust to policy changes quickly due to banking financial reports that previously used historical cost accounting.

This research is not in line with regulatory theory and signal theory. Where, regulatory theory states that experts argue that if regulation emerges as a response to a crisis that cannot be identified, then the thing that drives regulatory policy to emerge is because of a crisis in standard setting. Meanwhile, the signal theory states that information published as an announcement will provide a signal for investors in making investment decisions. However, in this study the policies made by regulators do not provide a signal that investors directly respond to in making their decisions. Researchers suspect this influence can be caused by the existence of more powerful variables and theories such as macroeconomics. Where, in 2008 there was a subprime phenomenon in the US that triggered systematic risk and a financial sector crisis for stock market value which then experienced a drastic decline in 2009 and had an impact on the world economy in many countries, including Indonesia.

The results of this study also support [18] argument that in code law countries (including Indonesia), with the characteristics of the institutional environment such as weak investor protection, lack of law enforcement, concentrated ownership, and banking- oriented funding,
the adoption of IFRS may not necessarily increase the value relevance of accounting information.

Based on the calculation of statistical tests on the results of stage one convergence process of IFRS 2012-2013, the sig value is 0.097 (greater than 0.05) so it can be concluded that changes in accounting profit and book value on market value together have no effect on stock returns company, so H2 is not supported.

At this stage the policy taken is the application of PSAK 50 and PSAK 55, which are accounting standards that refer to IAS 39 and IAS 32 concerning financial instruments. It is hoped that this standard setting will encourage a harmonized process of financial statement preparation and analysis which will have a significant impact on banking financial reports due to changes in the way of recognition and measurement. However, based on research by [19] the average CAR of companies tends to decrease after the implementation of IFRS, one of which is the result of the application of PSAK 16, 50, and 55. The application of PSAK 16 causes an increase in asset value followed by an increase in depreciation costs. This causes the company's profit which is one of the composition of capital to decrease. The adoption of PSAK 50 and PSAK 55 also had a major impact on banking entities. The main impact of the application of this standard is in the provision of non-performing loans, where the emphasis is on objectivity in determining Allowance for Impairment Losses (CKPN) for loans, which must be based on historical data for the past three years, as well as the necessity of valuing individual debtors. This standard is a very complex accounting standard, especially for banking entities.

This research is not in line with regulatory theory and signal theory. This condition proves that investors do not use information on changes in net income per share and book value per market value of the company in making decisions related to signaling theory which explains that indirect signals are closely related to the total value of equity that is maintained, dividend policy, and accounting policy selection chosen by investors in making decisions during the IFRS convergence period. The researcher also suspects that the implementation of the results of stage one of the IFRS convergence policy amidst crisis conditions due to tight liquidity, proves that the economic crisis that occurred in that period, 2012 to 2013, was one of the external factors affecting investment decisions made by investors, where investment decisions were made. During this period, the economic crisis in Europe and the United States was largely affected, such as the taper tantrum, which also affected the depreciating value of the rupiah and the decline in national economic growth.

This result is in line with the research of [20] which examines the adoption of IFRS with the value relevance of accounting information which shows that there is no difference in the value relevance of accounting information between the periods before and after the application of IFRS, the same thing happened in the first stage of IFRS convergence research. PSAK where there is no simultaneous relationship between independent and dependent variables for the relevance of accounting value.

Based on the calculation of statistical tests on the results of the second stage of IFRS convergence in 2015-2016, the sig value is 0.079 (greater than 0.05) so that it can be concluded that changes in accounting profit and book value on market value together have no effect on company stock returns, so H3 is not supported.

In the results of the second stage of IFRS convergence, for banking entities that have gone public, applying PSAK 60 in financial statements is a must in order to provide information for readers of financial statements. This PSAK is the latest version of PSAK which regulates the disclosure requirements in financial statements for financial instruments that were previously regulated in PSAK 50. PSAK 60 was adopted from IFRS 7 which became effective
since January 1, 2015. The results of this study indicate that there is no significant effect on accounting value relevance is most likely caused by the level of disclosure of financial instruments that is not too different from one company to another that is the sample of this study. This is possible because usually the banking sector in Indonesia is the sector that is the earliest to implement standard changes and is usually mandatory. The difference that occurs is only because the company concerned has no exposure to the items that must be disclosed, not because they do not want to disclose. This is why there is not too much difference between the companies in the sample which results in the market not responding to the small variations in disclosure of financial instruments of the banking companies that are the samples in this study.

This research is not in line with regulatory theory and signal theory. Where the regulatory theory emerged due to a crisis in standard setting, however, the policies made by regulators did not provide a signal that investors directly responded to in making decisions on the results of phase two of IFRS convergence on this PSAK. The test results on this model are in line with the research results of [21] and [22] where the test results show that the results of full IFRS adoption have no effect on the value relevance of accounting information.

Based on the calculation of statistical tests in the stage three process of IFRS convergence in 2018-2019, the sig value is 0.001 (less than 0.05) so that it can be concluded that changes in accounting profit and book value on market value jointly affect the company's stock returns so that H4 is supported.

The three-stage IFRS convergence process policy is related to the plan to implement new accounting standards by the Financial Accounting Standards Board (DSAK) and the Indonesian Institute of Accountants (IAI), one of which is PSAK 71. This new accounting standard adopts IFRS 9. Broadly speaking, the DSAK is indeed has issued this latest financial accounting standard for a long time but will only be effective in 2020. With PSAK 71, banks are required to make a larger Allowance for Earning Asset Losses (PPAP) compared to previously using PSAK 50, 55, and 60 which were effective in effect since 1 January 2015. The advantage of the expected loss approach imposed by PSAK 71 is that it prevents banks from allocating pro-cyclical credit loss provisions. Procyclical occurs when banks increase their provision for credit losses during a downturn and reduce them when the economy improves. When the economy improves, a large proportion of the loan portfolio can be collected smoothly and banks reduce their provision for credit losses. This study also proves that the IFRS implementation policy at an advanced stage has an effect on the relevance of accounting value. These results indicate that the implementation of more IFRS-based PSAKs has been perceived by investors as an increase in the quality of financial reports, particularly the quality of the book value of equity and earnings.

The results of this study are in line with regulatory theory and signal theory where the policies made by regulators are responded directly and positively by investors. This condition proves that the level of investor confidence in the company has increased again and uses information on changes in net income per share and book value per market value of the company in making decisions which are also influenced by positive economic growth and increasing economic conditions in Indonesia. The results of this stage test are in line with the research of [23] and [14] where the results of their research found that the value relevance of accounting information has an effect after changes or accounting standard policies. This can provide evidence that IFRS adoption can increase the value relevance of accounting information for adopting countries.
4.2 The trend of accounting value relevance at each stage of the application of IFRS Convergence

Hypothesis testing to see the trend of the relevance of the accounting value on the convergence of IFRS gradually on the data of this study uses the coefficient of determination test seen through the adjusted R2 value. The test results are presented in Table 4.3 showing that the trend of the relevance of accounting value increases at each stage of the IFRS convergence. Where the value of the adjusted R2 in the 2010-2011 IFRS convergence period (0.014), the results of the first stage of convergence of the 2012-2013 IFRS (0.079), the results of the second stage of convergence of IFRS 2015-2016 (0.090), and the convergence process of the third stage of IFRS 2018-2019 (0.320). This means that at the four stages of the convergence period, 1.4%, 7.9%, 9%, and 32%, the variation in stock returns can be explained by the variation of the two independent variables ΔEPS and BM. While the rest is explained by reasons other than the model.

<table>
<thead>
<tr>
<th>Regression Model</th>
<th>Hypothesis</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFRS Convergence Process (2010-2011)</td>
<td>Increasing the Relevance of Accounting Value in Each Convergence Stage</td>
<td>0.070</td>
<td>0.014</td>
<td></td>
</tr>
<tr>
<td>IFRS Phase 1 Results (2012-2013)</td>
<td></td>
<td>0.132</td>
<td>0.079</td>
<td>There is a Trend of Increasing the Relevance of Accounting Value, H5 Accepted</td>
</tr>
<tr>
<td>IFRS Phase 2 Results (2015-2016)</td>
<td></td>
<td>0.142</td>
<td>0.090</td>
<td></td>
</tr>
<tr>
<td>IFRS Phase 3 process (2018-2019)</td>
<td></td>
<td>0.359</td>
<td>0.320</td>
<td></td>
</tr>
</tbody>
</table>

Based on the results of statistical tests to see the trend of the relevance of accounting values at each stage of the application of IFRS convergence, it is indicated by the adjusted R2 value obtained from the regression results, where if the adjusted R2 value increases, the quality of accounting information increases due to the IFRS convergence process. In this test, the researcher proves that the relevance of the accounting value of financial statement elements increases at each stage of the IFRS convergence from time to time so that H5 in this study is supported.
The illustration shown in Figure 4.1 shows that the value relevance of information from financial statement elements increases from year to year, although in the first three stages the increase tends to be insignificant, but in the fourth stage there is a significant change in value. The value relevance of the elements of financial statements in 2010-2011 as the preparation period for IFRS convergence is 0.014 or 1.4% for the value of stock returns. The value relevance for return of 1.4% indicates that there is an influence of the global economic crisis that occurred in 2008 to 2009 which made the company's financial condition worse. After the global economic crisis in Europe in 2012 the value relevance of successively increased up to 2016. In the 2012-2013 research period as a result of the first stage of IFRS convergence on PSAK the value relevance of accounting information was 0.079 or 7.9% for the value of stock returns. In 2015, although the national economic growth was at its lowest point at 4.9%, the effect of the results of the second stage of IFRS convergence on PSAK showed the value of accounting relevance of 0.090 or 9% for stock returns. In the third stage of the IFRS convergence process for the 2018-2019 period, there was a significant increase in value relevance when compared to the trend in the previous stage, Indonesia's economic growth which increased by 5% from the previous period in 2017, is directly proportional to the relevance of accounting value for stock returns of 0.320 or 32%.

The value relevance of accounting information at each stage of the IFRS convergence as a whole has increased from year to year. Based on the adjusted R2 value of the elements of financial statements, the trend of financial statement analysis at each stage of IFRS convergence can be concluded that the H5 statement which states that the trend of the relevance of accounting values for stock returns at each stage of IFRS convergence increases over time is empirically supported. These findings are consistent with the results of previous studies conducted by [16]; [24]; [23]; [14]; [1]; and [2] by stating that IFRS adoption can increase the value relevance of accounting information. The higher the level of IFRS adoption, it will have an impact on the high value relevance of accounting information, because IFRS adoption is influenced by an increase in disclosure which causes the information presented to be more relevant and accountable.

5 Implications and Suggestion for Future Research

This study aims to prove whether the IFRS convergence policy affects the relevance of accounting value by measuring the significance of the F test and how the trend of accounting
value relevance by measuring the value of Adjusted R2 is obtained from the regression results between stock returns and changes in net income per share and book market value per value obtained on the financial statements at each stage of the IFRS convergence. Based on the results of the research that has been done, this research can be concluded as follows. First, testing the impact of the IFRS convergence policy on the relevance of accounting value on the 2010-2011 (H1) IFRS convergence process, the results of the 2012-2013 IFRS convergence stage one, and the 2015-2016 IFRS convergence stage two results (H3) indicate that the convergence policy IFRS does not have a significant effect on the relevance of accounting value, so this research hypothesis is not supported. Second, testing the impact of the IFRS convergence policy on the relevance of accounting value in the stage three process of the 2018-2019 IFRS convergence (H4) shows that the IFRS convergence policy affects the relevance of accounting value with a sig value of 0.001 so that this research hypothesis is supported. Third, testing the trend of the relevance of accounting values at each stage of the application of IFRS convergence (H5), the results of this study indicate that there is an increasing trend in the relevance of accounting value at each stage of IFRS convergence in the preparation period for IFRS convergence 2010-2011, results of stage one IFRS 2012-2013, results second stage IFRS 2015-2016, and the convergence process stage three IFRS 2018-2019 with an adjusted R2 value of (0.014), (0.079), (0.09), and (0.32).

This study has several limitations in the research process. First, the population in this study were 26 banking companies listed on the stock exchange before 2010, but not all companies published their financial reports, so there were only 18 companies that were sampled. Second, this research is only limited to one type of industry, namely banking, while there are several types of industries that are also affected by the convergence policy of IFRS on PSAK.

Based on these results, the researchers offer suggestions for the next researcher who wants to examine the value relevance of accounting information. First, can adding variables associated with the value relevance of accounting information and the application of IFRS as the cash flows, using other research approaches and models such as incremental association studies and Ohlson models (1995). Second, adding time to observations such as the period of Industrial PSAK in 2008-2009 in his research. Third, further research can expand the population of various corporate sectors apart from the banking sector, but other financial industries.
References


Examining Challenges of the Prosecutor Officials Combating Corruption of Capital Expenditures in Indonesia’s Local Governments

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Abstract. This study explores corruption in capital expenditure of local governments and prosecutor officials’ failure to combat it. Applying an instrumental case study strategy through an actor network theory (ANT) approach, the study analyzes archival data and field data got from in-depth interviews with 67 key informants in DI Yogyakarta’s Regency/City. The results highlight the prosecutor officials face two essential hamper to handle corruption of using capital expenditure in local government. First, they have limited access to corrupt activities. Second, they experience some intervention to handle corruption. Thus, the study develops an analysis to decipher the local prosecutor officials fail in combating local corruption effectively, in which useful enhance anti-corruption strategies related to execution of local capital expenditures. The study also provides an insight to improve the understanding of local and national policymakers dealing with the corruption eradication ineffectively in capital expenditures.

Keywords: ANT, Capital expenditure, Corruption, Local government, Prosecutor

1 Introduction

Indonesia two decades ago carried out great reform to strengthen the role of state institutions in combating corruption. One of the institutions expected to better fight corruption is prosecutor officials, which law amendment reinforcing them through law 16/2004 [1]. Unfortunately, corruption has been still rampant on local government. Recently, the Governor of South Sulawesi Province was caught red-handed by the Corruption Eradication Commission (KPK) for corruption related to local government capital expenditure [2]. Previously, 41 of the 45 council members in Malang City, East Java Province and 51 total council members of the Jambi Provincial were suspected of accepting bribes related to the local budget [3]. However, Indonesia is still one of the most corrupt countries in the world, which is ranked 102 out of 180 countries [4]. So that, the role of the institution is not visible in the eradication of corruption on local governments [5].

Contradiction of expectations and facts from efforts to enhance Indonesia’s handling of corruption has attracted the interest of scholars. [5] identifies prosecution of corruption cases in local area terribly political about strategies weakening local political rivals. [6] and [7] convey comprehensive needed of political will and capacity to minimize corruption in the institution of
law enforcement. So that, this study complements prior researches that have not studied in depth local prosecutor fails control corruption in executing capital expenditures by local governments.

This study concentrates on capital expenditures due to the root of corruption case, about 85% corruption cases come from procurement of the expenditure [8]. Then, most of big corruption cases engaged in the abuse and the misusing of capital expenditures in which take part in involving grand corruption, legislative corruption, and bureaucratic corruption [9]. Therefore, exploring deviant happens in capital expenditures enable to improve insight of corruption more in depth.

Applying an instrumental case study, the study carried out uses archival data and field data from in-depth interviews to key informants comprise state prosecutor officials, police investigators, politicians, state auditors, and executives (top managers, middle managers, and subordinates) of the local government, namely Bantul Regency, Sleman Regency, and Yogyakarta City. The findings based on actor network theory approach [10] and [11] conveys two essential challenges to prosecutors for controlling corruption in the executing capital expenditure of the local governments. First, the perpetrators of corruption have more sophisticated strategies to veil their illicit activities by complex networks so that the prosecutors hard find their actions. Second, the prosecutors face some pressures in carrying out their work. Thus, this study highlights great reform to the state prosecutor officials need re-rationalize their role and good governance in dealing with corruption in the local government.

2 Literature Review
2.1 Capital Expenditure in Corruption Context

Capital expenditures base on [12] are expenses allocated to purchase tangible assets or expenses allocated to the procurement or construction of tangible fixed assets that have a useful value of over twelve months. These assets are used in government activities to provide services and facilities to public, include land, equipment and machinery, buildings and constructions, roads, irrigation and networks, and other fixed assets. This is more commonly known as infrastructure spending or physical spending, which is closely related to public services.

The ineffectiveness of infrastructure spending in conditions of high corruption has become a topic of interest for post-reform scholars. [13] conveys that the actors shift social spending from education and health spending to infrastructure and defense spending, which provides opportunities for private gain corruptly through secrecy due to relatively hard to assess and far away from public to watch. [16] reveals that the perpetrators of corruption are more sophisticated than public surveillance that might monitor them so that the perpetrators of corruption can identify "the safe sections" — and commit corruption in those areas. As [16] argues that corruption involving infrastructure spending is more complex and not the same as other daily corruption that is easy to measure.

2.2 The State Attorney in Post-Reform Corruption

Recently, several scholars have studied law enforcement officials' efforts in combating post-reform corruption in Indonesia. The researchers are still pessimistic about the results of the reforms carried out to eradicate corruption. [17] states still hard to expect the corruption eradication by the Polices and the Prosecutor's Officers because the estuaries of corruption are still in these two institutions. This is usually done with the support of wealthy individuals, such as persons of government and law enforcement officials, lawyers, and lawmakers. This can be seen in performing arbitrary and random corruption prosecutions at the local level [5].

2.3 An Actor-Network Perspective on Corruption Perspective

Actor-Network Theory (ANT) can be described as a methodological tool based on a particular worldview that aims to trace the practices through which society congregates, through
which society is constantly reconfigured. Configuration is done through translation, which means displacement, shift, discovery, mediation, creation of links that did not exist before. This makes it possible to trace the corrupt practices of public officials that arise from the opacity between carrying out their obligations for the public interest or the interests of themselves and their cronies [18].

[10] identified and explained that there are four elements in translation that allow overlapping each other, namely problematisation, interessement, enrolment and mobilization. Problematisation is the determination of the identity and interests of actors that are in line with their own interests, which must go through an obligatory passage point. Next, the interessement stage is to convince other actors to agree and accept the definition of the major actor. Meanwhile, in the enrolment stage, an actor accepts the interests determined by the key actors and seeks to achieve them through actor alliances that are aligned with the actor-network. Finally, the mobilization stage, where the major actor is ensured to represent the interests of other actors. Here, the possibility of treason occurs, i.e., situations where actors do not comply with the agreements arising from the enrolment of their representatives [10].

3 Methodology and Data Analysis

The study uses an instrumental case study strategy to collect and to analyze data, as [19] suggested. Besides archival data, collecting field data was carried out in the medium-size of local government related to corruption cases, namely Sleman Regency, Bantul Regency, and Yogyakarta City, where they can be compared to other Indonesia's local government. Moreover, we adopted three procedures in collection and analysis processes of the data as recommended by [20]. First, prioritizing regulatory and policy documents to analyze forms of violations that are categorized as corruption. Second, we use the BPK Audit Report (LHP) document to identify corruption in capital expenditures. Finally, an in-depth interview did to find out how the network functions, model it, and perform a detailed reconstruction of how the case unfolded. About 41 key informants elected based on their engagement in executing capital expenditures and handling corruption cases in the research context, namely 5 prosecutors, 5 police investigators, 3 state auditors, and 26 subordinates, 4 middle managers, and 2 top managers of governments. Interviews were doing February to April in 2021, lasted from 40 minutes to 90 minutes. Interviewees' real names do not show in this article to protect their identity. The key demographic and economic information concerning the studies are presented in Table 1.

<table>
<thead>
<tr>
<th>Table 1. Key demographic and corruption information regarding studies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bantul Regency</strong></td>
</tr>
<tr>
<td>Population (2019)</td>
</tr>
<tr>
<td>Size</td>
</tr>
<tr>
<td>Total government budget 2019</td>
</tr>
<tr>
<td>Corruption cases (2019)</td>
</tr>
</tbody>
</table>

4 Research Result and Discussion

The text analysis results of the BPK's Audit Result Reports (LHP) (2020) depict capital expenditures in Bantul Regency are more prominent than the other two areas analyzed in showing corruption. Type of capital expenditure that becomes the major concern according to the results of the analysis is the procurement of local government construction services. Most common forms of corruption encountered in this analysis is an overpayment of work agreed to as “completed” work, presented in Table 2. The “completed” work actually has parts that have not been carried out or are not fully done, resulting in a lack of volume but paid in full.
Table 2. Recapitulation of analysis results on BPK findings related to corruption

<table>
<thead>
<tr>
<th>Unit of Analysis</th>
<th>Infrastructure expenditure related to corruption potentially</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bantul Regency</td>
<td>Lack of work volume for housing funds for disaster-affected communities (local government loss of IDR20 million) and insufficient volume of work on 5 road construction packages (local government loss of IDR82 million).</td>
</tr>
<tr>
<td>Sleman Regency</td>
<td>Lack of work volume on five packages of road, irrigation and network construction works (local government loss of IDR212 million).</td>
</tr>
<tr>
<td>Yogyakarta City</td>
<td>Lack of work volume for the three work packages includes: procurement of equipment and machinery, construction of buildings and construction, and construction of roads, irrigation and networks (city loss IDR 95 million).</td>
</tr>
</tbody>
</table>

Further analysis of the documents and in-depth interviews reveal major roles of the state attorney's officer based on [1] to fight corruption. There are strong hopes for dealing with corruption in the local government still rest on the state prosecutor's officer because, besides police, just them have the authority to investigate and prosecute parties related to corruption in the local government (see article 30 paragraph 1 [1]). According to the criminal law, only the police and certain civil servants can conduct investigations into criminal acts, including corruption. After investigating, the police submit the results to the prosecutor's office for prosecution in court. In additional, the prosecutor's officers have authority to direct investigate extraordinary crime, like corruption. Therefore, they play an essential role in handling corruption in local government.

State prosecutors at the regional level does not have authority and advanced tool to tap corrupt activity, so they practically rely on the skills of their investigators to collect evidence. Unluckily, corrupt actors are more sophisticated in carrying out corruption. This makes the investigators can only receive reports or hear about it, but it is difficult to prove. According to the prosecutor avowal, he didn't know of the arrests of corruption cases in his working area by the KPK because the corruption was carried out complexly. In addition, the persecutors sometimes face the intervention of their superiors who want to handle corruption cases unconventionally. A prosecutor's investigator said, “...it was necessary to use multiple perspectives to look at corruption because their own superiors play golf, which cannot be covered by only the amount of their salary”. These various challenges will color to search and to trace corruption in capital expenditures that involve a network of many actors.

Discussion and theorization of findings will be explained based on translation [10] in four stages: problematization, interessement, enrolment stage and mobilization of corruption found in this study.

Problematization

The beginning of the story of the actors involved in the implementation of capital expenditure in the context of corruption based on the ANT starts from the problematization [10], [11]. The major actor who has the authority to carry out capital expenditures for certain services in the local government is the official making the commitment (PPKom). In this, he/she tried to maintain his/her position and their friendship with local government business partners. Business partners, actors from political parties, and mediators will be resolved their problem through an agreement as an obligatory passage point from PPKom as the major actor.

Given PPKom is formally and substantively responsible for executing government procurement of goods and services, especially those involving third parties [21] allows for intervention from various parties who have higher power. Thus, PPKom makes a condition, as
an obligatory passage point, which allows the entrepreneur to win the competition, but this condition allows other entrepreneurs to participate, but can be disqualified.

**Interessement**

The next stage after actors identifies the problem is to find a solution by establishing a network, or interessement [10], [11]. It is unimportant who initiated to build the corrupt network because the actors have their own interests to be linked. Business people need a network to maintain continuity in their business. One entrepreneur revealed that:

“Maintaining relationships is very important in getting a job in the local government. Many want jobs and few are available, so it is important to communicate with local government councilors and procurement officials. I as an elder in this matter know the map in the council about budget plots. I can get direct procurement work two-pack from A board member, one package from B board member. I can work four to five jobs in a year with a budget of under IDR 200 million.”

The linking of the interests of the actors is done with a hidden agreement besides a formal agreement. The main actors use obligatory passage points to determine another actor involved [20]. Board members with political power can intervene PPKom to “facilitate” their business partners. Meanwhile, PPKom uses their authority to win over their business partners by providing them with a “freeway” (the government business partner's term for privilege).

The main actor will direct other actors to follow the capital expenditure procedure according to the rules. This condition makes burdensome for the local attorney to find evidences and then to prosecute. Recognizing of local government business partners is revealing they had to go through at least four stages of document verification in order to disburse work funds. Then, the regional treasurer also revealed that they have no problem with disbursement if all the required documents are complete, but if something is missing, we will return it to be completed. PPKom also said that financial administration is very complex in procurement, although it is not substantial but more clerical.

**Enrolment**

The next stage is enrolment [10], [11], which shows the strategy of the key actors so that other actors follow so that their activities are carried out legally and are difficult to track by investigators. The actors need cooperation to link their interests to the procurement of government goods and services, both based on information technology and through manual processes. Business people must follow directions from PPKom so that they are eligible to become the winner of the work package tender. If it is done through an electronic system, the procurement procedure involves the procurement official to determine the winner, but PPKom determines whether the winner is accepted or not. If not, then it is possible to make direct appointments to certain providers desired by the main actor. Thus, this stage is a role identification of the actors they play to link their interests in the corruption network through strategies that supervisors may not reach [22].

**Mobilization**

The last stage is mobilization, namely the behavior or actions of certain actors representing the interests of other parties who have entered the agreement [10], [11]. In corruption, these actions were carried out through hidden transfers, physically and socially, which made them difficult for investigators to track them down. Although local attorney can guess who the actors are, they have difficulty gathering evidence to track down the mastermind behind this corrupt activity. This is under the statement of the investigating prosecutor to the local attorney who stated that:

“Although we have guessed who the actors are related to corrupt activities in executing government procurement, it is difficult to prove it. None of the government officials confessed and proving it was difficult because the administration was well done. In
contrast to the private sector (provider or business people), which immediately recognized it and immediately returned local government losses. Here, the officials do not realize what they are doing is corruption, maybe because they feel they are not taking money, but that means taking part. They have low awareness of corrupt activities.”

The results of the interview with PPKom depicted that the intervention sentence for determining the winner was carried out subtly, namely "...the results of yesterday's work were good." This means that PPKom must win the provider who does the work the board member is referring to. Eventually, the acknowledgment of the provider or businessman to the corrupt activity in the network is called [10] as betrayal.

Overall, the role of the local state attorney in pick up corrupt networks is still low. They find it is difficult to uncover corrupt networks disguised by legal procedures. The actors seem to hide corruption under legal procurement procedures. Interventions are carried out subtly. That is difficult for the local state attorney to understand.

5 Implication and Suggestion for Future Research

The study finds the performance of unscrupulous local officials and other actors involved in the corruption network in the use of capital expenditures has made the local state attorney powerless. Massive abuse of authority combined with sophisticated financial governance skills between actors, namely capital expenditure implementing apparatus, local politicians, mediators, and business people–makes the network of corruption more complex and blurred [25]. It is also found that the networks of actors involved in corruption use skills and knowledge to straddle traditional anti-corruption control systems as suggested by [22]. Thus, it is important to build a more established anti-corruption strategy, rather than relying on ineffective anti-corruption strategies over the past 56 years [6].

The study contributes to the literature by providing empirical observation in revealing the description of corruption as a translational process that allows us to identify several factors of corruption that include human and non-human actors and mechanisms that direct the creation of corruption networks as [20] conceptualized. Our study enhances the findings of prior studies about how the adoption of financial governance reforms that have yet to achieve their objectives as the outcome of corrupt committed by apparatus and regional political elites [24], a phenomenon that flourishes the scope for corruption in regional governments. In addition, this study provides an understanding to policy makers for comprehensive handling and increasing the effectiveness of the local state attorney's role in fighting corruption in the local government. It is important to actually handle corruption as an extraordinary crime that requires a firm commitment from the political elite to deal with it [6].

This study also has some limitations. The study only involved a limited number of instrumental case studies used in exploring the facts around corruption of local capital expenditures by the local state attorney. Therefore, further studies need to conduct further studies using several cases as a comparative study.

6 Reference


Improving Visual Communication Design Students’ Creativity, The Role of SNS and Collaborative Learning

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Abstract. Visual Communication Design, as one of the creative economy sub-sectors, is Indonesia’s economic driving force, thus universities are expected to produce creative Visual Communication Design practitioners to encourage innovation, supported through the use of technology, namely Social Networking Sites (SNS). Despite the increasing studies of SNS as today’s digital culture, there is a lack of study regarding the benefit of SNS to improve Visual Communication Design undergraduates’ creativity in Indonesia, especially its function as a collaborative learning tool. The objective of this paper is to find the determinants of SNS usage among the students, known to have a role in higher education regarding the development of Visual Communication Design students’ creativity through the influence of collaborative learning. TAM (Technology Acceptance Model) model is used to analyze the intention of using SNS. The research samples were Visual Communication Design students at Universitas Multimedia Nusantara as well as representatives from regions with the highest level of visual design business in Indonesia, namely Yogyakarta, Bandung, and Jakarta, with 206 participants. The data results were analyzed by using the descriptive statistical analysis technique and inferential statistical analysis technique in the form of PLS-SEM. The findings are that the use of SNS has an impact on students’ creativity, both directly or indirectly through collaborative learning.

Keywords: social networking sites, creativity, visual communication design, collaborative learning, education.

1 Introduction

The creative industry is one of Indonesia’s economic driving forces. A Research in 2016 by Creative Economy Agency, creative economy contributed 7.38% and 7.44% GDP (Gross Domestic Product) of the total national GDP in 2016 and 2017, projected to grow positively with an estimated value of more than 1,000 trillion rupiahs in 2017 and increase to 1.102 trillion in 2018. Visual Communication Design, as one of the creative economy sub-sectors, offers high contribution due to its capability in affecting other creative economy sub-sectors. This sub-sector, which is mostly concentrated in Yogyakarta, Bandung, and Jakarta, made IDR 579.3 billion in 2016 with a GDP growth rate of 8.98% [1]. Its human-based resources, which emphasizes aspects of ideas, intellectuality, and skills, unlike the natural resources which will run out one day, [2], is suitable to Indonesia’s current condition,
considering that Indonesia is ranked fourth as the country with the largest population, namely over 273 million people [3].

Unfortunately, the progression of this sector is still considered to be low, due to unfavorable environmental and technological conditions [1]. The potential of the Visual Communication Design sector can be boosted by a better education, supported by the proper use of technologies to create more qualified practitioners [4]. The quality of designers is correlated to their intellectuality as creative individuals, which refers to a person's ability to express original thoughts and outputs or have novelty values [2]. Therefore, the government and the higher education institutions need to consider using an academic approach, centered on a culture of innovation related to the development of students’ creative mindsets, supported through the use of adequate digital-based facilities.

SNS (Social Networking Sites) or social media have long influenced the daily lives of the younger generation, especially in the lives of students [5]. SNS is known to be used for educational purposes [6], [7], and promoted students’ creativity [6], [7], encouraged by students’ habit to actively socialize in social media. Previous research has shown that the main motive of students in using SNS is to socialize and communicate with others (social aspect) than to share work (cognitive aspect) [8]. This online socialization activity has become students’ habit, both in learning and/or to fill their spare time, and proved to have a direct influence on students’ creativity. Helou opined that SNS use in socializing could bring together people with the same interests to broaden ideas that will later impact the development of knowledge and critical thinking of students [5], which in turn affects their creativity [7].

In addition, previous research has also emphasized the importance use of SNS in facilitating collaborative learning that can trigger critical thinking of students [7]. This is because the elements of collaborative learning reflected the characteristics of creativity [9]. For that reason, it can also be concluded that the relationship between the use of SNS and students’ creativity is indirectly influenced by the presence of collaborative learning.

The lack of research regarding the relationship between the online socialization activities using SNS (Social Networking Sites) with the development of Visual Communication Design students’ creativity (directly), and through collaborative learning activities (indirectly), encouraged this study. TAM (Technology Acceptance Model) model is needed as a basis for knowing students’ intention in using SNS.

2 Literature Review

2.1. Perceived Usefulness, Perceived Ease of Use, and Perceived Enjoyment.

TAM (Technology Acceptance Model) model has been used in several studies to evaluate the user’s behavior intention in using new technology [10], especially SNS, consisted of perceived usefulness, perceived ease of use, and perceived enjoyment.

2.1.1. Perceived Usefulness (PU)

As suggested in the TAM model, wherein the adoption of new technology, especially SNS, depends on the perceived usefulness. Previous studies had proven that perceived usefulness is one of the main determinants of students’ intention in using SNS, where perceived usefulness is defined as to what extent does an individual believes that a new technology or system would improve their work performance [6]–[8], [11].

H1: Perceived Usefulness affects the use of Social Networking Sites.
2.1.2. Perceived Ease of Use (PEU)

Perceived ease of use is defined as to what extent does an individual believes that a new technology or system would be easy to use (free of effort, easiness, less difficulty). The more trouble-free a new application is used compared to other technologies, the more likely it will be accepted by users. Past studies concluded that there is a positive relationship between perceived ease of use and the use of SNS because SNS has features and systems that are easy for students to understand, encouraging them to use it again [6], [12].

H2: Perceived Ease of Use affects the use of Social Networking Sites.

2.1.3. Perceived Enjoyment (PE)

SNS has been perceived to be personally fun and enjoyable to use among the students. Preceding researchers explained that the level of pleasure (perceived enjoyment) while using SNS had an impact on a person's behavior and desire to access SNS more often [6], [8], [13], [14], thus perceived enjoyment is significant in motivating students to use SNS.

H3: Perceived Enjoyment affects the use of Social Networking Sites.

2.2. Social Networking Sites Use (SU), Student’s Creativity (SC), and the Mediating Role of Collaborative Learning (C).

Theoretically, SNS had been revealed to have a positive relationship with students’ creativity, due to its social aspect. In addition, socializing can also encourage collaborative learning activities, which leads to knowledge sharing, thus motivate the students’ creative behavior. Late researchers have discussed the relationship between the use of SNS, students’ creativity, and collaborative learning. The results described that students who actively use SNS have more opportunities to interact with other people (socialize) and/or participate in the community through collaborative learning, which in turn will affect their creativity [6]–[9], [15], [16]. Therefore, SNS can improve students’ creativity directly and indirectly through collaborative learning.

H4a: The use of Social Networking Sites affects Collaborative Learning.
H4b: Collaborative Learning affects Students’ Creativity.
H4c: The use of Social Networking Sites (SU) affects Students' Creativity.
H4: Collaborative Learning mediates the relationship between the use of Social Networking Sites and Students’ Creativity.

![Model Diagram](image-url)
3. Methodology and Data Analysis

3.1. Data Collection.

The respondents were 206 Visual Communication Design students, each who were an active user of SNS (> 3 hours per day). The data collection was conducted online and distributed mainly in Universitas Multimedia Nusantara, followed by those that studied in Institut Kesenian Jakarta, Universitas Trisakti, Universitas Tarumanagara, Institut Seni Indonesia Yogyakarta, and Institut Teknologi Bandung. The respondents were classified into five characteristics: age, gender, education level, university, and time length in using SNS, while the main questions were evaluated using a five-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

3.2. Data Analysis.

PLS-SEM was used to analyze the quantitative data. This study used descriptive statistical analysis (frequencies) and inferential statistical analysis (outer and inner model). For outer model analysis, in terms of validity, the measurement uses the value of the factor loading (outer loading) with Average Variance Extracted (AVE). The factor loading value is greater than 0.60 (> 0.60). The Average Variance Extracted value must be greater than 0.50 (AVE ≥ 0.50). Reliability testing of the outer model was carried out using the Cronbach Alpha value with a value equal to or more than 0.6 (α ≥ 0.6) and Composite Reliability (CR) with a value equal to or greater than 0.70 (≥ 0.70), but in exploratory research 0.60 to 0.70 can still be found [17]. Inner model analysis was used to test the seven proposed hypotheses, using the t-value (T-value ≥ 1.96) and p-value (P-value ≤ 0.05) of the data result [18].

4. Research Result and Discussion

4.1. Research Result

The results of the descriptive statistical test showed that the majority of the respondents were 17-20 years old (81.07%), followed by those aged 21-24 years (17.96%) and the rest 0.98% are those aged 25 years and over. Most of the respondents are female (70.39%) compared to male with only 29.61% of the total respondents. Based on their education level, the highest ratio went to those who were Bachelor students, followed by Master and Ph.D. students, 86.89%, 12.14%, and 0.97% respectively. The participants were mostly students from Universitas Multimedia Nusantara (77.18%), followed by Institut Seni Indonesia Yogyakarta (10.19%), Institut Kesenian Jakarta (5.83%), Institut Teknologi Bandung (4.85%), lastly Universitas Trisakti and Universitas Tarumanagara which shares the same amount of ratio (0.97%). All of the respondents use SNS more than 3 hours per day.

Using Smart-PLS, Table1 illustrates the result of the inferential statistical analysis, showed that each of the variables is valid and reliable.

**Table 1. Results of Validity & Reliability Testing and Factor Loading**

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>AVE</th>
<th>α</th>
<th>CR</th>
<th>Highest Factor Loading Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Usefulness (PU)</td>
<td>0.524</td>
<td>0.835</td>
<td>0.868</td>
<td>PU2 = 0.787</td>
</tr>
<tr>
<td>Perceived Ease of Use (PEU)</td>
<td>0.564</td>
<td>0.804</td>
<td>0.865</td>
<td>PEU6 = 0.831</td>
</tr>
<tr>
<td>Perceived Enjoyment (PE)</td>
<td>0.510</td>
<td>0.839</td>
<td>0.879</td>
<td>PE6 = 0.811</td>
</tr>
</tbody>
</table>
The seven hypotheses of this study were all accepted except H1. Table 2 presents the t-value and p-value of the variables’ engagements.

### Table 2. Results of T-value and P-value

<table>
<thead>
<tr>
<th>Variable Engagement</th>
<th>T-Value</th>
<th>P-Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>C -&gt; SC</td>
<td>6.501</td>
<td>0.000</td>
</tr>
<tr>
<td>SU -&gt; SC</td>
<td>5.816</td>
<td>0.000</td>
</tr>
<tr>
<td>SU -&gt; C -&gt; SC</td>
<td>4.379</td>
<td>0.000</td>
</tr>
<tr>
<td>PU -&gt; SU</td>
<td>0.397</td>
<td>0.691</td>
</tr>
<tr>
<td>PEU -&gt; SU</td>
<td>2.198</td>
<td>0.028</td>
</tr>
<tr>
<td>PE -&gt; SU</td>
<td>3.852</td>
<td>0.000</td>
</tr>
<tr>
<td>SU -&gt; C</td>
<td>6.274</td>
<td>0.000</td>
</tr>
</tbody>
</table>

### 4.2. Discussion

This research demonstrated that each of the discussed variables was well represented by its indicators. The data results showed that H1 was rejected and contradicted with the preceding studies [6]–[8], [11], reporting that there was no relationship between perceived usefulness and SNS usage among the Visual Communication Design students. We found that the indicator which most represents variable perceived usefulness is its function to achieve a better work performance, while in this study, the students use SNS mainly to socialize, not to improve performance in completing work or assignments. Past studies opined that the determinants affecting the students’ perception of the SNS’s usefulness can vary between individuals. In general, SNS might be considered useful for them, but not necessarily as a specific tool for work-related purposes [12]. H2 and H3 are accepted, suggested both perceived ease of use perceived enjoyment had a positive and significant relationship with SNS usage among the undergraduates, in line with the preceding researches [6], [8], [14]. H4a, H4b, H4c, and H4, suggested a significant relationship between SNS usage, collaborative learning, and students’ creativity, consistent with past researches [6]–[8], [15], [16]. The outcomes of this study presented that the willingness of Visual Communication Design students to interact with people with the same interests will encourage them in developing new skills and acquiring new knowledge, obtained through collaborative learning. This study also emphasized the terms of creativity, measured as individuals who are able to find or create new, fresh, and original ideas or creation, and report the direct effect of SNS usage on students’ creativity, where the willingness to connect with new individuals who have the same interest will directly create discussion activities that led to the creation of novelty ideas. Collaborative learning can also mediate SNS usage and students’ creativity, but the impact was not as strong as the direct impact. This is because collaborative learning is an activity that is conducted in an environment that is deliberate and carried out regularly or repeatedly with the same members to learn certain topics, solve problems, and complete tasks [19]. The use of SNS without the need for collaborative learning will be freer and more flexible, so that students can discuss any topic or subject indefinitely, thus supporting the development of students’ mindset that promoted innovation and originality.
5. Summary

In conclusion, this study revealed that perceived usefulness wasn’t deemed significant among Visual Communication Design students related to SNS usage. On the other hand, the undergraduates use SNS mostly to socialize and considered SNS to be easy to use and enjoyable. This study also highlighted that although collaborative learning had been found to play a role in the positive relationship of SNS usage and the Visual Communication Design students’ creativity, its impact was not critical. Thus, universities are expected to consider collaborative learning activities through the use of SNS in the Visual Communication Design teaching system as a way to increase students’ creativity.

6. Implication and Suggestion for Future Research

The implication of this study is that Education Institutions or Universities should collaborate to design applications or sites that have SNS features or at least implement the existing SNS that is considered to have met the criteria needed in the VCD students learning process, which can support collaborative learning approach, interactive, and in addition, support feedback/sharing among students, lecturers, as well as practitioners.

Regardless of the important findings, that are also some suggestions that need to be considered for future studies. For instance, this study was conducted during the Covid-19 pandemic. Therefore, it is advised to also discuss the influence of external conditions on Intention to Use, as it may bring different research outcomes in the future. Second, future research is suggested to investigate variables outside our model, especially other mediator variables besides collaborative learning that could affect the relationship between SNS usage and students’ creativity. Third, it might be interesting to conduct a study that further discusses the cognitive and hedonic aspects of SNS usage. Finally, further investigation regarding other technology adoption beyond SNS related to improving Visual Communication Design learning system suitable in Indonesia will be of great value.

7. Reference


The Attitude toward The Programmatic Advertising on Click-Through Intention

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Abstract. A new system called programmatic advertising has had a very high adoption rate. The problem is the lack of advertisers' education about programmatic advertising. The majority of those are due to retargeting or acquisition. Retargeting is an output from processing user personal data. This study was conducted on 110 respondents using simple random sampling that used a quantitative approach and SEM-PLS data analysis. This study explains 55.4% of the variance on click through intention. The result of modelling and hypothesis test is discovering the variables that perform the most to increase the attitude and intention of user through personalized advertising. The conclusion is advertiser most likely consider the attitude variable towards click through intention. The second highest level of importance is the intrusive variable on attitude. The third highest importance value is indirect surprise to click through intention through attitude. And the forth is surprise to personalization perception.

Keywords: programmatic advertising, personalised advertising, click through intention, personalization.

1 Introduction

Programmatic advertising is a digital advertising ecosystem that has a more automated system compared to non-programmed or traditional digital advertising. Programmatic advertising continues to grow until now and shows its popularity with the most ad spend. In the US and China, programmatic advertising is the largest percentage of advertising spending in the world. Indonesia is in the top 18 countries with a fast growth program. In 2019 and 2020, Indonesia is the country with the number 1 fastest growth program among 17 other countries [1]

However, most advertisers struggle with their understanding of programmatic advertising and are therefore hesitant about adopting it. Other biggest problems are advertisers' fear of ad fraud, complex systems, and a lack of understanding of the benefits of programmatic advertising itself. Among these problems, advertisers in adopting programmatic advertising have the biggest marketing goals on the acquisition / retargeting side [2]. It is stated that 90% of advertisers use data to target their advertisements [3]. This indicates that serving relevant or personalized advertisements is very important for advertisers, which of course can be supported because of the ease of programmatic technology. Personal data regarding shopping habits is the data most approved by internet users to access at least 45% [4]. So this is a consideration for companies to
think about consumer privacy data along with personal ad targeting. This consideration has been increasingly recognized by many companies in the last 2 years [5]. But can using personal targeting in programmatic advertising increase conversions in every ad? In fact, even though consumers feel that personal targeting in advertisements helps them, their desire to make clicks is very small compared to accidental clicks [6]

2 Literature Review

2.1 Theoretical foundation and Research framework

Consumer behaviour and marketing strategy theory will be used as the theoretical foundation of this study. A marketer also talks about consumer behavior in terms of marketing a brand with the aim of a marketing strategy being carried out. Along with the increasingly widespread use of the internet, it influences in encouraging online transactions to expand and is used as a forum for one of the promotional mixes, namely advertising media for marketed products [7]. Advertisers will place their ads on potential publishers that have a lot of visitors in accordance with what has been strategic [12]. This is how they make a strategy. In general, this consumer analysis has a framework consisting of three elements, namely affective and cognitive, environment, and consumer behavior. The third element is used to understand and analyze consumer behavior that can be applied in a marketing strategy [9]. Affective and cognitive are talking about the feelings of a consumer and how they design a marketing based on the results they feel. In Plutchick's theory of emotion wheel, surprise is one of the 8 main emotional parts. Surprise is an emotion that is between distraction and amazement and the opposite of the emotion of anticipation [10]. The most obvious type of promotion is advertising. This promotion strategies affect consumers' affective and cognitive responses and their overt behaviors. Consumer behavior affects a consumer's intention to act more like a decision to buy which has always been the main goal in marketing a product.

In the research of [11], discussing the conditions of programmatic type advertisements that have a supportive system in advertising personalization. This research was conducted in the UK. The variables raised are emotion, perception, concern, attitude, and click through intention. The conclusion is that emotion (surprise) has a positive effect on perceptual values (timeliness, personalization, & relevance) but concerns about privacy and intrusiveness have a negative effect on attitudes towards male gender. So that for female gender, surprise has a positive effect on click-through intention.

If the previous research is related to the theoretical basis that has been described, emotion which is an affective is examined and uses an emotion called surprise which is one of the 8 main emotions[10]. Surprise is used because it has an unexpected meaning which corresponds to the case of personal advertising in programmatic advertising. Personalization perception, privacy concern, and intrusive concern are real forms of cognitive perception. Affective and cognitive influence an attitude and intention which in this study is attitude toward advertising and click through intention as a consumer behaviour. Advertising as the environment affects those other two aspects as the theory stated. Interconnection between affective cognitive, environment, and
behaviour to create solution of communication process in marketing strategy. The advertising as one of the promotion types has a big role on this research particular as a digital advertising [9].

We suggest our research methodology in Figure 1 based on customer behavior and marketing strategy as well as previous studies with adoption. This research includes six variables: surprise, personalization experience, privacy concern, invasive concern, attitude toward ads, and intention to click through.

![Research Framework](image)

**Fig. 1. Research Framework**

### 2.2 Hypothesis development

We suggest nine hypotheses based on theoretical foundations, review relevant literature, and discuss some of the points raised above. The following is the nine hypothesis:

- **H1**: Surprising ads have a positive effect on their perception of personalized advertising;
- **H2**: A surprising ad has a positive effect on privacy concern;
- **H3**: Ads that are surprising have a positive effect on intrusive concerns;
- **H4**: Surprising ads have a positive effect on their attitude;
- **H5**: Perception of personalized advertising has a positive effect on their attitude;
- **H6**: Privacy concern has a negative effect on their attitude with the perception of personalized advertising as a mediator;
- **H7**: Intrusive concern has a negative effect on attitude;
- **H8**: Attitude has a positive effect on click-through intention;
- **H9**: Attitude has a positive effect on click-through intention.

### 3 Methodology and Data Analysis

#### 3.1 Research Method

This study has 6 latent variables, namely surprise, personalization perception, privacy concern, intrusive concern, attitude and click through intention. 4 variables of which have four indicators and 2 other variables have 3 indicators so that the total indicators in this study are 22. Therefore 22 * 5 is 110, which means that the number of respondents needed in this study is 110 respondents as the research sample. This sample calculation method is calculation according to...
Hair with a minimum of 100 respondents [12]. The sample technique is using simple random sampling and there is no sampling frame. This study uses Structural Equation Model (SEM) analysis techniques with the help of SmartPLS. This study wants to test the previously formulated hypotheses of several variables from behavior management theory to analyze the factors that affect click through intention.

3.2 Data Analysis

Based on the collected data (data source = 110 participants), several data analysis procedures were performed using Smart PLS version 3. First, demographics information (n = 110) was analyzed, for instance, there were 44 males and 66 females. Second, the outer model was performed on variables to confirm that all items were reliable and valid to be used for further data analysis. We followed SEM rule of thumb, such as factor loading > 0.7, AVE > 0.5, cross loading > 0.5, composite reliability > 0.7 [10]. Our outer model results showed that all the requirements were met, all items were considered reliable and valid. Third, inner model was performed to the test hypothesis 1-9. The results showed some significant results.

The relationship between surprise and personalization perception has a t value of 4.009 > t table 1.645 with a probability value of 0.000 < p value 0.005 and has an original sample value of 0.386. Therefore H1 is concluded as acceptable. The relationship between surprise and privacy concern has a t value of 0.875 < t table 1.645 with a probability value of 0.382 > p value 0.005. Therefore, it is concluded that H2 can be rejected. The relationship between surprise and intrusive concern has a t value of 0.727 < t table 1.645 with a probability value of 0.468 > p value 0.005. Therefore, it is concluded that H3 can be rejected. The relationship between surprise and attitude toward advertising has a t value of 3.846 > t table 1.645 with a probability value of 0.000 < p value of 0.005 and an original sample value of 0.303. Therefore, it is concluded that H4 is acceptable. The relationship between personalization perception and attitude has a t value of 4.102 > t table 1.645 with a probability value of 0.000 < p value 0.005 and has an original sample value of 0.319. Therefore, it is concluded that H5 is acceptable. The relationship between privacy concern and attitude has a t value of 0.688 < t table 1.645 with a probability value of 0.492 > p value of 0.005. Therefore, it is concluded that H6 can be rejected. There is no relationship between the privacy concern variable and attitude mediated by personalization perception which has a t value of 0.170 < t table 1.645 with a probability value of 0.865 > p value 0.005. Therefore, it is concluded that H7 is rejected. The relationship between intrusive concern and attitude has a t value of 5.095 > t table 1.645 with a probability value of 0.000 < p value 0.005 and has an original sample value of 0.357. Therefore, it is concluded that H8 can be accepted. The relationship between attitude and click through intention has a t value of 16.797 > t table of 1.645 with a probability value of 0.000 < p value of 0.005 and has an original sample value of 0.745. Therefore, it is concluded that H9 can be accepted.

This research has hypothesis about mediating effect of personalization perception between privacy concern to attitude toward advertising. There are probability other variable has a mediating effect. Testing the effect of the mediating variable can be done if the main effect of the independent variable on the dependent variable is significant and it would be stated as a mediator if the p value is <0.005 [13]. That is why the mediating hypothesis is not tested anymore because it is not significant. Table 1 is the main effect of the research that results significant
effect and define are they having a mediating effect. There are variable that defined as a mediator. First, personalization perception that mediated the impact of surprise to attitude toward advertising. Second, attitude toward advertising has a mediating three effects, those are intrusive concern to click through intention, personalization perception to click through intention, and surprise to click through intention. Last is personalization perception and attitude toward advertising mediated the impact of surprise to click through intention.

4 Research Result and Discussion

The main finding of this study is that the attitude toward advertising or a consumer's action towards advertising has the greatest influence on click-through intention or consumers' desire to click on personal advertisements they encounter. Consumer actions such as being interested in advertisements, reading or watching advertising material, not closing advertisements, not using ad block, not reporting on advertisements encountered are some examples of consumer actions that support increasing consumer desire to click on these advertisements. Hence, the implication is that it is very important to consider an advertisement that can make advertisements given a good attitude by consumers and determine an appropriate metric to read an attitude from consumers.

The second major finding is in increasing consumer attitudes towards advertising, the main factor that must be considered and the biggest influence compared to other variables in this study is whether the advertisement makes consumers feel disturbed. This variable is larger than consumer perceptions of personal advertising and consumer concerns about privacy data for advertising. This finding indicates that to imply consumer attitudes towards personal advertising is to serve ads that are not distracting to consumers. With this finding, advertisers need to understand and limit an annoying ad by sorting out previous ads that had low click performance from being used again in future ad servings. In addition, relevant ad placements fall into the category of non-disruptive ads [11]. So that personal ads that indicate a relevant ad are an important factor in supporting ads so that they don't interfere with a certain personal level so that it will create good attitude by consumers.

The third finding is that there is an indirect effect between surprise and click through intention by attitude toward advertising that has the highest value than other mediating variables. A consumer's affection affects their desire to click on an ad. By creating an unexpected ad or surprise effect in the ad. This means that creatives play a big role in creating predictable ads for consumers. By performing A/B testing of various types of creative advertising, ad placement, and levels of personal targeting data, advertisers can find an unexpected ad standard for consumers that can affect their attitude as well as influence their desire to click.

The next finding is if this is the first advertisement that will be broadcast so that it does not have any history of what kind of annoying advertisement it is, it can be by increasing the perception of good personal advertising to consumers. The role of creating a good perception in personal advertising is to consider the contextual message in the material whether it is really useful for the reader so that the importance of a copywriter to make advertisements is very
necessary and placing advertisements that are in accordance with the cognitive demands of consumers such as the example of a consumer who has no intention. Those that are high for converting a product or are not in the consideration category in the marketing funnel will not be attracted to ads that have a persuasive message to buy.

5 Implication and Suggestion for Future Research

In practical terms, advertisers have the main goal of increasing the desire of users to click on advertisements displayed by increasing their attitude. In digital advertising, metrics to measure the success of an ad's performance are very important and very reliable by all sides of the digital advertising ecosystem. Clicks can be measured by the number of clicks received or click through rate (CTR) on each campaign but not by click through intention. So the researcher describes an attitude conversion as a metric which means that a user pays attention to the ad before clicking, such as watching a video advertisement of 50%, 75%, or until it runs out, or the percentage does not click on the close button and so on. So far, the attitude metric that can be tracked is the length of the video watched. At least a video ad is seen as much as 50%, it can be said that the user has a good attitude towards the ad.

Advertising that is considered annoying is the biggest factor in this study that affects attitude. Therefore, advertisers must filter the inventory of advertisements that are selected to serve their advertisements, whether that type of inventory is considered disturbing or not. Indirectly, the creation of creative content affects their desire to click on the ad. Ads that contain unexpected elements in this case personal ads are not. It is said that ads that are contextually too personal are less attractive than ads that are not clearly relevant to the user. Advertisers also need to pay attention to the color factor of the material according to the user's psychology, relevant placement, and the information in the material is adjusted to the level of user involvement in order to influence a good user's attitude.

Apart from that, a good perception can be done with a placement that has a good reputation and content material in accordance with the user's cognitive demand, where if you want to get a high attitude from the user, place an ad in media that has a high user's cognitive demand, such as in search engine management (SEM). Google or display marketing that is targeting the consideration category keywords.

In relation to programmatic, advertisers consider programmatic for the reason of retargeting which utilizes processed user personal data so that the advertisements displayed are in accordance with what the user has been looking for. In fact it is stated by practitioners that retargeting is not a valid impact drive even though it is the metric it offers. 90% of companies want to do more consumer personalization but less than 20% do. Perhaps this is due to mixed results between previous studies on retargeting and general subject uncertainty [14].

Retargeting / acquisition may be the main goal in marketing, specifically the reason why they use programmatic, using personalization. However, the accuracy of the data may create uncertainties regarding the efficiency between actual and retargeting technologies in the past and is something that continues to be developed to improve transparency of data and actual users. Cross device matters also need to be considered and direct retargeting compared to retargeting with time lag results in better performance.
Compared to the previous research. This research finds non intrusive is the main factor of affecting attitude and click through intention in Indonesia. It answers to provide a better understanding of how consumers' perception to personalized online ads can predict their ad click intentions, but there are still numerous areas and gaps left uninvestigated. About 55.4% of the variation in click-through intentions is explained. The previous studies click-through intentions is explained under 50%.

The following are suggestions for further studies that are considered to be able to complement and enhance the results of this study. Click through intention variable is influenced as much as 55.4% by the variables in this study. So that there are still 44.6% of other variables that influence click through intention that must be explored. Likewise, the attitude variable was influenced by 44.7% by the variables in this study. So that there are still 55.3% of other variables that influence attitude that need to be explored. In this study only limited consumer desire to click on an ad. This research results in no influence from privacy concern. The exogenous variables in this study are emotion and concern. Parts of emotion and other concerns can be explored to complement the influence on attitude and click through intention.

Reference

[10] Plutchik R. Emotions and Life: Perspectives from Psychology, Biology, and Evolution.
Do service quality and corporate image affect customer satisfaction and loyalty?

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Abstract. Customer loyalty is an important part of business performance. Many companies hope to keep their customers for a long time, even if it is possible forever. This research seeks to examine the function of service quality and company image to influence customer loyalty in the use of Islamic banking in Indonesia and the importance of satisfaction in mediating the quality of the services and corporate image in influencing customer loyalty. Some 283 people were picked utilizing the purposive sampling method as samples. The hypothesis of this study was tested via Structural Equation Modeling (SEM). The results reveal that customer loyalty is affected directly by service quality and company image. Furthermore, the results of this study demonstrate that customer loyalty indirectly impacts service quality and business image. This discovery is consistent with earlier results. This study nevertheless showed that the influence of quality of service and corporate reputation on customer loyalty is not entirely mediated by customer satisfaction. This is demonstrated by the direct effects on customer loyalty of quality of service and the business image. To increase customer loyalty, Islamic banking must improve service quality, corporate image, and customer satisfaction.

Keywords: service quality, corporate image, customer satisfaction, customer loyalty

1 Introduction

The development of Islamic banking in Indonesia is a manifestation of the public's demand for an alternative banking system. Besides providing good banking/financial services, it also fulfills sharia principles. As one of the major Islamic countries, Indonesia should become the pioneer and center for developing Islamic finance and banking globally. This is not an impossible dream because Indonesia's potential to become a core player in Islamic finance and banking is huge. With the majority of Indonesia's population being Muslim, the opportunity for the market share of Islamic banks is very large and has a great opportunity to develop, which will make the competitive climate in the Islamic banking world more competitive. In other words, Islamic banks will be required to be able to attract public interest. The high level of competition, and increasingly selective consumers, need companies to have a strategy to attract consumers. Islamic banks must be able to increase competitiveness and provide satisfaction to customers to maintain customer loyalty.

Consumer sentiments regarding Islamic banks may impact the improvement of service quality and customer satisfaction in Islamic banking. Attitudes as an inner state of the individual which impacts individual decisions to show conduct toward items, people, or events [3]. The
sentiments regarding Islamic banking contain, according to [5], a degree of preference by clients to choose Islamic banking, the selection of "sharia" labels, Islamic banking products are significant for consumers, and consumer choice is the use of Shari banking goods, and Islamic banking products are used in a close-knit environment.

Regarding Islamic banking's commitment to customer pleasure, client happiness also depends on service quality. Quality of service is characterized by a contrast between expectations and quality perceptions [6]. [3] have proven that greater customer satisfaction by enhancing the quality of service will keep customers loyal. The key to building client loyalty is customer happiness. [7] say satisfaction influences consumer loyalty directly. Customer satisfaction contributes to several key characteristics, such as customer loyalty, corporate reputation, price elasticity decrease, future transaction costs reduction, and increased staff effectiveness and productivity [4].

Customer experience is also considered to be one of the top indications of future revenues [8]. Meanwhile, according to [9], there are many benefits received by companies with the creation of high customer satisfaction, namely, in addition, To increase customer loyalty but also avoid the turnover of clients, lower consumer price sensitivity, reduce marketing failure costs, reduce the operational expenses of adding subscribers, increase advertising efficiency and enhance the reputation of the company.

Likewise, the corporate image is calculated to influence customer loyalty. The awards the company receives because of its advantages can provide satisfaction to customers, in addition to bringing trust to customers. The more awards you get, the more satisfied and trusting your customers will be, which in turn makes them loyal customers. [10] say that corporate images play a role in marketing a firm since they may impact consumer perceptions, expectations and ultimately influence customer satisfaction and loyalty. In fierce competition, the main thing that must be prioritized is customer satisfaction, so that the company can compete, survive, and dominate the market. The success of marketing a product is not enough just to offer the various advantages that the service has. The most important thing is whether the provision of these products is following the wishes and can meet customer needs, thereby increasing customer value [11].

Several studies on customer loyalty have provided empirical evidence that the antecedent variables of loyalty affect customer loyalty, including [12] research on Turkish aviation industry customers, and [13] on e-commerce settings across two cultures, Malaysia and Qatar. Both of these studies indicate that customer satisfaction is a determining factor for high customer loyalty. Customer loyalty is a measure of customer attachment to a product. This measure can provide an overview of whether or not a customer may switch to another service, especially if there are changes in the service, both regarding service quality and other attributes. Many factors affect customer loyalty, one of which is customer satisfaction.

The preceding description demonstrates that organizations need to not only enhance their service quality and business image to generate consumer loyalty but also boost customer happiness in keeping loyalty to their products. This study seeks to investigate the impact of quality service and corporate identity on client loyalty and investigate the function of satisfaction in moderating the influence of quality of service and business images on client loyalty.

2 Literature review
2.1. Customer loyalty

In many different ways, customer loyalty may be described. Loyalty to the customer is the consumer's readiness to shop or to cooperate several times with brands, which is the outcome of good encounters with the customer, contentment, and quality of service. [14]. According to [15], loyalty is the commitment of a consumer to work with a company which has an impact on buying frequency and repeating the use of the services of that company. [11] believe that loyalty remains the customer's faith in a firm or service. If providers make consumers believe that they give priority to all valuable ideas and fulfill them, customer loyalty lasts a long time. Faithful consumers contribute not just to growth but also a competitive advantage and company value. This helps clients to buy more stable products. Loyal consumers always utilize a product or provider; other items and companies are also recommended. In short, using the word of mouth approach of devoted consumers, companies save publicity money [14].

Customers' loyalty is their commitment to continuing to subscribe or buy selected items constantly, even though the circumstance and marketing efforts may change their behavior. [16]. Customer loyalty is an important part of a company's survival or brand. Many companies hope to keep their customers for a long time, even if possible forever. If customers can maintain their loyalty, then the company can save costs to get new customers. [17] says customer loyalty is prepared to continue buying in an enterprise for a long time and regularly use a product or service and recommends it willingly to friends and other firms. The company's ability to retain customers and create obstacles for them not to move to companies is one of the keys to a company's success in competing in the market. Consumer loyalty is one of the major success elements in sustained competitiveness for organizations [18].

2.2. Service quality

Service quality is described as a notion that correctly reflects the essence of service performance, i.e. comparison with excellence in customer service meetings [20]. [21] asserts that the overall perception of consumer quality is that the arguments and services provided are inferior/superior. [22] indicate that the degree of service quality is anticipated to match the customer's expectations.

Then [20] stated that two factors affect the perceived service quality. If the service got or felt meets the expectations, the quality of the service is said to be acceptable and satisfactory. [20] also proposed that the overall service quality is evaluated based on five dimensions, namely (1) Tangibles related to physical facilities, devices, personal appearance, decoration, and communication materials. (2) The capacity to deliver services precisely and reliably as promised is reliability. (3) The readiness to assist clients and to offer rapid on-demand services is responsiveness. 4) Knowledge of the abilities of employees to provide consumers with trust and confidence is assured and appreciated. (5) Empathy includes personal care and attention to customers.

Technological advances, improvements in communication systems, and human resource development have been widely used by the business sector as tools to improve services, likewise, the banking sector hopes that advances in technology and communication can improve services to customers. Competition to attract and retain customers is increasing, but the competition is still using quality services to increase satisfaction [23].
The key to the success and longevity of a commercial organization is the excellent service offered to clients, according to the views [20]. For the last two decades, the quality of services has been the major purpose of every company, which means that management must grasp the dimensions and measurement of quality of service. Quality of service is the appraisal of excellent service by the consumer [21]. Slack et al. (2020) argue that quality of service is considered unsatisfactory, quality of service is crucial for customer satisfaction and loyalty, and the link between the quality of the service and customer loyalty is mediated by customer contentment. As described in Tahanisz and Shokuhyar (2020), quality of service is the difference between reality customer performance. Many publications also see service quality as a key part of the consumers' brand structure [23]. Nearly everyone believes that customer loyalty is achieved with great quality. [25] investigate and recognize the favorable impact on customer loyalty of the process of creating quality of service. The impact on customer loyalty of service quality is confirmed by [26]. The following hypothesis may be developed based on the description above:

H1: Service quality has a positive effect on customer loyalty
H2: Service quality has a positive effect on customer satisfaction

2.3. Corporate image

Image is a reward that the firm receives from the benefits that exist in the firm, such as the firm’s capacities to continue developing so that it may continue to produce new products to suit the requirements of consumers [33]. Kim and Hyun (2011) argue that corporate image is the view or perception of the company by people both inside and outside the company. [34] stated that corporate image is a public view of a company that is considered good or not viewed globally on matters such as openness, quality, and others so that it can be said to be a view of the company's steps. The corporate image is regarded to impact the perception of customers in product offers. Thus, the degree of the corporate image will influence behavior [36]. [10] suggest that image plays a part in a corporation’s marketing, as it may impact consumer perception and expectations about products or services supplied and eventually affect customer satisfaction and customer loyalty.

The results of research by [31] show that corporate image significantly affects customer satisfaction. A positive and good corporate image can increase satisfaction and loyalty [36]. Research that has been conducted by [11] states that company image acts as an important and impressive factor in the association of quality, customer evaluation, customer satisfaction, and customer loyalty. They also found that corporate image can act as a filter in customer evaluation of the quality, value, satisfaction, and repurchase of a brand [31]. The following hypothesis may be developed based on the description above:

H3: Corporate Image has a positive effect on Customer Satisfaction
H4: Corporate Image has a positive effect on Customer Loyalty

2.4. Customer satisfaction

Customer satisfaction is characterized as a total psychological statement between emotions and expectations that arise from consumers' feelings to anticipate and accumulate previous purchases to meet everyday needs [17]. [39] meantime, after evaluating the performance of a product with what is expected, describe customer satisfaction as a person's sense of enjoying or hating a product. Meanwhile, [40] have said that customer satisfaction surpasses consumer demands if the
value perceived is high. [41] define customer satisfaction as an evaluative assessment after selecting regarding the purchase of a particular product will achieve Customer satisfaction if expectations match the accepted reality.

Greater customer satisfaction through enhancing the quality of service will promote client loyalty [40]. The greater happiness of customers, the greater the degree of commitment (Ball, Simões Coelho, and Machás, 2004). Customer satisfaction is directly related to customer loyalty [42]. Almost every prior study shows the considerable influence of customer satisfaction on customer loyalty, such as [29], [32], [30], [43] and [9]. The following hypothesis may be developed based on the description above:

H5: Customer satisfaction has a positive effect on customer loyalty

Based on the above hypothesis, the conceptual framework of this study can be described as follows:

![Conceptual Framework](image)

**Fig. 1. Conceptual framework**

### 3 Methodology and Data Analysis

Islamic banking, in particular Islamic commercial banks, is the aim of this research (ICB). The consumers of Islamic banks are therefore the population of this study. Given the very large population of this study, the researchers limited the research areas to Yogyakarta, Jakarta, Bandung, and Surabaya. A non-probability sampling procedure was followed to choose the sample of 300. The study used the purposeful sampling method, a methodology that was not likely to be a way of sampling, in which the researcher determined the sample by determining certain criteria/features following the research objectives. Customers that know and use Islamic banks' services, who have become clients of Islamic banks for at least six months, are specifiable in this study. The analysis comprised only 283 out of 300 respondents who participated in this study.
4 Research Result and Discussion

As indicated before, 283 participants participated in the survey and deserved additional analysis. The majority (58 percent) of the responders participating were female and the remainder were male. The rest are more than 30 years old, some between the ages of 20 and 30. Most (48.4 percent) are employees of the private sector. The remainder works like students, officials, teachers, and so on.

In addition, the investigation was used Structural Modeling Equation (SEM) and the AMOS software 24.0. The validity and reliability of the data used in the study are tested first before testing the hypothesis. The indicator is stated as valid by reference to [44] if the t value is larger or equal to 1.96 and when the dependability of the variable is larger or equal to 0.50, it is deemed reliable. All indicators or questions are certified valid and trustworthy in the measurement of variables based on these standards.

In addition, the investigator conducted a structural test utilizing the AMOS 24.0 software with accurate and trustworthy data to assess the hypothesis of this study. Figure 2 shows the influence of exogenous factors on endogenous variables and the t value of each outcome.

The statistical relevance of the final structural model reveals that the model represents the results of this investigation extremely well. This is proved by the $X^2$ of 412.2 with freedom of 393, then Normed $X^2$ with 1.05, which shows that the model has good conformance. This is proved by the value of the model. The RMSEA value of 0.02 is supported by the TLI and CFI values of 0.99.

In addition, the result with this study model is 3.78 of the Expected Cross Validation Index (ECVI). The ECVI for the saturated model is below 6.07 for this type of model. This shows that the same sample in the same demographic may reproduce this study model. The coefficient of regression and the importance of the effect between hypothesis and variables are provided in Tables 1 of this study.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Coefficient of Regression</th>
<th>t-value</th>
<th>Sign</th>
<th>information</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: Service quality has a positive effect on customer loyalty</td>
<td>0.38</td>
<td>5.08</td>
<td>0.0001</td>
<td>accepted</td>
</tr>
<tr>
<td>H2: Service quality has a positive effect on customer satisfaction</td>
<td>0.44</td>
<td>4.00</td>
<td>0.0001</td>
<td>accepted</td>
</tr>
<tr>
<td>H3: Corporate image has a positive effect on customer satisfaction</td>
<td>0.27</td>
<td>5.82</td>
<td>0.0001</td>
<td>accepted</td>
</tr>
<tr>
<td>H4: Corporate image has a positive effect on customer loyalty</td>
<td>0.28</td>
<td>5.32</td>
<td>0.0001</td>
<td>accepted</td>
</tr>
</tbody>
</table>
The goal of this article is to examine the role played by customer loyalty and the role played by service quality and business image in affecting customer loyalty. The function of service quality and company image and its impact on satisfaction and loyalty has generally been investigated, but the purpose of Islamic Banking Services has not been substantially involved.

The first goal is to identify the direct influence that quality of service and business image has in affecting client loyalty. The quality of service may be enhanced by raising the service quality to five dimensions, namely: (1) physical facilities, equipment, personal appearance, decorating, and communication materials tangible. (2) The capacity to deliver services precisely and consistently as claimed is reliable. (3) The readiness to assist clients and to offer rapid on-demand services is responsiveness. (4) Ensuring the understanding and awareness of the capabilities of employees to serve consumers with trust and confidence. (5) Empathy comprises personal attention and the care of corporate images may be increased by producing benefits, such as a business's capacity to continue developing itself so that the firm may continue to produce new products to fulfill customer requirements [20]. The corporate image will affect stakeholder behavior so that the company tries to develop and manage the corporate image with several reasons that the company image can: (a) encourage sales, (b) build goodwill (goodwill), (c) establish an identity for employees, (d) influence investors and financial institutions; (e) promote excellent relationships with the community (company), government, special interest groups, other leaders of opinion; and (f) achieve success in competition [35]. The second purpose is to assess the function of satisfaction in affecting customer loyalty as a mediator of service quality and business image.

Data analysis was carried out to test the effect of two or more variables based on the rules of the statistical method. The statistical analysis tool in this study uses Structural Equation Modeling (SEM) with a two-stage approach, namely measurement model analysis, and structural equation model analysis. Measurement model analysis is a modeling process that is directed to investigate the unidimensional of observed variables which explain a latent variable and explain construct validity and reliability. Meanwhile, the Structural Equation Model analysis explains the relationship patterns between constructs [45].

From the results of model testing, all variables are variables that meet the requirements as variables that support the research model. Based on data analysis and hypothesis testing, it shows that all the hypotheses in this study are supported by data. The hypothesis that is supported shows that the findings are following the existing theory. The regression coefficient of the effect of service quality on loyalty shows a significant direct effect of service quality on loyalty. This finding
illustrates that when consumers experience high service quality, at the same time customer loyalty increases. This finding is consistent with the results of research by [32] and [30]. The regression coefficient of the influence of corporate image on loyalty also shows a significant direct effect of corporate image on loyalty. This finding illustrates that when consumers perceive a high corporate image, at the same time customer loyalty increases. These findings support the research results of [31].

The regression coefficient of the effect of service quality on loyalty through the mediation of customer satisfaction shows a significant effect. These findings indicate that good service quality will increase satisfaction which in turn will increase loyalty. These findings support the research results [30]. Likewise, the regression coefficient of the effect of corporate image on loyalty through the mediation of customer satisfaction shows a significant effect. These findings indicate that corporate image will increase satisfaction which in turn will increase loyalty. These findings support the results of research by [29] and [32].

5 Implication and Suggestion for Future Research

In general, the results of this study indicate that the loyalty of the customers is not only driven by service quality but also customer satisfaction that mediates quality of service. The corporate image also intrinsically and extrinsically impacts customer loyalty via customer satisfaction mediation.

This study contains various shortcomings which researchers interested in investigating consumer loyalty need to solve, particularly about identifying research subjects. Like several previous studies, this research conducted this research on Islamic Commercial Banks to represent the Islamic banking market. Further study needs to employ Islamic Credit Bank institutions to examine the consistency of results throughout the markets to gain widespread conclusions on the Islamic banking sector.

References


The Influence of Social Media Marketing Activity and Social Media Influencers on Instagram on Purchase Intention at Fashion Brand X in Indonesia

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Abstract. With the rapid development of the digital world, social media has become one of the means to carry out marketing activities. Social Media Marketing Activity (SMMA) and social media influencer are expected to be able to influence consumer buying interest in brands. This study aims to examine the influence and the significance of SMMA and social media influencers on Instagram to the purchase intention of Brand X. This research used quantitative method and purposive sampling method was used to collect the data. The data was analyzed with SmartPLS to examine the relationship between variables. The results of the study indicate that SMMA has a significant effect on purchase intention both directly and indirectly, while social media influencers have a significant effect on purchase intention directly but do not indirectly. Results of this study are expected to help fashion brand X to prioritize their online marketing activities on Instagram.

Keywords: Social Media Marketing Activity, Social Media Influencer, Purchase Intention, Brand Equity, e-WOM

1 Introduction
The development of internet technology and online marketplaces in Indonesia have shift consumer behavior from only making offline purchases to online purchases. According to the survey that was conducted by Jakpat in 2019, 60.5% of respondents prefer to shop online rather than offline due to the speed and efficiency of the transactions, as well as its cheaper price compared to the offline store [1]. One of the business that needs to adapt is fashion brand X. Fashion brand X started as an offline store and focus on selling woman’s clothing, then in 2016 the brand started to sell their products in their website, Tokopedia and Shopee. According to a report from Hootsuite in 2020, fashion category has the most transactions in e-commerce in Indonesia that reached 4.79 billion dollars in 2019 [2]. Thus from this data, fashion brand X has adapt to the right platform to sell their products.

Because of the pandemic, brand X only can utilize their online store due to the government regulation to shut down their offline store. Because of that, brand X also need to changed the way they market and advertise their products, from only offline marketing activities to online marketing activities by using social media platform Instagram. According to the Data from Ministry of Tourism and Creative Economy of the Republic of Indonesia, social media is the main source of e-commerce beating television advertisement in 2019 [3]. Furthermore report from Hootsuite also shows that in January 2020, Instagram was the 3rd mobile app with the most active users in Indonesia, and the users keep rising [2]. Thus brand X has chosen one of the optimal platform to market their products.

So far, brand X has utilized Instagram to market their products by creating content in Instagram feed, Instagram stories, as well as using influencers to endorse their products.
Although brand X has used online e-commerce and Instagram to market their products, their online sales were far less compared to their offline sales which was only 28 to 40 million rupiah or 7-10% of their total monthly sales of 400 million rupiah. Brand X also puzzled on which online marketing activities that they need to focus on that can drive their sales. The aims of this research are to study the influence and the significance of SMMA and social media influencers toward purchase intention both directly and indirectly with the double mediation of brand equity as well as Electronic Word of Mouth (E-WOM). This study is made to help brand X decide which online marketing approach work best to improve their customer’s purchase intention and sales in the online store. Thus brand X can adapt and thrive in the pandemic era which limit their offline store opening and help them to improve their online sales. The variable of social media influencers is used with the SMMA to further study the comparison of both approach towards purchase intention since in previous study, the significance of both variables were never compared. This paper is expected to be the guidelines for brand X to decide their future marketing campaign that can drive the most customer’s purchase intention.

2 Literature Review

2.1 Digital Marketing

Marketing can be defined as set of activities, institutions and processes to create, communicate, deliver as well as exchanging values between parties [4]. Marketing includes the activities of advertising, selling, and delivering products or services to consumers or other businesses [5]. Digital marketing can be defined as marketing activities of product or services by using digital media. Digital media that can be used are social media, website, email, etc [6].

2.2 Brand Equity

Brand equity can be defined as a set of assets (brand, name, and symbol) that can reduce or add value to products and services. Brand equity can be reflected in what consumers do, think, and feel, as well as the level of consumer pride in using a brand [5]. The dimension of brand loyalty is found in brand equity because consumer satisfaction has an effect on consumer loyalty to the brand. If the consumer is not satisfied, the consumer will look for another brand [3]. Brand loyalty can be defined as a combination of attitudes, emotions and consumer behavior to continue to buy a brand from previous experiences [7].

2.3 Social Media Marketing Activity

Social media can be defined as an online platform that can facilitate collaboration, interaction and sharing of content [3]. Social Media Marketing Activity (SMMA) can be defined as an online marketing activity on social media that aims to increase brand exposure, expand consumer reach and create closeness between businesses and consumers [8]. SMMA can be classified to several characteristics which are entertainment, interaction, trendy, customization and word of mouth [3].

2.4 Electronic Word of Mouth (E-WOM)

Electronic Word of Mouth (E-WOM) can be defined as a positive or negative statement told by past, present, or future customers about a product or company, and can be viewed online [9]. E-WOM can be divided into 4 dimensions, which are Intensity, Positive Valance, Negative Valance and Content. Intensity is the number of opinions or opinions written by consumers on social media sites. Positive Valance and negative valence are part of the Valance of Opinion, this is a consumer's positive and negative opinion about a product or service. Positive Valence describes positive comments from consumers, while negative valence describes negative
comments from consumers. Negative comments usually arise because of dissatisfaction when using the services or products provided by the brand [10].

2.5 Purchase Intention

Intention can be defined as behavior that encourages people to do something [11]. While Purchase intention can be defined as the combination of consumer interest and the possibility of buying a product or service [3].

2.6 Influencer Marketing

Social media influencers can be defined as individuals who actively use social media accounts as well as creating content on certain topics [12]. Social media influencers usually use a product that fits their lifestyle, and provide product reviews on their social media accounts. An influencer can influence consumer attitudes and behavior to encourage them to buy the products they endorse [13]. Influencer marketing defined as marketing activities that focus on leveraging individuals who have influence over potential buyers and orienting marketing activities around these individuals to be able to spread the message of the brand to the target market. Thus in influencer marketing, marketing activities are not carried out directly to consumers, but through influencers (can be celebrities, content creators, etc.) to convey marketing messages [4].

2.7 Conceptual Framework and Research Hypothesis

With SMMA, consumer can actively participate and communicate with the brands in social media. With the active participation of consumes it greatly impact on the way consumers think and behave towards a brand compared to unidirectional communication [9]. Previous research that has been conducted showed that there was an positive and significant influence between SMMA towards brand equity in the ready-to-drink tea industry and luxury fashion brands [9]. Therefore the first hypothesis is:

H1: SMMA has a positive and significant effect towards brand equity.

Social media influencer marketing practices can result in a positive connection with brand image. Thus having a positive influence with the brand image can also impact on brand equity because brand image is an important aspect of brand equity [14]. Previous research conducted showed that there is a positive influence between Social Media Influencers and Brand Image [15]. Therefore the second hypothesis is:

H2: Social media influencer has a positive and significant effect towards brand equity.

By using social media, companies can easily and quickly interact with consumers. Because of this, consumer participation in social media can have a positive effect on the company [9]. Previous research conducted shows that brand equity increases e-WOM [3]. Therefore the third hypothesis is:

H3: Brand equity has a positive and signicant effect towards e-WOM.

E-WOM is one of the reasons that affect consumers when making buying decisions. Previous Research conducted shows that e-WOM is a tool used by consumers to find information about the quality of products or services in a brand [16]. Another previous research conducted by shows that there is a positive influence between e-WOM on Purchase Intention [9]. Therefore the fourth hypothesis is:

H4: E-WOM has a positive and significant effect towards Purchase Intention.
With the advancement of internet technology, brands are starting to use social media as a means of communication, sales and to establish relationships with customers. Social media from the consumer’s perspective is also considered to be more honest because it communicates the brand as it is. This interaction can have a positive effect on the brand and increase purchase intention in consumers. According to previous research social media marketing activity has a positive effect on purchase intention. Therefore the fifth hypothesis is: H5: Social media marketing activity has a positive and significant effect towards Purchase Intention.

From previous research conducted there was no effect between social media influencers towards purchase intention. However, social media influencers can influence consumer attitudes and behavior to encourage them to buy the products they endorse. This can happen since they have an influence over potential buyers and brand can orient their marketing activities in the individual. Therefore the sixth hypothesis is: H6: Social Media Influencers has a positive and significant effect towards Purchase Intention.

2.9 Research Model
This research model was adopted from two previous research model, that study the effect of SMMA towards purchase intention and the effect of social media influencer towards purchase intention. The two research models were then combined to make this research model, in order to examine the influence of social media marketing activity (SMMA) and social media influencers on purchase intention directly and indirectly with dual mediation of brand equity and e-WOM. The research model can be seen in Figure 1.

![Research Model](image)

3 Methodology and Data Analysis
Quantitative method are used to examine the hypotheses in this research. This research uses questionnaire that is distributed online to collected the data. The minimum number of sample in this research is 120 respondents (24 indicators x 5). This study used purposive sampling to collect the data. The researcher managed to collect 128 respondents. The criterias for respondents who can fill out the questionnaire are the respondent who have been a follower of the Instagram fashion brand X, and had been a follower of the fashion brand X for more than 1 month. Likert scale is used to measure all of the variables ranging from 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree). Analysis that will be used are inner model and outer model overall fit test that includes convergent validity, discriminant validity,
composite reliability, significance of weight, multicollinearity test, coefficient of determination, and hypothesis test by utilizing SmartPLS 3.0.

4 Research Result and Discussion
4.1 Outer Model Overall Fit Test
From the 128 respondents collected, 87% are male while 13% are female, the majority of respondents is in the age group of 25 - 34 years old, working in private sector as an employee, spend 30 minutes to 2 hours of using Instagram in a day, purchase fashion product once a month, and follow more than 3 fashion brand accounts in Instagram. The analysis of convergent validity, discriminant validity, square root of AVE and composite reliability can be seen from table 1, table 2, table 3, and table 4 below.

<table>
<thead>
<tr>
<th>Table 1. Convergent Validity Test Results</th>
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</thead>
<tbody>
<tr>
<td>Variabel</td>
</tr>
<tr>
<td>Social Media Marketing Activity</td>
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<td></td>
</tr>
<tr>
<td>Brand Equity</td>
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<tr>
<td>Electronic Word of Mouth</td>
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<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td>Social Media Influencer</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 2. Discriminant Validity Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand Equity</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>BE1</td>
</tr>
<tr>
<td>BE2</td>
</tr>
<tr>
<td>BE4</td>
</tr>
<tr>
<td>BE5</td>
</tr>
<tr>
<td>BE6</td>
</tr>
<tr>
<td>PI1</td>
</tr>
<tr>
<td>PI2</td>
</tr>
</tbody>
</table>
It can be seen from the tables above, the value of loading factor in convergent validity > 0.6, the cross loading factor value on the intended construct is greater than the other constructs, the square root of AVE for each variable is greater than the relationship with other variables, and the value of composite reliability > 0.7. Thus it can be stated that all of the indicators used for model are valid and reliable.

### 4.2 Inner Model Overall Fit Test

Analysis of R-square value and multicollinearity test were conducted and the results are presented in Table 5 and Table 6.

<table>
<thead>
<tr>
<th></th>
<th>Brand Equity</th>
<th>E-WOM</th>
<th>Influencer</th>
<th>Purchase Intention</th>
<th>SMMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>PI3</td>
<td>0.515</td>
<td>0.548</td>
<td>0.533</td>
<td>0.838</td>
<td>0.562</td>
</tr>
<tr>
<td>PI4</td>
<td>0.623</td>
<td>0.557</td>
<td>0.591</td>
<td>0.866</td>
<td>0.633</td>
</tr>
<tr>
<td>SI1</td>
<td>0.276</td>
<td>0.196</td>
<td>0.753</td>
<td>0.470</td>
<td>0.384</td>
</tr>
<tr>
<td>SI2</td>
<td>0.315</td>
<td>0.214</td>
<td>0.879</td>
<td>0.574</td>
<td>0.464</td>
</tr>
<tr>
<td>SI3</td>
<td>0.390</td>
<td>0.273</td>
<td>0.844</td>
<td>0.553</td>
<td>0.482</td>
</tr>
<tr>
<td>SMM1</td>
<td>0.606</td>
<td>0.343</td>
<td>0.388</td>
<td>0.484</td>
<td>0.816</td>
</tr>
<tr>
<td>SMM2</td>
<td>0.370</td>
<td>0.360</td>
<td>0.235</td>
<td>0.371</td>
<td>0.669</td>
</tr>
<tr>
<td>SMM3</td>
<td>0.593</td>
<td>0.437</td>
<td>0.382</td>
<td>0.618</td>
<td>0.838</td>
</tr>
<tr>
<td>SMM4</td>
<td>0.502</td>
<td>0.505</td>
<td>0.446</td>
<td>0.542</td>
<td>0.708</td>
</tr>
<tr>
<td>SMM5</td>
<td>0.366</td>
<td>0.255</td>
<td>0.551</td>
<td>0.456</td>
<td>0.645</td>
</tr>
<tr>
<td>WOM1</td>
<td>0.669</td>
<td>0.805</td>
<td>0.087</td>
<td>0.444</td>
<td>0.356</td>
</tr>
<tr>
<td>WOM2</td>
<td>0.605</td>
<td>0.868</td>
<td>0.130</td>
<td>0.440</td>
<td>0.396</td>
</tr>
<tr>
<td>WOM3</td>
<td>0.619</td>
<td>0.790</td>
<td>0.450</td>
<td>0.598</td>
<td>0.485</td>
</tr>
<tr>
<td>WOM4</td>
<td>0.499</td>
<td>0.801</td>
<td>0.295</td>
<td>0.583</td>
<td>0.414</td>
</tr>
<tr>
<td>WOM5</td>
<td>0.482</td>
<td>0.720</td>
<td>0.098</td>
<td>0.377</td>
<td>0.422</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Brand Equity</th>
<th>E-WOM</th>
<th>Influencer</th>
<th>Purchase Intention</th>
<th>SMMA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.769</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>E-WOM</td>
<td>0.727</td>
<td>0.798</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Influencer</td>
<td>0.399</td>
<td>0.277</td>
<td>0.827</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Purchase Intention</td>
<td>0.681</td>
<td>0.620</td>
<td>0.646</td>
<td>0.805</td>
<td>-</td>
</tr>
<tr>
<td>SMMA</td>
<td>0.675</td>
<td>0.520</td>
<td>0.539</td>
<td>0.679</td>
<td>0.739</td>
</tr>
</tbody>
</table>

Table 3. Square Root of AVE

<table>
<thead>
<tr>
<th>Variabel</th>
<th>Composite Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand Equity</td>
<td>0.878</td>
</tr>
<tr>
<td>E-WOM</td>
<td>0.897</td>
</tr>
<tr>
<td>Influencer</td>
<td>0.866</td>
</tr>
<tr>
<td>Purchase Intention</td>
<td>0.880</td>
</tr>
<tr>
<td>SMMA</td>
<td>0.856</td>
</tr>
</tbody>
</table>
It can be concluded from Table 5 that the influence of social media marketing activity and social media influencers is moderate at 45.7%, the influence of brand equity on e-wom is moderate at 52.8%, and the influence of SMMA, social media influencers and e-wom is also moderate at 67%.

It can be seen from Table 6 that all the VIF value is lower than 5, thus multicollinearity does not happen in this research.

4.3 Hypothesis Test

Hypothesis testing is done by examining the results of the analysis of r-square, p-values and t-statistics inner model. The result of bootstrapping test can be seen in Figure 2, while the result of T-Statistic can be seen in Figure 3, and the direct path coefficient as well as indirect path coefficient result can be seen in Table 7 and Table 8.

![Fig 2. Value of Path Coefficient Bootstrapping Result](image-url)
4.4 Discussion

4.4.1 The Effect Social Media Marketing Activity Towards Brand Equity

The result of T-Value of this relationship is 6.997 with a P-value of 0.000. Thus from this study, the first hypothesis which states "social media marketing activity has a positive and significant effect on brand equity" is accepted. These results are in accordance with previous research which showed that there was an influence between social media marketing activity on brand equity in the ready-to-drink tea industry [9]. In the study, it was explained that with a
social media approach, consumers can know more about the brand interactively, so that this can increase the brand equity of the brand. From these findings, it can be concluded that the social media marketing activity carried out on Instagram is an important factor in building the brand equity of the fashion brand X. Thus Instagram followers of brand X feel that the existence of social media marketing activities are interesting, informative, and trendy, making them more aware of the brand, knowing its characteristics and helping to create a positive perception of the brand.

4.4.2 The Effect of Social Media Influencer Towards Brand Equity

The result of T-Value of this relationship is 0.504 with a P-value of 0.614. Thus from this study, the second hypothesis states "Social media influencers have a positive and significant influence on brand equity." is rejected. The results of this study are not in accordance with the results of previous studies where there is a positive influence between Social Media Influencers and Brand Image [15]. From these findings, it can be interpreted that for brand X Instagram followers, social media influencer is not an important factor to build brand equity in brand X. Thus Instagram followers of brand X does not depend on the presence or absence of social media influencers to assess the brand equity of a brand.

4.4.3 The Effect of Brand Equity Towards e-WOM

The result of T-Value of this relationship is 16.119 with a P-value of 0.000. Thus from this study, the third hypothesis which states "Brand equity has a positive and significant influence on e-WOM" is accepted. The results of this study are in accordance with previous research where there is a positive influence between brand equity and e-WOM [9]. From these findings, it can be interpreted that for brand X Instagram followers, brand equity is an important factor in encouraging online conversations about fashion brand X. Thus Instagram followers of brand X feel that positive brand equity can encourage them to talk more about fashion brand X, feel proud when using products from that brand, and often discuss positive things from this brand with others.

4.4.4 The Effect of Online Convenience on Online Customer Satisfaction

The result of T-Value of this relationship is 4.228 with a P-value of 0.000. Thus from this study, the fourth hypothesis which states "e-WOM has a positive and significant influence on purchase intention" is accepted. The results of this study are in line with previous research conducted which showed that e-WOM is a tool used by consumers to find information about the quality of products or services on a brand before buying [19], as well as other previous research that showed there is a positive influence between e-WOM on Purchase Intention [9]. From these findings, it can be interpreted that for brand X Instagram followers, e-WOM is an important factor in growing product purchase intentions from fashion brand X. Thus Instagram followers of brand X feel with positive e-WOM, they will be more motivated to buy their products. This can happen because e-WOM is one of the sources of information used by potential consumers to decide whether they will buy the product or not.

4.4.5 The Effect of Social Media Marketing Activity Towards Purchase Intention

The result of T-Value in this relationship is 2.528 with a P-value of 0.012 for direct path, while for the indirect path the T-Value is 6.166 with a P-value of 0. Thus from this study, the fourth hypothesis which states "Social media marketing activity has a positive and significant influence on purchase intention" is accepted. These results are in line with previous research conducted where social media marketing activity has a positive effect on purchase intention
Thus it can be concluded that social media marketing activity can affect purchase intention from consumers directly or indirectly. This can happen because social media platforms are considered more honest to communicate the brand as it is [9]. Furthermore with social media marketing activity, interaction between brands and consumers can occur more easily so that it has a positive effect on the brand and increases purchase intention of consumers [21].

4.3.6 The Effect of Social Media Influencer Towards Purchase Intention

The result of T-Value in this relationship is 4.258 with a P-value of 0.000 for direct path, while for the indirect path the T-Value is 0.458 with a P-value of 0.647. Thus from this study, the fourth hypothesis which states “Social media influencers have a positive and significant influence on purchase intention” is accepted. The results of this study are not in accordance with previous research conducted where there is no influence between social media influencers on purchase intention [15]. However, this result is in line with the literacy where social media influencers can encourage consumers to buy the products they endorse [13]. From these findings, it can be interpreted that for brand X Instagram followers, social media influencers are an important factor in growing their purchase intention. Thus Instagram followers of brand X feel that social media influencers are a source of information for potential consumers to buy X fashion brand products. This can happen since social media influencer can influence consumer attitudes and behavior to encourage them to buy the products they endorse or review [13].

5 Conclusion, Implication, and Suggestion for Future Research

From the findings above, it can be concluded that (1) SMMA has a positive and significant effect towards brand equity. (2) Social media influencer does not have a significant effect towards brand equity (3) Brand equity has a positive and significant effect towards e-WOM. (4) e-WOM has a positive and significant effect towards purchase intention. (5) SMMA has a positive and significant effect towards purchase intention both directly and indirectly. (6) Social Media Influencer has a positive and significant effect on purchase intention directly but not indirectly.

There are several managerial implications that can be utilized by Fashion brand X. First, to increase Brand Equity by Social Media Marketing activity, brand X can increase the intensity of Instagram Feed and Instagram Story content posting activities that encourage people to interact with the content. Some of the features that can be used to create interactive Instagram stories are poll, quiz, and “Ask me a question” feature. By increasing the intensity of interactive post content activities on Instagram feeds and stories, followers of fashion brand X will interact more often and be exposed to updates, products and information about fashion brand X. By increasing the intensity of interaction and exposure to brand X content on Instagram, people will remember the characteristics of the brand more so that it will increase the brand equity of brand X. Second, to increase purchase intention through influencers, brand X can collaborate with influencers who have audience that are similar with brand X target audience. With this collaboration, influencers can endorse brand X products to their followers by creating Instagram contents. The content that can be created are about fashion trends and product review. With this collaboration, brand X can carry out soft selling of its products, and it can influence their buying decision. Third, to increase purchase intention through SMMA, brand X can use the Instagram shopping feature to market its products on Instagram. By using the Instagram shopping feature, the brand X can create a storefront on Instagram so that consumers can directly shop on Instagram when viewing the brand X Instagram feed.

This research has its own limitations such as the number of respondents as well as it is limited to fashion brand X. Thus, further research can expand the number of respondents can be
carried out with different industries so that it can be applicable across other industries. Since this research was conducted specifically for fashion brand X, further research can be carried out to represent fashion industry in certain categories, such as shoes, jewelry, etc.

6 Reference


Factors Affecting Purchase Intention and Purchase Behaviour Electronic Products (Home Appliance) in Online Transaction

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Abstract: When the development is very rapid, and the increase in online sales is very high in several other places, but it is only with the electronics sector which does not experience an increase and focuses more on offline sales due to a lack of consumer confidence so that there is a lack of purchase intention for electronic goods (Home Appliance). Therefore, this study aims to study the effect of e-WOM, Social Media Marketing, Perceived Risk, Online Convenience, which will affect purchase intention, and in the end, purchase intention will increase Purchase Behavior. So that it can change buying behavior from consumers focusing on offline purchases to focusing on online sales using smartPLS to test the relationship between variables consisting of six hypotheses. The results of this study indicate that all hypotheses are accepted.

Keywords: e-WOM, Social Media Marketing, Perceived Risk, purchase intention, Purchase Behavior

1 Introduction

Online sales, especially on e-commerce platforms around the world, continue to experience a fairly high increase every year and are estimated to continue to increase to $4.206 billion in 2020 [1] (Statista.com, 2020). Indonesia is one of the countries that have the highest online shopping growth rate, according to data from [2] databooks.katadata.co.id Indonesia leads the ranks of countries with 78% growth in 2018 due to the number of internet users in Indonesia, which is more than 100 million users, so that it is important to factor that drive the increase in online transactions.

But not with the sale of electronic goods, especially home apps, which are not as many sales compared to product categories according to data from [3] Hukumline.com in 2020, the purchase of electronic products can be seen in second from behind based on the category of best-selling products sold on the Shopee E-commerce platform so that it can be concluded that the public's lack of interest in buying electronic products online on the E-commerce platform compared to other product categories, electronics ranks penultimate because of a lack of trust in the product whether the item can be tried or not and works. This data is supported by the following data. The problem that arises is that buyers in electronic e-commerce products are less interested in online purchases and prefer to buy products offline. Therefore e-wom variables, social media marketing, perceived risk, online convenience to purchase behavior through mediation are determined. Purchase intention to measure what causes consumers to shop more often offline than online.

It is not easy to do online sales of electronic goods based on reset consumers prefer to shop for electronic equipment at retail (offline) due to several factors, one of which is because when shopping online they cannot try these goods, so that promotions on social media are less
targeted and range quite different prices. Therefore I use the theory of planned behavior. The theory states that there are three components of attitude, subjective norms, and perceived behavioral control, forming an individual's behavioral intention. Attitude towards the behavior, suggests that the attitude towards this behavior is determined by beliefs about the consequences of behavior or briefly called behavioral beliefs so that it can be related to the perceived risk variable in this case, while subjective norms are a person's perception of people. People who influence in their lives about whether or not to do certain behaviors. Therefore, for the subjective norm, the e-wom variable will be used. The problem that arises is that buyers in e-commerce of electronic products are less interested in online purchases and prefer to buy products offline. Therefore the variables of e-wom, social media marketing, perceived risk, online convenience on purchase behavior through purchase intention mediation are determined.

2 Literature Review

2.1 E-wom

Harrison Walker in Tariq et al. (2017) [4] eWOM is defined as "informal, person-to-person communication between perceived non-commercial communicators and recipients regarding a brand, product, organization, or service. Cong & Zheng (2017) [5] define E-WOM as a service or product information that involves a personal experience, comments, and also a view using the network. According to Serra-Cantallops et al. (2018) [6], E-WOM is closely related to reviews, recommendations, or opinions disseminated online.

2.2 Social Media Marketing

According to Dave Evans and Jake McKee (2010) [7], social media marketing is an attempt to attract customers to an online social situation where these customers naturally take their time. According to Santos (2017) [8], social media marketing is a form of marketing that is used to create awareness, recognition, memory, and even action for a brand, product, business, individual, or group either directly or indirectly by using tools from the social web such as blogging, microblogging, and social networking. With the existence of social media marketing, it is easier for business actors to interact with their customers online. The costs incurred are not too large, and there is no time limit while connected to the internet. Social media plays a role when marketing company activities to form individual relationships with customers and provide companies with opportunities to access customers (Kelly et al., 2010) [9].

2.3 Perceived Risk

Perceived risk, according to Schierz et al. (2010) [10], is the expected loss. The larger the loss expectation file, the higher the level of risk the consumer will perceive. Laroche et al. (2005) [11] defined perceived risk as a negative insight into the unexpected and changeable outcomes of a purchased product. Ko et al. (2004) [12] defined the concept file of risk perception as the consumer's perception of change and its inverse result from buying a product or service. The concept includes two elements, namely doubt, and consequence. Indecision is defined as the likelihood of an unfavorable outcome, and the consequence is defined as the significance of the loss.

2.4 Online Convenience

Many people start building an online store because of the convenience it has coupled with online shopping, which can save time and effort compared to traditional shopping methods or shopping in real-time (Shanthi & Kannaiah, 2015) [13] Convenience is a feeling from...
consumers about the simplicity, ease of use, and intuitiveness of a website (Srinivasan et al., 2002) [14]. Panse et al. (2019) [15] define convenience as ease of use for consumers to make a transaction at the right time/convenience. Jen-hung & Yi-chun (2010) [16] define convenience as saving time, physical effort, and mental effort.) Convenience can also be a major reason in terms of motivation to do online shopping.

2.5 Purchase intention
Shah et al. (2012) [17] stated that "Purchase intention is a kind of decision-making that studies the reason to buy a particular brand by consumer." Purchase intention is one of the decisions made by consumers when they want to buy a product or service with a certain brand. A brand is an important thing that can influence consumer buying interest. This means that there are interesting things that emerge from the brand. According to Egorova et al. (2007) [18], "Purchase intention as a situation where consumers tend to buy a certain product in certain conditions." Consumers will buy a product when faced with a certain situation. The condition in question encourages the desire of consumers to use products in the form of goods or services in order to meet the needs of the goods or services needed. The purchase decision is a complex or complex process. Purchase intentions are generally related to consumer behavior, perceptions, and attitudes—the essence of consumers in accessing and evaluating specific products. According to Kotler and Keller (2016) [19], a purchase intention is a form of behavior by consumers who have a desire to buy a product based on the desire, experience of use, and desire for the product of a product.

2.6 Purchase Behavior
Purchase Behavioral can be defined as an intention that a person tries to carry out a buying behavior (Ajzen, 2005:110). According to Hanzae & Rezaeyeh (2013) [20], purchase behavior is a conscious plan to do or not to do a buying behavior in the future. Satisfied consumers can lead to repeat purchases and positive word of mouth, which is part of behavioral intentions (Jalil et al., 2016)[21].

2.8 Conceptual Framework and Research Hypothesis
Research involving the E-WOM variable is considered important because information on services and products of a product that involves a personal experience, comments, and also a view using the network has a positive and significant influence on purchase intention (Chetna Kudeshia & Anrhem Kumar, 2017) [22]. The advantages of various aspects and the ease of disseminating information and the ease of accessing an online forum so that in the study entitled eWOM through social networking sites and impact on purchase intention and brand image in Iran by Milad Farzin and Majid Fattahi (2018) [23] in this study explained eWOM has a positive and significant effect on purchase intention. According to Nuiser (2018) [24], eWOM also has a positive and significant effect on increasing; in this case, it is easier and more convenient to make purchase intentions. Therefore the hypothesis is:

H1: E-WOM has a positive and significant effect on purchase intentions.

According to ( Gautam and Sharma 2017) [25], social media marketing has a positive influence on purchase intention. With the existence of social media marketing, it is easier for business actors to interact with their customers online. According to Ahmed and Zahid (2014) [26] social media marketing has a positive influence on purchase intention. According to ( May & Meier 2018) [27], the existence of social media marketing helps encourage purchase intention so that it has a positive and significant influence. Therefore the hypothesis is:
H2: Social media marketing has a positive and significant effect on purchase intention.

(Park et al., 2015) [28]. Perceived risk is an expectation of loss to buyer's interest, so the higher the loss, the lower the purchase intention, so it can be concluded that the higher the perceived risk to purchase intention, the larger the loss expectation file, the higher the level of risk that will be felt by consumers. According to Kwek Choon Ling et al. (2011) [29], in a study entitled Perceived Risk, Perceived Technology, Online Trust for the Online Purchase Intention in Malaysia, found that perceived risk had a positive effect on purchase intention. Therefore the hypothesis is:

H3: Perceived risk has a positive and significant effect on purchase intention.

Online convenience is a feeling from consumers about the ease of online transactions that can provide savings in terms of time and energy for consumers. This is supported by research (Chang, 2016) [30]. Online convenience has a positive and significant influence on online purchase intention. According to (Sowmyanarayanan, et al., 2020) [31], a study entitled Beyond Kirana Stores: A Study on Consumer Purchase Intention for Buying Grocery Online found that online convenience has a positive and significant influence on online purchase intention. Therefore the hypothesis is:

H4: Online convenience has a positive and significant effect on purchase intention.

Purchase Behavioral can be defined as an intention that a person tries to carry out an online buying behavior. According to (Eyyup, at. Al, 2017) [32], Purchase Intention has a positive and significant influence on online Purchase Behavior. According to (Grecia et al., 2020) [33] in a study entitled Bridge The Gap, Consumers Purchase Intention and Behavior Regarding Sustainable Clothing found that Purchase Intention has a positive and significant influence on online Purchase Behavior. Therefore the hypothesis is:

H5: Purchase intention has a positive and significant effect on Purchase Behavior.

![Research Model](image)

**Fig 1. Research Model**

### 3 Methodology and Data Analysis

The method used in this study is a quantitative method used to test the hypothesis. This study collects data by distributing questionnaires to respondents. 127 respondents as a sample using sampling obtained using google form. The criteria for respondents who can fill out the
questionnaire are respondents who have shopped online for electronic products, especially home appliances in Indonesia. The first part of the questionnaire contains questions about whether the respondent has shopped for electronic products, especially home appliances online before or not. If they have never shopped for electronic products, especially home appliances online, there is no need to continue filling out the questionnaire. The second part of the questionnaire contains respondent profiles such as name, gender, age, and average monthly spending for online shopping. The third part of the questionnaire contains all the questions related to the variables. The Likert scale was used to measure all variables (measurements) ranging from 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree). The tests that will be carried out are validity test, reliability test, model fit test, and hypothesis testing using SmartPLS 3.0.

4 Research Result and Discussion

4.1 Validity and Reliability Test

Of the 127 respondents collected, it shows that most respondents have male gender with a total of 76 respondents (59.8%) while female sex only consists of 51 respondents (40.2%). Most of the respondents have 20 – 30 years, as many as 48.8% (62) respondents. The average monthly expenditure for online shopping is the majority of respondents who buy electronic products (home appliances) as much as Rp. 100,000 – Rp. 500,000 as much as 26%, Rp 500,000-Rp 1,000,000 as much as 24.4% Analysis of validity, reliability, and model fit was also carried out, which can be seen in the table below.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Measurement Code</th>
<th>Validity Test</th>
<th>Reliability Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-WOM</td>
<td>EWOM1 0.838</td>
<td>Valid</td>
<td>0.833</td>
</tr>
<tr>
<td></td>
<td>EWOM2 0.786</td>
<td>Valid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EWOM3 0.745</td>
<td>Valid</td>
<td></td>
</tr>
<tr>
<td>Social Media Marketing</td>
<td>SM1 0.912</td>
<td>Valid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SM2 0.850</td>
<td>Valid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SM3 0.818</td>
<td>0.638 Valid</td>
<td>0.854</td>
</tr>
<tr>
<td></td>
<td>SM4 0.700</td>
<td>Valid</td>
<td>0.897</td>
</tr>
<tr>
<td></td>
<td>SM5 0.691</td>
<td>Valid</td>
<td></td>
</tr>
<tr>
<td>Perceived Risk</td>
<td>PR1 0.720</td>
<td>Valid</td>
<td>0.971</td>
</tr>
<tr>
<td></td>
<td>PR2 0.820</td>
<td>Valid</td>
<td>0.648</td>
</tr>
<tr>
<td></td>
<td>PR3 0.835</td>
<td>Valid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PR4 0.828</td>
<td>0.648 Valid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PR5 0.795</td>
<td>Valid</td>
<td></td>
</tr>
<tr>
<td>Online Convenience</td>
<td>OC1 0.826</td>
<td>Valid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OC2 0.862</td>
<td>Valid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OC3 0.757</td>
<td>Valid</td>
<td>0.916</td>
</tr>
<tr>
<td></td>
<td>OC4 0.852</td>
<td>0.704 Valid</td>
<td>0.935</td>
</tr>
<tr>
<td>Purchase Intention</td>
<td>PI1 0.797</td>
<td>Valid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PI2 0.829</td>
<td>0.649 Valid</td>
<td>0.917</td>
</tr>
<tr>
<td></td>
<td>PI3 0.846</td>
<td>Valid</td>
<td>0.890</td>
</tr>
</tbody>
</table>
The loading factor is a measure of validity that can be seen from the outer loading of an indicator that is said to have good reliability if the outer loading value is above 0.70 (Ghozali, 2019). At the same time, the value of outer loading is still tolerated, which is more than 0.60, so that all these variables are reliable. AVE value greater than 0.5. So it can be concluded that all variables are valid. Composite reliability analysis was carried out to assess whether the variables were reliable or not. Variables are classified as reliable if the composite reliability value is greater than 0.7, so all these variables are said to be reliable.

4.2 Hypothesis Test

### Table 2. R-square

<table>
<thead>
<tr>
<th>Variable</th>
<th>R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase Intention</td>
<td>0.968</td>
</tr>
<tr>
<td>Purchase Behaviour</td>
<td>0.593</td>
</tr>
</tbody>
</table>

### Table 3. VIF Result

<table>
<thead>
<tr>
<th>Variable</th>
<th>Purchase Behaviour</th>
<th>Purchase Intention</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-WOM</td>
<td>1,831</td>
<td></td>
</tr>
<tr>
<td>Online Convenience</td>
<td>3,873</td>
<td></td>
</tr>
<tr>
<td>Purchase Behaviour</td>
<td>1,000</td>
<td></td>
</tr>
<tr>
<td>Purchase Intention</td>
<td>1,000</td>
<td></td>
</tr>
<tr>
<td>Perceived Risk</td>
<td>4,878</td>
<td></td>
</tr>
<tr>
<td>Social Media Marketing</td>
<td>2,019</td>
<td></td>
</tr>
</tbody>
</table>

### Table 4. Direct Path Coefficients Result

<table>
<thead>
<tr>
<th>No</th>
<th>Hypothesis</th>
<th>T-Value (&gt;1.96)</th>
<th>P-Value (&lt;0.05)</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>EW → PI</td>
<td>1.985</td>
<td>0.048</td>
<td>accepted</td>
</tr>
<tr>
<td>2</td>
<td>SM → PI</td>
<td>5.042</td>
<td>0.000</td>
<td>accepted</td>
</tr>
<tr>
<td>3</td>
<td>PR → PI</td>
<td>23.749</td>
<td>0.000</td>
<td>accepted</td>
</tr>
<tr>
<td>4</td>
<td>OC → PI</td>
<td>2.872</td>
<td>0.004</td>
<td>accepted</td>
</tr>
<tr>
<td>5</td>
<td>PI → PB</td>
<td>11.221</td>
<td>0.000</td>
<td>accepted</td>
</tr>
</tbody>
</table>

It can be seen that the value of the purchase intention variable R-square is 0.968, and purchase behavior is 0.593. So the bias is that the influence of E-WOM, online convenience,
perceived risk, and social media marketing variables is moderate 9.68%, and the effect of purchase intention on purchase behavior is moderate at 59.3%. All variables have an AVE value greater than 0.5. So it can be concluded that all variables are valid. All variable results meet the requirements, namely T-Value (>1.96) and P-Value (<0.05) so that all variables are accepted.

4.3 Discussion

Effect of E-WOM on Purchase Intention

Based on the results of the above test, there is a significant influence between the E-WOM variables on purchase intention. So from this study, the first hypothesis states that E-WOM has a positive and significant effect on purchase intention. The results of this study are in line with the results of previous research conducted by (Chetna Kudeshia & Amresh Kumar, 2017) [22], which showed that there was a positive and significant influence between E-WOM on purchase intention on a brand. And research from Milad Farzin and Majid Fattahi (2018) [23] shows that there is a positive and significant effect of E-WOM on purchase intention. From these findings, it can be interpreted that E-WOM conducted in research at one of the universities in Iran is an important factor in building a purchase intention.

So it can be assumed that the increase in E-WOM, can also increase consumer buying interest by reading reviews so consumers can know more about the specifications, characteristics, and benefits of the product so as to increase purchase interest.

Effect of Social Media Marketing on Purchase Intention

Based on the results of the above test, there is a significant influence between social media marketing variables on purchase intention. So from this study, the hypothesis is that social media marketing has a positive and significant influence on purchase intention. The results of this study are in accordance with the results of previous research conducted by Vikas Gautam and Vikram Sharma (2017) [25], which showed that there was a positive and significant influence between social media marketing on purchase intention in this study. And research from Ahmed and Zahid (2014) [26] shows that there is a positive and significant influence between social media marketing on purchase intention in this study. From these findings, it can be interpreted that social media marketing carried out in the banking sector is an important factor in building a purchase intention.

So it can be assumed that the increase in social media marketing, can also increase consumer buying interest by way of notification with social media can increase consumer knowledge about the product more easily and practically so that consumers are more interested in the product, thereby increasing purchase interest.

Effect of Perceived Risk on Purchase Intention

Based on the results of the above test, there is a significant influence between perceived risk variables on purchase intention. This study has a hypothesis which states that perceived risk has a negative and significant effect on purchase intention. The results of this study are in accordance with the results of this study, the same as the research conducted by Ariffin et al.(2018) [34], which showed that there was a negative and significant influence between perceived risk and purchase intention in this study as well as research from Bhukya, and Singh (2018) [35] which shows that there is a negative and significant influence between perceived risk and purchase intention in this study.

So it can be assumed that the increase in perceived risk, it can reduce consumer buying interest due to the higher risk of buying electronic goods purchased online, the product does not
match the initial description, or the product is damaged/defective during the trip so that these things cause doubts. In the minds of consumers, the higher the perceived risk of eating is inversely proportional to the demand for the purchase will be lower.

**Effect of Online Convenience on Purchase Intention**

Based on the results of the above test, there is a significant influence between online convenience variables on purchase intention. This study has a hypothesis which states that online convenience has a negative and significant effect on purchase intention.

After conducting interviews with informants regarding the convenience of online shopping, which affects an intention to buy food, according to the informant, if the appearance of a website or application is attractive, the resource person focuses more on the appearance and features of the web/application which is attractive so that it overrides the purchase intention because it is too comfortable. With the appearance or features of these features, so that online convenience has a negative and significant influence on purchase intention.

**Effect of Purchase Intention on Purchase Behavior**

Based on the results of the above test, there is a significant influence between the purchase intention variables on purchase behavior. So from this study, the hypothesis states that purchase intention is to have a positive and significant influence on purchase behavior. The results of this study are in accordance with the results of previous studies conducted by Grecia et al. (2020)[33], which shows that there is a purchase intention that has a positive and significant influence on purchase behavior in this study. Rausch and Kopplin (2020)[36] show that there is purchase intention to have a positive and significant influence on purchase behavior in this study. From these findings, it can be interpreted that asking for purchase of a product is an important factor in building buying behavior.

So it can be assumed that the increase in purchase intention can also increase consumer purchase behavior by making purchases online. It will increase a consumer's habit of making purchases online, so that increasing purchase intensity will also increase the behavior/habits of these consumers to shop.

**5 Implication and Suggestions for Future Research**

The results of research and analysis conducted by researchers provide several managerial implications which are expected to be useful for the electronics industry, especially home appliances in Indonesia, especially on websites/sites or online applications:

E-WOM to increase purchase intention: by providing online education and guidance as well as improving the quality of the product so that consumers can review the product properly in online forums such as in reviews one-commers or other discussion forums. So that if the product gets a good review from the web/online application, consumers will no longer hesitate to buy the electronic product online and increase purchase interest.

Social media marketing to increase purchase intention: by doing marketing through social media such as Instagram, youtube. Instagram, Facebook, Twitter, and recently are booming, namely tik tok by exploring marketing through social media which. In fact, electronic products rarely do marketing through social media and still mostly use television and banners on the highway, which is one-way marketing with using social media such as Instagram, YouTube. Instagram, Facebook, Twitter, and Tik Tok, consumers can interact directly such as commenting, and the seller can answer questions in the minds of these consumers so that they educate and promote their electronic products and besides that, by using social media such as
n.d.:97(16), 4353–4365.


Impact of Artificial Intelligence on Recruitment Process

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Abstract. This research is an explanatory study which discusses the impact of artificial intelligence technology, virtual recruitment environment in e-HRM on recruitment process comprehensively from the candidate perspective, the purpose of this study is to examine the effect of the application of artificial intelligence technology and virtual recruitment environment on electronic human resource management on recruitment process. In this study researchers used quantitative methods where the number of samples were 40 workers who had worked at the company for a minimum of 1 year and had used e-HRM for the recruitment process, data was obtained through distributing questionnaires to selected respondents using non-probability methods and snowball sampling. The data processing in this study used the Smart PLS 3.0 program. The result showed that the application of artificial intelligence can help the recruitment process and the development of virtual recruitment environment in e-HRM system can give contribution according to the original purpose of its use.

Keywords: artificial intelligence, e-hrm, virtual recruitment environment, human resource, recruitment process

1. Introduction

In the era of digitalization and industrial revolution 4.0, one of the main challenges in the world of employment across industry is high turnover rates. Based on data from Bureau Labor of statistic, estimated turnover rate from one industry in the United States reaches more than 50%, in some sectors (eg hotels and food) have experienced turnover rates more than 70% [1]. Turnover rates from this workforce has dramatic impact on labor cost, with an industry survey showing that 41% of companies found that entry-level employees would decided to leave, it cost the company $30,000 [2]. It takes a lot of time and money to attract applicants. The result from previous research related to the turnover rate in Indonesia, with target of the millennial workers showed that only 25% of millennial workers are feeling involve with the companies, while 9% of millennial workers are felt not tied to the company, and 66% are partially feel bounding with the company. 60% of millennial workers are consider leaving the organization if they don’t feel fit with the company [3]. This phenomenon will certainly affects the turnover rates of a company and might impact organization performance[4]. High turnover intentions will increase the frequency of leaving of current job and have negative impact within the company, such as financial and ccommunications between employees [5]. To answer this gap, on how to make the recruitment process produce candidates that match the values of the specific job and organization, this is the role of Artificial Intelligence technology,
electronic human resource management (e-HRM) design by applying virtual recruitment environment. With help of technology, it is expected can help companies to reduce employee turnover rates and ensure that they can recruit, motivate, and retain best employees [6]. The purpose of this study is to know the impact of application of Artificial Intelligence technology, e-HRM, and virtual recruitment environment on recruitment process and to answer research question from this study below:

1. Does the use of AI technology significantly affect the recruitment process?
2. Does the use of AI technology significantly affect on eHHRM?
3. Does the use of eHHRM significantly affect the recruitment process?
4. Does virtual recruitment environment significantly affect the recruitment process?
5. Does virtual recruitment environment significantly affect on eHHRM?
6. Does the use of AI technology in eHHRM significantly affect the recruitment process?
7. Does the use of AI technology in eHHRM significantly affect the recruitment process?

2. Literature Review

2.1 Artificial Intelligence

AI can be defined as the use of technology that aims to reproduce human cognitive abilities to achieve goals by considering obstacles that may occur [7]. The Society of Human Resource Management (SHRM) has identified AI as the top of the technological trend and major contributor in human resource management in the future [8]. To have full advantage of AI technology in order to support HR, an organization needs to understand on how technology and statistics can improve the decision-making process [6]. The ability of AI technology can support three functional areas of an organization, first, AI can improve the automation process, second, AI can assist in the decision-making process, and third, AI can be as an intelligent agents and chatbots for supporting tools [9].

2.2 Virtual Recruitment Environment

The definition of Virtual Recruitment Environment is an online environment that allows companies and potential job applicants to interact with each other [10]. A sophisticated designed recruitment web which allows applicant to complete job applications and even conduct an online interview process. The virtual recruitment environment is determined by a combination of aesthetics, informational and process characteristics of a website which specifically intended to provide company and job information.

2.3 Electronic Human Resource Management

The definition of e-HRM refers to connecting individuals and collectives using information technology assistance that prioritize the function of HR division activities. Other definition of e-HRM is a tools which provided by the organizations to support HR strategies using internet technology [11]. From the previous research showed the use of e-HRM technology can improve human resource performance. There are two activities from the e-HRM technology that support recruitment process, first is e-recruitment, second is e-selection. The purpose of using e-recruitment in an organization to attract many qualified applicants, companies can selectively choose in the recruitment process and have the opportunities to recruit the best individual to fill positions in an organizations [6]. The definition of e-recruitment is the use of communication technology such as website and social media that aims to find and attract potential candidates, keeps them attracted to the company during the selection process, and influences the decision
that candidates will take. There are four benefits of using e-recruitment, first, to expand the applicant pool, by using e-recruitment, applicants can access the recruitment website anywhere and anytime, second, it can reach candidates who are currently working at other companies or commonly known as passive candidates, third, by using e-recruitment it can reduce time and cost, where all activities carried by online, fourth, it can increase the attractiveness of applicants to apply for jobs [6]. The company can design the website according to the needs of the candidates [10]. The second activity of e-HRM which can support recruitment process is e-selection, there are four benefits from using e-selection, first, simplify job analysis process, second, using e-selection for facilitating employee screening test buy online, third, facilitating interview process, interview can be done by online using video conference application like zoom or skype, fourth, by using e-selection can help the final decision-making process [10].

2.4 Recruitment Process

The definition of recruitment is an activity to finding, attracting, and ensuring the availability of qualified and appropriate people to meet organizational needs [12]. There are two recruitment sources, first is internal source, through transfer or promotion, second is external source, through advertisement, educational institutions, placement agencies, job fair, outsourcing and job portal [12]. In using e-recruitment, the main focus is to get a lot of applications, this provides benefits for the organization such as getting competent individuals to fill the job positions of a group of applicants [13]. There are two types of recruitment methods which are used as a reference for the organization, first, traditional method and the second is modern method, basically the activity stage are the same, first stage is looking for candidates, second is conducting screening test, third, conducting interview, and the last activity is placement. The difference between these two methods is the media and technology used while performing every stage of recruitment, the traditional method does not use much technology assistance while the modern method is assisted by technology [13].

2.5 Research Hypothesis and Conceptual framework

Based on study from Niehueser and Boak [14] introduction of AI technology into a high-volume recruitment process have a significant impact on improvements in efficiency and productivity. According to Johnson et al. [6], automating HR practices provides organizations with additional capabilities which enable them to hire the most talented employee and will motivated them to stay with organization over time. AI becomes an important system, acting as a supporter and leveraging the effectiveness of Human Resources area [15]. AI also have potential through its ability in optimizing existing process and improve automation, information and transformation effects, and also detect, predict and interact with humans [7]. Therefore, the hypothesis is:

H1: The use of AI technology has a significant effect on the recruitment process.

H2: The use of AI technology has a significant effect on e-HRM.

One of the advantages of online recruiting source is they offer vast array of interactive and informational design options [10]. The enormous amount of information through audio, video and text inside the corporate website helps organizations building their employer brand [16]. However according to Allden and Harris [17] resource and cultural limitations has stopped most participants from fully adopting the recruitment web. Know the consumer, it’s important to define the target market of desired job applicants and understand their motivation and job product knowledge characteristic [10]. Therefore, the hypothesis is:

H3: Virtual Recruitment Environment has a significant effect on the recruitment process.

H4: Virtual Recruitment Environment has a significant effect on e-HRM.
According to [18] e-selection and e-recruitment process seems to be a growing field because of the widespread of usage technologies like skype, web-based tests, video conferencing and web-based job posting for all kinds of employee. Research has shown that eHRM can improve HR outcomes [6]. The most important factors of e-recruitment is cost saving and attracting the large pool of candidate. And by using e-recruitment it is helping the applicant better than the traditional recruitment [19]. Therefore, the hypothesis is:

H5: e-HRM has a significant effect on the recruitment process.

By using e-recruitment and AI, it can help organizations broaden applicant pool, increase timeliness, reach passive job applicants, increase efficiency in recruiting process, enhance applicants attraction to organizations and also can improve assess fit between candidate with organizations [6]. AI also helping recruiters by automatically sending customized e-mail to candidates, provide them with regular updates of their application status, and also administering any test required for the position [20]. According to (Niehueser and Boak [14] AI had significantly reduced the time taken to process each individual application to the scheduled interview with a hiring manager, from up to two weeks with manually processes to an average of seven minutes. Therefore, the hypothesis is:

H6: The use of AI technology in e-HRM has a significant effect on the recruitment process.

The internet recruitment methods, represent a growing and high-potential opportunity for employers to broaden their recruiting reach and cost [10]. According to Mishra and Kumar [16] by adopting the recruitment practices in organizations it offers several benefit to both employee and employer which help in boosting up the employer branding strategy, it is also reduces cost and time, makes the process more user friendly and generates a huge pool of applicants. Promoting the employer brand is one of the most regular activities for participants and in majority of cases seen as central to the e-recruitment campaign [17]. Therefore, the hypothesis is:

H7: The application of virtual recruitment environment in e-HRM has significant effect on the recruitment process.

From the research hypothesis mentioned above, this conceptual framework is modified from Pangkey et al.[3] and Maurer and Liu [10], due to limited quantitative research with subject AI on recruitment process in Indonesia and overseas country, authors combining the conceptual framework from previous studies and the result can be seen in Figure 1 below.

![Fig 1. Research Model modified from [3] [10]](image-url)
Figure 1, described research model of this study, the independent variable is Artificial Intelligence (AI) and Virtual Recruitment Environment (VRE), mediating variable in this model is e-HRM, and dependent variable is recruitment process (REK).

3. Methodology and Data Analysis
This research used quantitative research, using 40 sample, respondents from this study are individuals who have used e-HRM, with age range 25-50 years old, male and female with more than one year of work experience and with educational background from high school graduate to master graduate. This research used Smart PLS 3.0 to process data, PLS-SEM can work efficiently with small sample sizes and complex models [21]. The scoring of the answers questionnaire given to the respondents used Likert Scale. The Likert Scale was designed to measure attitude in scientifically acceptable and validated manner since 1932 [22]. The answers of the statement items consisted of strongly disagree which represent by the number of 1, disagree represent by the number of 2, neutral represent by the number of 3, strongly agree is represent by using number 4, and strongly agree represent by using number 5. This research using interval scale.

4. Research Result and Discussion
4.1 Outer Model Result
From total data of 40 respondents that have been collected, it shows the highest number of respondents is male 57% compare to female respondents 43%, 57% of the respondents aged between 25-40 years old, while 43% of respondents aged 41-50 years old, from education level 63% of respondents have bachelor degree, 18% have master degree, and other 30% of respondents have graduate from high school and associate degree. 100% of respondents have used e-HRM. The validity test result can be seen in Table 1.

<table>
<thead>
<tr>
<th>Indikator</th>
<th>Loading Factor</th>
<th>Valid/Not Valid</th>
<th>Average Variance Extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AI1</td>
<td>0,787</td>
<td>Valid</td>
<td>0,724</td>
</tr>
<tr>
<td>AI2</td>
<td>0,910</td>
<td>Valid</td>
<td></td>
</tr>
<tr>
<td>E-HRM 1</td>
<td>0,754</td>
<td>Valid</td>
<td></td>
</tr>
<tr>
<td>E-HRM 2</td>
<td>0,752</td>
<td>Valid</td>
<td></td>
</tr>
<tr>
<td>E-HRM 3</td>
<td>0,902</td>
<td>Valid</td>
<td></td>
</tr>
<tr>
<td>E-HRM 4</td>
<td>0,887</td>
<td>Valid</td>
<td>0,673</td>
</tr>
<tr>
<td>E-HRM 5</td>
<td>0,857</td>
<td>Valid</td>
<td></td>
</tr>
<tr>
<td>E-HRM 6</td>
<td>0,754</td>
<td>Valid</td>
<td></td>
</tr>
<tr>
<td>VRE1</td>
<td>0,911</td>
<td>Valid</td>
<td></td>
</tr>
<tr>
<td>VRE2</td>
<td>0,907</td>
<td>Valid</td>
<td>0,826</td>
</tr>
<tr>
<td>REK1</td>
<td>0,863</td>
<td>Valid</td>
<td></td>
</tr>
<tr>
<td>REK2</td>
<td>0,707</td>
<td>Valid</td>
<td>0,604</td>
</tr>
<tr>
<td>REK3</td>
<td>0,807</td>
<td>Valid</td>
<td></td>
</tr>
<tr>
<td>REK4</td>
<td>0,722</td>
<td>Valid</td>
<td></td>
</tr>
</tbody>
</table>

Table 1 showed the result of the loading factor is >0,70, which can be stated all indicators from the variables in this research is valid. For convergent validity results from the Average Variance
Extracted (AVE) has value >0.50 it shows the AVE of this research has meet requirement. The result of discriminant validity from this research can be seen in Table 2.

Table 2. Discriminant Validity (Cross Loading result)

<table>
<thead>
<tr>
<th></th>
<th>AI</th>
<th>E-HRM</th>
<th>REK</th>
<th>VRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>AI1</td>
<td>0.787</td>
<td>0.036</td>
<td>0.239</td>
<td>0.032</td>
</tr>
<tr>
<td>AI2</td>
<td>0.910</td>
<td>0.138</td>
<td>0.328</td>
<td>0.262</td>
</tr>
<tr>
<td>E-HRM1</td>
<td>0.088</td>
<td>0.754</td>
<td>0.485</td>
<td>0.486</td>
</tr>
<tr>
<td>E-HRM2</td>
<td>0.006</td>
<td>0.752</td>
<td>0.548</td>
<td>0.624</td>
</tr>
<tr>
<td>E-HRM3</td>
<td>0.138</td>
<td>0.902</td>
<td>0.543</td>
<td>0.777</td>
</tr>
<tr>
<td>E-HRM4</td>
<td>0.049</td>
<td>0.887</td>
<td>0.429</td>
<td>0.718</td>
</tr>
<tr>
<td>E-HRM5</td>
<td>0.132</td>
<td>0.857</td>
<td>0.525</td>
<td>0.766</td>
</tr>
<tr>
<td>E-HRM6</td>
<td>0.139</td>
<td>0.754</td>
<td>0.576</td>
<td>0.483</td>
</tr>
<tr>
<td>REK1</td>
<td>0.222</td>
<td>0.534</td>
<td><strong>0.863</strong></td>
<td>0.587</td>
</tr>
<tr>
<td>REK2</td>
<td>0.189</td>
<td>0.530</td>
<td><strong>0.707</strong></td>
<td>0.579</td>
</tr>
<tr>
<td>REK3</td>
<td>0.405</td>
<td>0.499</td>
<td><strong>0.807</strong></td>
<td>0.345</td>
</tr>
<tr>
<td>REK4</td>
<td>0.243</td>
<td>0.361</td>
<td><strong>0.722</strong></td>
<td>0.359</td>
</tr>
<tr>
<td>VRE1</td>
<td>0.187</td>
<td>0.727</td>
<td>0.569</td>
<td><strong>0.911</strong></td>
</tr>
<tr>
<td>VRE2</td>
<td>0.172</td>
<td>0.720</td>
<td>0.546</td>
<td><strong>0.907</strong></td>
</tr>
</tbody>
</table>

Table 2 showed, the relationship of each indicators to their variable is greater than other variable. to check other discriminant validity by using the result from the Fornell-Larcker Criterion, the result can be seen in Table 3.

Table 3. Discriminant Validity (Fornell-Larcker Criterion result)

<table>
<thead>
<tr>
<th>Variabel</th>
<th>AI</th>
<th>REK</th>
<th>VRE</th>
<th>E-HRM</th>
</tr>
</thead>
<tbody>
<tr>
<td>AI</td>
<td>0.851</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REK</td>
<td></td>
<td>0.340</td>
<td>0.777</td>
<td></td>
</tr>
<tr>
<td>VRE</td>
<td>0.197</td>
<td>0.613</td>
<td>0.909</td>
<td></td>
</tr>
<tr>
<td>E-HRM</td>
<td>0.113</td>
<td>0.629</td>
<td>0.796</td>
<td><strong>0.820</strong></td>
</tr>
</tbody>
</table>

Table 3 explains the value of each variable is greater than other variable. Which can be stated the conditions of discriminant validity this research have been met. Construct reliability test by using two criteria, composite reliability and Cronbach Alpha. The value of the Cronbach Alpha reliability test for exploratory research purposes must be >0.70 but value >0.60 also acceptable [21], and for the composite reliability value must be >0.70. The test result can be seen in Table 4.

Table 4. Composite Reliability & Cronbach Alpha Result

<table>
<thead>
<tr>
<th>Construct</th>
<th>Cronbach’s Alpha</th>
<th>Composite Reliability</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>AI</td>
<td>0.631</td>
<td>0.839</td>
<td>Reliable</td>
</tr>
<tr>
<td>E-HRM</td>
<td>0.902</td>
<td>0.925</td>
<td>Reliable</td>
</tr>
<tr>
<td>REK</td>
<td>0.780</td>
<td>0.858</td>
<td>Reliable</td>
</tr>
</tbody>
</table>
4.2 Inner Model Result

Table 5 showed the value of composite reliability of the four constructs is >0.70 and the result of Cronbach Alpha is >0.60, thus the overall result is reliable.

4.3 Hypothesis Test

The hypothesis result from this research can be seen in Table 6.

Table 6 showed, from seven hypothesis, the result is two hypothesis has significant result and five hypotheses has result not significant.

4.4. Discussions
4.4.1 The use of AI technology on Recruitment Process
H1 The use of AI technology has a significant effect on the recruitment process.
From the hypothesis result shown in Table 6, the relationship between the use of Artificial Intelligence technology to the recruitment process results in a significant with p-value 0.091 at $\alpha = 0.1$, thus H1 is accepted. This result is in line with the results of previous research which states that the use of AI technology in the recruitment process helps efficiency and increases rankings in recruitment process activities at L’Oréal's company and the job interview ratio for candidates increases by 82% [23]. The automation of HR practices can provide additional capabilities for organizations that allow them to hire the most talented and motivated people to stay with the organization over time [6].

4.4.2 The use of AI technology on e-HRM
H2 The use of AI technology has a significant effect on e-HRM.
From the results hypothesis test shown in Table 6 the relationship between the use of Artificial Intelligence technology to e-HRM results with p-value of 0.712 which is not significant at $\alpha = 0.1$, thus H2 is rejected. This can be due to challenges in the application of AI technology, the difficulty in process integration AI system with existing, The expensive of AI technology and expertise, internal existing users who do not understand enough the definition and benefit of AI technology [9], to avoid these obstacles, it is highly suggest to organization to conduct benchmarking with other companies that has been successfully implementing AI in e-HRM before implementing this technology internally.

4.4.3 The effect of Virtual Recruitment Environment in Recruitment Process
H3 Virtual Recruitment Environment has a significant effect on the recruitment process.
From the hypothesis result shown in Table 6, the relationship between the application of the virtual recruitment environment to the recruitment process results with p-value of 0.436 which is not significant at $\alpha = 0.1$ thus H3 is rejected. The analysis that can be given is that making a virtual recruitment environment without paying attention to issues in terms of design can affect the candidate's decision to apply [10]. To avoid this problem, it is advisable to pay attention to details on making a virtual recruitment environment.

4.4.4 The effect of Virtual Recruitment Environment in e-HRM
H4 Virtual Recruitment Environment has a significant effect on e-HRM.
The result of hypothesis test shown in Table 6, the relationship between the virtual recruitment environment and e-HRM results is significant with p-value of 0.000 at $\alpha = 0.1$, thus H4 is accepted. The success of creating a virtual recruitment environment lies in the ability to integrate interactivity, clarity factors and richness of information [10]. The development of e-HRM that refers to the principles of a virtual recruitment environment is expected to have a positive impact on the use of e-HRM.

4.4.5 The Impact e-HRM in Recruitment Process
H5 e-HRM has a significant effect on the recruitment process.
The hypothesis result shown in table 6, the relationship between e-HRM and the recruitment process resulted with p-value of 0.129 which was not significant at $\alpha = 0.1$, thus H5 was rejected. Based on previous research 75% of companies in the recruitment process do not provide
feedback to candidates who fail to pass [23]. Additional features to e-HRM that are considered important from the candidate's point of view is expected to provide more positive results on the use of e-HRM in recruitment process, and the mindset of recruiters that must be changed when looking at candidates, that candidates must be considered customers [23], where the main target market of e-HRM, especially e-recruitment and e-selection, are job seekers or candidates [10].

4.4.6 The use of AI Technology and e-HRM in Recruitment Process

H6 The use of AI technology in e-HRM has a significant effect on the recruitment process.

The hypothesis result shown from Table 6, the relationship between the application of AI in e-HRM to recruitment process resulting with p-value of 0.770 which is not significant at $0.1 = 0.1$, thus H6 is rejected. This result is not in line with previous research which states that the application of e-HRM and AI can help organizations to attract, motivate and retain talented employees and reduce turnover rates [6]. Different result may occur because there is still a lack of investment and knowledge related to AI technology in Indonesia, which is contrary to previous research conducted in United State of America, the No. 1 country leading investment in AI technology with total investment from year 2008-2017 reaching a value of $ 694 billion [24].

4.4.7 The impact of Application of Virtual Recruitment Environment in e-HRM to Recruitment Process

H7 The application of virtual recruitment environment in e-HRM has significant effect in the recruitment process.

The hypothesis result shown in Table 6, the relationship between the virtual recruitment environment in e-HRM and the recruitment process result with p-value of 0.157 which is not significant at $\alpha = 0.1$, thus H7 is rejected. Based on previous research, internet-based recruitment methods represent a high potential and opportunity for employers to expand their recruitment range and reduce recruitment costs at the same time. To achieve this goal, it requires the application of basic principles for designing an effective website [10], but there are challenges in its application such as selecting the right features and selecting the target market [10]. Issues related to the implementation of VRE on e-HRM that has not been resolved may cause the e-HRM function not running as expected.

5. Implication and Suggestion for Future Research

From the results of this study, there are several inputs that can be given, first, before implementing AI technology, it is better to have benchmarking with other companies that have successfully implemented this technology. Second, enriching knowledge about technological developments for HR advancement through e-learning, case study report or webinars with topics related to AI and HR, hopefully this could give a better understanding of benefit and impact from this technology. Third, creating an attractive e-recruitment web design based on know your customer (KYC) principle in order to determine features creation from candidate perspective and HR practitioners. Fourth, giving feedback to candidates who do not pass the recruitment process. And last, adding online interview and assessment features not only during the pandemic, hoped it will also apply to post-pandemic. However, this study has limitation, the small number of respondents, also lack of source of journal with topics related to the impact of AI, e-HRM and Virtual recruitment environment as well as the relationship in the form of quantitative research using candidate perspective. There are two novelty from this research study, first, target respondents from this research are user candidate, because candidates are
main target market from the recruitment industry [10]. Second novelty from this research, additional virtual recruitment environment as variable. For future research that can be developed from this research is user experience candidate on recruitment process.

6. Reference


Patterns of Spatial Modeling of The Economy; Human Capital and Poverty in 60 Regions in Southern Sumatera

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University of Lampung, Indonesia ¹,²,³,⁴

Abstract. This study tests spatial concepts which is calculated in each region of the 60 regions of South Area of Sumatra by analyzing the observed spatial patterns and spatial autocorrelation. The Spatial Analytical Regression (SAR) model was chosen to analyze the cases of spatial linkage and determine how the variables meet the requirements of the model. The analysis tool uses Expletory Spatial Data Analysis with Geographic Information Systems (GIS) and Geodes to analyze the status of the proportion of poor people using Moran I, LISA, and LISA cluster map statistics in 2015. The GRDP of Sumatra's 60 regions suggests a spatial relationship. That is, there should be a clustered pattern of regions with the same characteristics. The results of the Moran I scatter plot show the division of the Moran I quadrant. Eventually, this study shows how population proportions have a significant impact on GRDP and (HDI).

Keywords: GRDP, Moran I, Spatial Autoregressive Model.

1 Introduction

The focus of this study is to see if the development patterns in each region are based on the distribution of GDP in the economy. Currently, spatial units are a very hot topic, when the economy works according to the space of each region, each space works well, has a positive influence on each other, and has a positive spillover effect on neighboring areas. The regions are positive interrelationships [1]. And mutually beneficial. Therefore, this survey uses the approach and may be one of the surveys with the latest updates. Spatial and economic methods provided in dialogue and dialogue episodes.

This study focuses on looking at the description of the economic pattern in 60 Regions in South Sumatra in 2015-2019 how the spatial pattern of the economy through GRDP. The results of the distribution of GRDP in each region whether it has an economy with the same characteristics or different in each region [2]. The evaluation of the model used in the spatial regression takes elements of the Human Development Index and the Percentage of the Poor, taking these two variables to see a little picture of the influence of human capital and poverty on GRDP. In summary, the main purpose of this study is to analyze the spatial patterns and spatial autocorrelation of regional economic variables. In particular, the five states of South Sumatra are being discussed from an economic perspective. This at the same time serves as a contribution in the field of science with two points of view; spatial and economic.
2 Literature Review

Economic Growth Theory

This study is based on a literature study which shows that the economy has dimensions of space and time in the process. Regional development with regard to the spatial dimension of development activities is based on the idea that economic activities are distributed in an inhomogeneous space. Because the location has potential and relative value to other locations, activities with economic and social objectives will be spread according to the potential and relative value of the locations that support it. In the spatial concept, several explanations explain that neighboring relationships have positive and negative spillover effects, where the economy of a region can be said to have the same or different characteristics [3].

In mainstream economics, economic growth theory provides several factors that may be responsible for promoting regional performance [4]. Discussions on the determinants of long-term economic growth originated in the Thoreau growth model (1956) and may include human capital [5], migration (Barro and Salai Martin 2003), and externalities of growth [6]. Enlarged by many others. Elhorst (2010) used spatial economic methods to focus on spatiotemporal models, but they studied only the process of economic growth at the spatial level [7].

Spatial Linkage

Spatial linkage is a relationship that occurs because the interaction depends on adjacent observations, that is, region j. Here is i; j. Interactions can occur between regions in the form of economic relationships. For example, the flow of goods and services, the movement of labor, the inflow of income, remittances, etc. [8]. Interaction can also occur in the field of technology, namely, the diffusion of technology from areas with higher technology to areas with lower technology. In addition, the political situation in a region will affect policies in that region which will have an impact on neighboring regions [9].

Gross Regional Domestic Product

One of the important indicators to determine the economic conditions in a region/province in a certain period is shown by data on Gross Regional Domestic Product (GRDP), either on the basis of prevailing prices or on the basis of constant prices. The definition of GRDP by National Planning Bureau is the amount of value added generated for all business units in a region, or the total value of final products and services generated by all economic agents in a region. GRDP calculations can be performed using two methods: direct and indirect (attribution) [10].

The State of Art

The growing interest in spatial perspectives is driven by significant changes in theoretical focus. It provides a new theoretical perspective for analyzing phenomena such as peer effects, environmental effects, spatial spillover effects, and network effects [11]. In addition, many other similar studies have emerged on the relationship between spatial and economic variables. Spatially, the role of Geographic Information Systems (GIS) can better explain the link between these two factors. As stated in [12], GIS does more than just display a map. But beyond that, the process of economic development at the local, regional and state levels. Most existing systems use GIS analytics to find suitable locations for different types of development. At a minimum, research on economic impact analysis, space policy design, identification of potential cluster areas, identification of important social relationships, and web-based GIS [13]. Indeed, the examples of economic impacts in the realm presented by GIS show a close link between meeting human needs and degrading the quality of the environment. GIS provides this functionality. Ultimately, this can also explain the restrictions on access to available economic resources and their changes [14].
3 Methodology and Data Analysis

A. Influence Model Using Spatial Concept
1. Spatial Autoregressive Model (SAR)
There are two types of spatial modeling based on the type of spatial data. Spatial modeling based on points and spatial modeling based on area is. Spatial autoregressive model (SAR) is one of the area-based spatial models. The spatial regression model can describe the relationship between the independent variable (X) and the dependent variable (Y) by incorporating the positional effect of the data, then the equation becomes:
\[ y = \rho Wy + \beta X + \varepsilon \]  
(3)
Where:
- \( Y \): Dependent variable vector
- \( \rho \): Parameters of spatial autocorrelation coefficient on dependent variable
- \( W \): Weight Matrix
- \( \beta \): Regression parameter coefficient vector
- \( X \): Independent variable matrix
- \( \varepsilon \): Error vector

The hypothesis used for Auto Replay Aggregate Regression is:
- \( H_0: \rho = 0 = 0 \) (parameter is considerably)
- \( H_a: \rho \neq 0 \) (parameter is not important)

2. Spatial Error Model
Describe the equation for (SEM) as followed:
If \( \rho = 0 \) dan \( \lambda \neq 0 \), then, the equation:
\[ y = X\beta + u \]  
(4)
\[ u: \lambda Wu + \varepsilon, \varepsilon \sim N(0, \sigma^2 I) \]
Where:
- \( y \): Dependent variable vector
- \( X \): Measure-independent variables
- \( \beta \): Parameter regression Parameter coefficient vector
- \( \lambda \): Spatial autocorrelation coefficient of parameter
- \( \varepsilon \): Error vector
- \( W \): Weight criterions

2. Spatial Error Model (SEM)
Matrix needs grouping Area with intersections. Between the sides of the area and the angle, Where the region’s \( W_{ij} = 1 \), side by side (common side), Angle (common vertices). In problem areas \( W_{ij} = 0 \) in other areas

\[ u_i = \sum_{j=1}^{n} w_{ij} + \varepsilon_i \]

If \( \lambda = 0 \) and 0, then the equation becomes:
- \( H_0 : \lambda = 0 \) (Parameter is significant)
Ha: $\lambda \neq 0$ (Parameter is not significant)

Lagrange Multiplier (LM) Test

Spatial effects, or spatial dependencies, are caused by the correlation between regions. The effects of spatial dependence, namely lag dependence and spatial residuals, can be tested using the LM test. The results of the LM test are used as the basis for building a spatial regression model. The hypothesis used in the LM test is: The Lagrange multiplier (LM) test implements two hypotheses:

1. For SAR
   \[ H_0: \lambda = 0 \] (There is no spatial dependency between dependent variables)
   \[ H_a: \lambda \neq 0 \] (There is a spatial dependency between the dependent variables)

2. For SEM
   \[ H_0: \rho = 0 \] (There is no spatial dependency between dependent variables)
   \[ H_a: \rho \neq 0 \] (There is a spatial dependency between the dependent variables)

Determination of the Best Model

How to choose the best model based on the value of Log Likelihood (LL), Akaike's Information Criterion (AIC), and Coefficient of Determination (R2) [11]. However, observing data must be traced back to the theory of fundamental problem to determine which model to describe more accurately. [15].

Log-Likelihood

In statistics, the likelihood ratio test is a statistical test used to compare the correctness of two models. When using the likelihood ratio log, this statistic is called the log-likelihood ratio statistic, and the higher the value of the log-likelihood (LL), the better the model, and the probability of this test statistic. You will get a distribution.

Akaike Info Criterion

The Akaike Information Criterion is a measure of the relative goodness of the statistical model developed by Hirotugu Akaike as the Akaike Information Criterion (AIC) and first published by Akaike in 1974. Akaike Information Criterion (AIC), a general format:

\[ \text{AIC} = -2\ln(L) + 2K \]

Where K: the number of parameters in the statistical model. L: Maximum value of the probability function of model estimation.

4 Research Result and Discussion

1. Research Result

Evaluation of Spatial Regression Modeling

The spatial model is selected using the Lagrange multiplier (LM) as the initial identification. The Lagrange multiplier (LM) is used to detect spatial effects more accurately using lag, error, or both (lag and error). The spatial linkage test was performed with queen adjacency weighting. The results of the Lagrange multiplier (LM) test in Table 5 are as follows:
### Table 1. Result of Lagrange Multiplier (LM)

<table>
<thead>
<tr>
<th>Spatial Dependence Test</th>
<th>Score</th>
<th>P-Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moran’I (error)</td>
<td>4,0497</td>
<td>0,00005</td>
</tr>
<tr>
<td>LM (lag)</td>
<td>10,4709</td>
<td>0,00012</td>
</tr>
<tr>
<td>LM (error)</td>
<td>12,6766</td>
<td>0,00037</td>
</tr>
<tr>
<td>LM (SARMA)</td>
<td>16,5847</td>
<td>0,00025</td>
</tr>
</tbody>
</table>

*Source: Result Estimation of Geoda Regresi spasial data calculated, 2021.*

In the LM test, the p-value (0.00012) < 0.05 concluded that the SAR modelling H0 was correct. was denied. = 0.05, LM Robust value is 0.04805. In order for the model to be spatially dependent, it must configure the spatial model used. This is a spatial autoregressive model (SAR).

### Table 2. Comparison of classical regression model and spatial regression model

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>OLS</th>
<th>SAR</th>
<th>SEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>R²</td>
<td>0.096195</td>
<td>0.184754</td>
<td>0.167744</td>
</tr>
<tr>
<td>AIC</td>
<td>156,642</td>
<td>185,531</td>
<td>182,809</td>
</tr>
<tr>
<td>Log Likelihood</td>
<td>-75,3208</td>
<td>95,765740</td>
<td>95,4047</td>
</tr>
</tbody>
</table>

*Source: Result Estimation of Geoda Regresi spasial data calculated, 2021.*

Based on Table 6. It shows the AIC at SAR185,531 with log likelihood 95,765740 and R20.184754. This value indicates that the SAR spatial model is superior to other spatial models. The SAR model was chosen to analyze the case of spatial correlation. From the model, we can conclude that the model is a good model if it has the lowest AIC value and the highest log-likelihood and R2 value. Based on the table, you can get the information that SAR is the best model.

### Table 3. SAR Estimation Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std.Error</th>
<th>Z-Value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONSTANT</td>
<td>3,73651</td>
<td>0,689875</td>
<td>5,41622</td>
<td>0,00000</td>
</tr>
<tr>
<td>ρ</td>
<td>0,0667877</td>
<td>0,163682</td>
<td>0,408033</td>
<td>0,68325</td>
</tr>
<tr>
<td>PPM</td>
<td>-0,0308992</td>
<td>0,013854</td>
<td>-2,23035</td>
<td>0,02572</td>
</tr>
<tr>
<td>IPM</td>
<td>0,0180394</td>
<td>0,00725482</td>
<td>2,48653</td>
<td>0,01290</td>
</tr>
</tbody>
</table>

R² = 0,184754
Loglikelihood of Log: 95,765740
Criterion of Akaike =185,531
Error Term α = 0,05%

*Source: Result Estimation of Geoda Spatial Regression data calculated*

**SAR which will be calculated is:**

\[ \hat{y}_i = 0,0667877 \sum_{j=1, j \neq i}^{n} w_{ij}y_{i} + -0,0308992_{PPM_i} + 0,0180394_{IPM_i} + \varepsilon_i \]
The SAR model of the spatial lag coefficient value ($\rho$) is significant, meaning that there is a dependency on the lag between regions. The value of obtained is 0.0667877, which means that the magnitude of the spatial interaction between 60 regions in South Sumatra which have similar characteristics is 0.0667877.

PDRB$_i$: Constanta PDRB ADHK in 60 regions in South Area of Sumatra
PPM$_i$: Percentage of low income people in 60 regencies/cities in South Area of Sumatra.
IPM: Human Development Index in 60 regencies/cities in South Area of Sumatra
W$_{ij}$: Weighting criterions
$\epsilon_i$: Residual of 60 regencies/cities in South Area of Sumatra.

2. Discussion of Research Results
From the results of the survey conducted, the results obtained by the model are as follows.

a) The defect rate coefficient value of PPM: 0.0308992 has a negative and significant effect on GRDP. If the regency / city defect rate increases by 1% and is independent, GRDP decreases by 0.0308992% for every 1% increase in the variable. Variables, spatial weight matrices (w), and residuals ($\backslash$/) are considered constant, so the defect rate can be reduced by 0.0308992 percent.

b) HDI: The Human Development Index coefficient value of 0.0180394 has a positive and significant impact on GRDP. If the Human Development Index value is in the regency, then for every 1% increase in the variable, the GRDP will increase by 0.0180394%. The rupiah and independent variables, the spatial weight matrix (w) and the residuals ($\backslash$/) are assumed to be constant, so the proportion of poor people can increase by 0.0103934 percent.

5 Implication and Suggestion for Future Research

Implication

a) GRDP ADHK is known to have a positive Moran's I statistic among the 60 provinces / cities in the five states of South Sumatra. This shows that there is a spatial relationship in the form of positive autocorrelation. This means that the state GRDP's 2015-2019 ADHK Regency / Cities show a clustered pattern.

b) The Moran scatter plot shows that there are 2 regions in quadrant I, HH (High-High), 28 regions in quadrant II LH (Low-High), 5 regions in quadrant III, and 25 regions in quadrant IV. The LISA cluster map describes a grouping of GRDPs showing 11 regions covering high-high, 16 regions covering low-low, and one region covering high-low. The LISA significance map consists of 10 regions with a significance level of 0.05, 11 regions with a significance level of 0.01, and 7 regions with a significance level of 0.001.

SAR model was selected to analyze cases of spatial linkage where P-Score, AIC, R2, and log-likelihood meet the requirements for using the model.

d) SAR model of the spatial delay factor ($\rho$) value is important and means that there is a delay dependency between the regions. The proportion of the poor has a significant negative impact on GRDP, the Human Development Index, and a positive impact on GRDP.
Suggestion

a) 60 provinces / cities really need all governments to continue their essentially regional policies, depending on the characteristics of each region of the population. Appropriate and accurate poverty hacking policies in one region are examples in other regions. Neighbors are all other areas.

b) Human capital remains an important part of economic development, with five states with 60 provinces / cities in South Sumatra certainly having human capital, and some research and policy on human capital. Providing guidelines for continuous growth, policy coherence, and regional oversight, education in the middle of continuous HDI is becoming an important factor in South Sumatra's economy.

References

Analysis Impact of Coronavirus Disease (Covid-19) Pandemic on Income, Working Hours and Customers of Merchants in Pahawang Island Tour

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Abstract. The objective of the research is identify the impact of coronavirus disease (Covid-19) on income, working hours and customers of merchant at Pahawang Island Tour, Pesawaran. The research was conducted by using primary data with quantitative descriptive analysis method and Wilcoxon Signed Rank test to determinate the impact of Covid-19 case. The results of this study showed that pandemic Covid-19 affected the income, working hours and the amount of merchant customer in Pahawang Island Tour, Pesawaran. Merchants gained more decreased in their income, working hours and customers of merchants during the Covid-19 pandemic.

Keywords: Tour, Income, Working Hours, Customers, Merchants, Covid-19.

1 Introduction

The development of tourism tends to show a very rapid progress from year to year, because more and more people get higher incomes and the socio-economic changes in countries in the world are the reasons for the development of tourism. Tourism foreign exchange is one of the reasons related to the importance of the tourism sector, where in the last five years, tourism foreign exchange earnings have continued to increase with an average annual rate of US $14.5 billion. When compared to other service exports, the share of foreign exchange for tourism is the highest, reaching 54% of total service exports. The tourism services balance surplus was also maintained, supported by a consistent increase in tourism foreign exchange. In addition, amidst the contraction in exports of major commodities in recent years, the improving performance of tourism has placed the foreign exchange value of the tourism sector as the second largest after coal exports (Bank Indonesia, 2019)

In addition, in 2019 the number of tourist visits to Indonesia increased by 16.1 million or an increase of 1.88% compared to the previous year. Likewise in Lampung Province, according to the Lampung Province Tourism Office, the tourism sector is one of the income supports. The following is the number of domestic and foreign tourist visits in Lampung Province in 2014-2018:
In 2014-2018, the trend of growth in the Number of domestic and foreign tourists continued, the highest tourist growth occurred in 2016-2017, namely domestic tourists amounting to 54.33 percent and foreign tourists 58%. Pahawang Island has the characteristics of a beautiful underwater charm, both in the form of coral reefs and marine life in it. The leading tourism activity that can be done on Pahawang Island, namely snorkeling, where the diversity of the underwater world and marine life is still awake and staying on the island with various available homestays is a unique characteristic, far from urban areas, allowing tourists to relax their minds by watching the sunset and sunrise from Pahawang Island. In addition, access to Pahawang Island itself can only be passed by boat, so this is what makes Pahawang Island tourism different from other tourist attractions.

The number of tourist visitors to Pahawang Island itself in 2017-2019 continued to decrease because of the eruption of Mount Anak Krakatau that occurred during 2017-2018 in the form of a weak explosive eruption (strombolian) and a tsunami that hit the Sunda Strait on December 22, 2018 which caused the number of visitors to reduce. So, at the beginning of 2020 was a period of recovery for Pahawang Island tourism to begin to rise from previous years.

From April to June 2020 the government closed tourism activities so that there were no activities related to tourism on Pahawang Island. In August the government gave allowance the people to conduct tourist activities. The number of visitors kept ups and downs, there were many
restrictions would be found in several areas, therefore they affected the tourism Activities. Moreover, the situation took place in December, especially a few days before the end of the year Pahawang Island was closed to avoid year-end celebrations at tourist sites. Tourism activities will be affected by various situations and circumstances, including the Covid-19 pandemic. The risk is greater when people are still traveling amidst Covid-19 cases in Lampung Province. This will ensure the safety of visitors, namely they will be infected with the corona virus. Related to this risk, there will be a change in the number of visitors on Pahawang Island and income traders on Pahawang Island. Based on previous research, an event will have an impact on tourism. According to [1] that the earthquake in Italy 2009 offered new accommodation to government survivors (the so-called CASE project).

That was earthquake resistant, sustainable, environmentally friendly and compatible [2]. In addition, normal floods usually have a positive impact on agricultural growth and even on the growth of other economic sectors. However, in contrast to research [3], natural disasters and unexpected events generally have a negative impact, resulting in reduced tourist arrivals after an event. In line with the research of [4], that the problem of the ability of African countries to achieve the SDGs target and the potential for increased risk of instability, migration across African countries, decreased trade and opportunities for economic cooperation as a consequence of climate change. exacerbates the negative consequences. In addition, research related to differences before and after changes in conditions, namely research from [5]) results from a model related to the impact of natural disasters in Sri Lanka at this time on inequality and changes in different levels of income. Next, the research results of [6], that during the Covid-19 pandemic, the number of clients in hypermarkets and supermarkets has decreased significantly, while convenience stores, butchers and grocery stores have gradually gained popularity.

Based on differences in the results of various previous studies and the findings of researchers during the pre-survey, namely changes in the conditions of the presence of Covid-19, it attracted the author to conduct this research regarding the impact of the non-natural disaster Coronavirus Disease (Covid-19) on Pahawang Island tourism, by taking the variables of income, working hours, and the number of merchant consumers before and during the Covid-19

2 Literature Review

The impact of natural and non-natural disasters on the economic aspect would cause the growth of economy slow down, due to obstruction of all economic activities would cause an economic decline, where before the pandemic took place, the community was used to carryout their daily economic activities, but after the pandemic, they were encouraged to carry out activities from home and reduce activities outside the home, including tourist activities for tourists. The impact of natural and non-natural disasters on the economic aspect would cause the growth of economy slow down, due to obstruction of all economic activities would cause an economic decline, where before the pandemic took place, the community was used to carry out their daily economic activities, but after the pandemic, they were encouraged to carry out activities from home and reduce activities outside the home, including tourist activities for tourists
3 Methodology and Data Analysis

Location of the Research
This research was conducted in Pahawang Island and Ketapang pier which were the main entrances with 4 piers to Pahawang Island. This location had various advantages as an attraction, easy accessibility, it was about 1 hour from Bandar Lampung to reach the location and the road is quite good. In addition, tourism activities such as snorkeling and staying at a homestay were carried out and become a leading activity in Pahawang Island tours.

The Technique of Analizing Data

In analyzing data, the researcher used the normality and significance difference test. The normality test was carried out to assess the validity of the data using the Komogorov Smirnov (Liliefor) test with the SPSS version 20 program to determine whether the data was normally distributed or not. Next, a paired sample t-test could be done for normally distributed data or the Wilcoxon signed rank test for data not normally distributed. The significance difference test was carried out to test the difference between paired data through the before and after observation data. Operational variables were used to this study use income, working hours and the number of consumer merchants.

1. Income: traders' perceptions of income earned per day before and during the Covid-19 without deducting other expenses. This merchant's income was expressed in rupiah (Rp).
2. Working Hours: the time was used by traders to sell per day before and during the Covid-19 in hours.
3. Number of Consumers: people who bought merchandise per day before and during the Covid-19 in units of people.

4 Research Result and Discussion

This study used a sample of 51 traders. Descriptions of respondents in this study on Pahawang Island tourism included gender, age, education level, number of dependents and length of trading. Normality test was performed to determine whether the data had a normal distribution or not. The method used to test for normality was using the Kolmogorov-Smirnov test. Here whether the sig value <0.05, so the hypothesis was normally distributed was rejected. The results of the normality test in the study were as follows:

<table>
<thead>
<tr>
<th>Tests of Normality</th>
<th>Kolmogorov-Smirnov*</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nama</td>
<td>Statistic</td>
<td>Df</td>
</tr>
<tr>
<td>Before Covid-19 Income</td>
<td>0.198</td>
<td>51</td>
</tr>
<tr>
<td>During Covid-19 Income</td>
<td>0.164</td>
<td>51</td>
</tr>
<tr>
<td>Before Covid-19 Working Hours</td>
<td>0.203</td>
<td>51</td>
</tr>
</tbody>
</table>

Table 1. Normality Test Results
The results of the normality test above indicated that the data were not normally distributed. This can be seen in the calculated Kolmogorov-Smirnov sig value which was smaller than 0.05 ($\chi^2$-table).

Furthermore, by using the Wilcoxon signed rank test, where this test could see the relationship of each variable between before and during the Covid-19 pandemic. This test was carried out as a test of differentiation because the respondent's data was related to different times before and during the Covid-19 pandemic. Based on the results of the analysis, it could be seen whether before and during the existence of Covid-19 could make a difference in income, working hours and the number of consumer merchants on Pahawang Island tours.

Table 2. Wilcoxon Signed Rank Test Results of Income Variables Before and During the Covid-19 Pandemic

<table>
<thead>
<tr>
<th>Variable</th>
<th>BEFORE</th>
<th>DURING</th>
<th>Z</th>
<th>Asymp. Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td></td>
<td></td>
<td>-6.032b</td>
<td>.000</td>
</tr>
</tbody>
</table>

Based on the results of the Wilcoxon different test in table 3, there was a significant difference in income before and during the coronavirus (Covid-19) in Pahawang Island tourism at a 95% confidence level. It indicated the asymp.sig (2-tailed) value, which was 0.000 less than 0.05.

The difference between the income level and the highest income before the Covid-19 was Rp. 3000,000/day and the lowest income was Rp. 30,000/day. Meanwhile, the highest income of traders during the Covid-19 was IDR 1,200,000/day and the lowest was IDR 20,000/day.

Based on the theory that income continued to increase as one of the factors measuring the level and welfare of people's lives [7]. However, this was not in line with the research results, that in Pahawang Island tourism income decreased. It was caused by the restrictions of the activities, many visitors only stayed for a short time (one day) so that their tour activities Pahawang Island did not spend for a long time. Of course, it took place because visitors afraid of the spread of pandemic out of circumstance.

It was accordance with the research of [8], that the household-level fixed effects regression, the results showed that the income from work decreased almost one-third and income from gifts and remittances was reduced more than one-third after the beginning of the pandemic.

Table 3. Wilcoxon Signed Rank Test Variable Results of Working Hours Before and During the Covid-19 Pandemic

<table>
<thead>
<tr>
<th>Variable</th>
<th>BEFORE-DURING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working Hours</td>
<td>-4.133b</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.000</td>
</tr>
</tbody>
</table>
Based on the results of the Wilcoxon different test in table 4, there was a significant difference in working hours before and during the coronavirus (Covid-19) on Pahawang Island tours at a 95% confidence level. It indicated that the asymp.sig (2-tailed) value, which was 0.000 less than 0.05.

There were 29 samples had no different duration of their working hours. They did their businesses at or near their homes, so they spent their time to sell their goods that the tourists needed. Based on the human capital theory [9], related to investment in human resources (human investment theory), which is a sacrifice in the hope of obtaining a better income in the future. This research is in line with the finding of respondents who do not experience changes in trading time, which is an effort to make the most of it in the hope of getting a high income.

According to (Anwar, 2020), which reveals that traders maintain and begin to change their operational working hours to 24 hours, in an effort to retain customers and traders' businesses. In addition, previous research has revealed that many countries have conditioned store openings to order special shopping hours for vulnerable groups, a practice that can be extended to home delivery so that sales can be maximized [11].

<table>
<thead>
<tr>
<th>Table 4. Results of the Wilcoxon Signed Rank Test Variable Number of Consumers Before and During the Covid-19 Pandemic</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEFORE</td>
</tr>
<tr>
<td>Z</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
</tr>
</tbody>
</table>

Based on the results of the Wilcoxon different test in table 4, there is a significant difference in the number of consumers before and during the coronavirus (Covid-19) in Pahawang Island tourism at a 95% confidence level. This is indicated by the asymp.sig (2-tailed) value, which is 0.000 less than 0.05.

There was difference in the number of merchant consumers on Pahawang Island tours before and during the coronavirus disease (Covid-19). The highest number of merchant consumers before Covid-19 reached 100 people per day and the lowest was 10 people per day. Meanwhile, when there was a pandemic, the highest number of merchant consumers was only 30 people per day and the lowest was only 4 people per day. The demand of a person or society for an item is determined by various factors, one of which is consumer taste [12]. Thus, even though in 2020 the number of visitors has increased, the results of the study show that there is a decrease in the number of merchant consumers, this is due to the fact that visitors only eat food and drink provided by the inn or villa. In addition, visitors can bring their own food and drinks from outside so that cleanliness and safety are more guaranteed.

The statement above is accordance with [13], the Covid-19 pandemic and the lockdown and social distancing mandates have disrupted consumer buying and shopping habits. Consumers are learning to improvise and learn new habits. For example, consumers cannot go to the store, so that shop comes to the house.

5 Implication and Suggestion for Future Research

This study aimed at determining the impact of the coronavirus disease (Covid-19) pandemic on income, working hours and the number of consumer traders in Pahawang Island tours,
Punduh Marga, Pesawaran. Based on the formulation of the research problem used, as well as data analysis that had been carried out and the discussion that had been illustrated. There were three conclusions as follow:

1. There was a significant difference in the income level of traders before and during the coronavirus disease (Covid-19). Traders had a tendency to decline in income during the pandemic.

2. There were significant differences in the level of working hours of traders before and during the coronavirus disease (Covid-19). Traders had a tendency to decrease their working (operational) hours during the pandemic.

3. There were significant differences in the level of the number of consumers before and during the coronavirus disease (Covid-19). Traders were experiencing a downward trend in the number of consumers during the pandemic.

6 Reference


Impact of Selected Factors Towards Shareholder Value Creation

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Abstract. The purpose of this research was to obtain empirical evidence about the effect of capital structure, Good Corporate Governance, Free Cash Flow, and audit quality towards shareholder value creation. The sample in this research was selected by using purposive sampling. The secondary data were analyzed by using multiple linear regression method. The total amount of sample in this research were 9 companies in trade, service, and investment sector. The results of this research were that capital structure had no negative effect towards shareholder value creation, board size had significant negative effect towards shareholder value creation, commissioner independence and audit quality had no positive effect towards shareholder value creation, and FCF had significant positive effect towards shareholder value creation. The implication of this research was that company needed to maintain an adequate level of free cash flows in order to be able to pay debt, reduce invested capital, and increase EVA.

Keywords: audit quality, capital structure, Economic Value Added, Free Cash Flow, Good Corporate Governance, shareholder value creation.

1 Introduction

Indonesia is a developing country with great economic potential. The investment climate in Indonesia is getting better, as evidenced by the Jakarta Composite Index (JCI) which has increased over the last 10 years. At the end of 2009, the JCI was at the level of 2,534.36. At the end of 2019, the JCI was at the level of 6,299.54. This means that the JCI has increased by 148.6% in the 10-year period. One sector that is quite attractive in the Indonesian capital market is the trade, services and investment sector. It is known that in the last 10 years, the IDX Trade, Services and Investment Index has increased by 179.2%. Companies in this sector are suspected of having an advantage in terms of the ability to produce operational performance that exceeds performance expectations measured by cost of capital so that it reflects the creation of shareholder value in companies in this sector. One example of the importance of shareholder value creation is shown by PT Ace Hardware Indonesia Tbk (ACES) which is included in the trade sector. At the end of 2015, the closing price of ACES shares was Rp825 per share. Meanwhile, at the end of 2019, the company's share price had increased to Rp1,495 per share. The company's share price increased by 81.2% during 2016-2019, much higher than the 37.2% increase in the JCI in the same period. The increase in the company's stock price reflects the high interest of investors to invest by buying company shares. One of the factors that attract investors to invest is the company's EVA value which is always positive in the 2016-2019 period. Investors in the capital market also think that ACES shares deserve to be valued above their book value. This is reflected in the market to book ratio of 5.72 times. This means that investors in the capital market value the company much higher than the company's book value, which is 5.72 times the company's book value.

According to Suripto [1], companies need to pay attention to things that can affect the creation of value for shareholders so that companies can generate net operating profit after tax that exceeds the cost of capital. When the net operating profit after tax generated exceeds the
cost of capital, this condition is referred to as shareholder value creation. According to Sharma and Grover [2], shareholder value creation is the return generated by the company above the cost of capital. Shareholder value creation can be measured using the Economic Value Added (EVA) method. Sabol and Sverer [3] defines EVA as the difference between the profit earned from operating activities and the cost of the capital used.

Various factors are estimated to affect shareholder value creation. Factors that are expected to affect shareholder value creation include capital structure. According to Subramanyam [4], capital structure is company funding in the form of equity and debt which is often measured in terms of the relative size of various funding sources. Capital structure is measured by DER. A low DER indicates a relatively low use of debt compared to equity. Thus, the company has adequate financial flexibility to expand which can increase the company's Earnings Before Interest and Tax (EBIT) so as to produce a higher Net Operating Profit After Tax (NOPAT) value. If the increase in NOPAT is accompanied by an optimal cost of capital, it will affect the increase in EVA. According to Marouan and Moez [5], board size is expressed as the number of directors in the company. An increase in the number of the board of directors can encourage an increase in financial performance resulting in an increase in NOPAT and decrease of capital charges that will increase in EVA. According to Financial Services Authority Regulation (POJK) Number 33/POJK.04/2014, the board of commissioners consists of at least 2 members of the board of commissioners and the number of independent commissioners must be at least 30% of the total members of the board of commissioners. A high level of independence in the board of commissioners can increase transparency which will reduce information asymmetry between investors and management. This affects the decrease in the cost of equity capital borne by the company. With an increase in the company's operational performance as reflected in the amount of NOPAT and accompanied by a decrease in capital charges, this will have an effect on increasing EVA. Free Cash Flow (FCF) is the amount of cash flow that can be used freely based on company policy to buy additional investments, pay off debt, buy treasury shares, or increase liquidity [6]. A high FCF indicates the company has sufficient cash flow to continue its operational activities without requiring additional external funding [7]. This will reduce the amount of invested capital both from debt and equity so that capital charges are lower. Accompanied by optimal operational performance, reflected in the amount of NOPAT, a decrease in capital charges will affect the increase in EVA value as a measure of shareholder value creation.

Decision making by stakeholders requires a series of assessments and evaluations of company-related information, which can be found in audited financial statements. In conducting the audit process, the auditor must follow the Professional Standards of Public Accountants [8]. Companies that choose Big 4 KAPs that have a good reputation and this is seen as a positive thing for creditors because the company is considered more transparent, and has good quality financial reports, so that the company's risk is lower [9]. Lower risk can increase the interest of fund providers to provide funding for companies and decrease WACC so that it can reduce the company's capital charges. Accompanied by optimal operational performance, reflected in the amount of NOPAT gains, this decrease in capital charges will have an effect on increasing EVA value.

2 Literature Review

The theory used in this research is signal theory. The signal theory perspective emphasizes that companies can increase company value by giving signals to investors through reporting information related to company performance so that they can provide an overview of future business prospects. The higher the profitability number listed in the financial statements, the
better the company's financial performance, it will reflect the greater wealth of investors and the company's prospects in the future are considered more promising [10]. The dependent variable studied is shareholder value creation. Shareholder value creation is the return generated by the company above the cost of capital [2]. A company should be considered successful only if the return generated is better than the level of return expected to be received by investors in the capital market [11]. To create value for shareholders, companies must generate returns on invested capital that exceed the cost of capital [12]. Shareholder value creation can be measured using the EVA method [2].

Capital structure is the company's funding in the form of equity (equity) and debt (debt) which is often measured in terms of the relative size of various funding sources (Subramanyam, 2014). According to Sharma and Grover [2], capital structure can be determined with the help of the Debt-Equity Ratio (DER). DER is calculated by dividing total liabilities by total shareholder equity [4]. Liabilities are defined as creditors' rights to total assets and as existing debts and liabilities [13]. Equity is the residual interest in the entity's assets after deducting all liabilities [14]. Research by Sharma and Grover [2] and Wijanti et al. [15] shows that DER has a significant negative effect on EVA. Board size is expressed as the number of directors in the company [5]. According to Law (UU) Number 40 of 2007 concerning Limited Liability Companies, the board of directors is a company organ that is authorized and fully responsible for managing the company for the benefit of the company, in accordance with the aims and objectives of the company and representing the company, both inside and outside the court in accordance with the law. With the provisions of the articles of association. Research by Kabir et al [16] and Tariq and Naveed [17] shows that board size has a significant positive effect on EVA. This is different from the research of Nnado and Ugwu [18] which shows that board size has a significant negative effect on EVA. According to Law Number 40 of 2007, independent commissioners are appointed based on the decision of the GMS from parties who are not affiliated with the major shareholders, members of the board of directors and/or other members of the board of commissioners. The results of Kabir et al.'s [16] research show that board independence has a significant positive effect on EVA.

Free Cash Flow (FCF) measures the operating cash flow available to the company after purchasing the property, plant, and equipment needed to maintain current operations [7]. In other words, company management has the freedom to use Free Cash Flow funds because all funding needs for profitable operations and investments have been fulfilled [19]. The results of [20] research show that the Free Cash Flow (FCF) variable has a significant positive effect on EVA. On the other hand, the research results of Wijanti et al. [15] show that FCF has no significant effect on EVA. Audit quality can be said as a possibility that may occur, when an auditor audits the financial statements of a client, the auditor can see or find errors and also a violation that occurs in the client's accounting system. The audit results from KAP Big 4 are considered quality because they meet these factors [9]. The results of Hatane et al.'s [21] research show that audit quality has a significant positive effect on EVA in Malaysian companies.

Based on the description above, the hypotheses in this study are as follows:

Ha1: Capital structure proxied by Debt-Equity Ratio (DER) has a negative effect on shareholder value creation as proxied by Economic Value Added (EVA).

Ha2: Good Corporate Governance proxied by board size has a positive effect on shareholder value creation as proxied by Economic Value Added (EVA).

Ha3: Good Corporate Governance proxied by commissioner independence has a positive effect on shareholder value creation as proxied by Economic Value Added (EVA).

Ha4: Free Cash Flow has a positive effect on shareholder value creation as proxied by...
Economic Value Added (EVA).

Hₐ: Audit quality as proxied by KAP size (Big Four and non-Big Four) has a positive effect on shareholder value creation as proxied by Economic Value Added (EVA).

The research model used in this study is as follows:

![Fig. 1. Research Model](image)

3 Methodology and Data Analysis

The research method used in this study is a causal study. A causal study is a research study conducted to prove a cause and effect relationship between variables [22]. The following are the measurements of the variables in this study:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Formula</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent</td>
<td>EVA = NOPAT – Capital Charges</td>
<td>[12]</td>
</tr>
<tr>
<td>Independents</td>
<td>DER = ( \frac{\text{Total liabilities}}{\text{Shareholder's equity}} )</td>
<td>[4]</td>
</tr>
<tr>
<td>Board size</td>
<td>( \text{Board size} = \text{jumlah anggota dewan direksi} )</td>
<td>[23]</td>
</tr>
<tr>
<td>CIND</td>
<td>( \text{CIND} = \frac{\text{Jumlah dewan komisaris independen}}{\text{Jumlah total anggota dewan komisaris}} )</td>
<td>[24]</td>
</tr>
<tr>
<td>FCF</td>
<td>( \text{FCF} = \text{Cash flows from operating activities - Cash used to purchase PP&amp;E} )</td>
<td>[7]</td>
</tr>
<tr>
<td>Audit quality</td>
<td>( \text{Audit quality} = \text{Dummy 1 for Big 4, 0 for non-Big 4} )</td>
<td>[21]</td>
</tr>
</tbody>
</table>

The data used in this research is secondary data. In this study, the sample was selected using purposive sampling method. The criteria used in this research were companies which have been listed on Indonesia Stock Exchange (IDX) simultaneously for the year 2016-2019, not included in investment company subsector, published annual reports and/or annual financial statements that ended in December, using Rupiah, and have been audited by independent auditor, did not do share split or reverse share split, had listed their shares to be traded on IDX since the beginning of the research year, had interest-bearing debt balance on the beginning and/or end of the year and reported the amount of interest expense in the financial statements, generated positive Net Operating Profit After Tax (NOPAT), and had positive Free Cash Flow during the period of the research. The data analysis method in this study uses multiple linear regression with the help of data processing using SPSS (Statistical Product and Service Solutions).

4 Research Result and Discussion

The data in this study have passed the normality test and the classical assumption test. The value of the correlation coefficient (R) in this study was 0.867 or 86.7%, which shows high
(strong) correlation. Adjusted R Square value in this study is 0.702, which shows that the independent variables in this study can explain the variation of shareholder value creation of 70.2% and the remaining 29.8% is explained by other variables not tested in this study.

The results of the F statistical test show the F value of 15.115 with a significance value of 0.000, therefore it can be concluded that the independent variables simultaneously have a significant effect on the dependent variable. This shows that the sample regression function in estimating the actual value is correct or the model fits.

Table 2. Results of Statistical Test-t

<table>
<thead>
<tr>
<th>Coefficients</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>1.133E+12</td>
<td>6.37E+11</td>
<td>1.353</td>
<td>0.169</td>
</tr>
<tr>
<td>DER</td>
<td>-3.599E+16</td>
<td>1.032E+11</td>
<td>-0.342</td>
<td>0.735</td>
</tr>
<tr>
<td>SORT_BSIZE</td>
<td>-5.049E+11</td>
<td>2.693E+11</td>
<td>-1.787</td>
<td>0.080</td>
</tr>
<tr>
<td>SORT_CIND</td>
<td>-3.931E+11</td>
<td>6.573E+11</td>
<td>-0.593</td>
<td>0.556</td>
</tr>
<tr>
<td>SORT_FCF</td>
<td>1.01333E+06</td>
<td>1.047E+07</td>
<td>1.066</td>
<td>0.290</td>
</tr>
<tr>
<td>AD</td>
<td>1.312E+11</td>
<td>1.19E+11</td>
<td>1.134</td>
<td>0.265</td>
</tr>
</tbody>
</table>

Based on Table 2, the regression equations in this study were obtained, as follows:

$$EVA = -0.037 \times DER - 0.368 \times BSIZE - 0.037 \times CIND + 1.063 \times FCF + 0.134 \times AQ$$

Based on Table 2, Ha1 is rejected, which means that the capital structure as proxied by DER does not have a negative effect on shareholder value creation as proxied by EVA. A total of 25 out of 36 observations had a DER value below the average (0.9168). 22 of the 25 observations had an increasing fixed asset balance. The expansion carried out by the company caused NOPAT 12 observations which tended to increase by an average of 22.2% and invested capital which increased with an average increase of 12.92%. Thus, the low DER value which allows the company to expand so as to increase NOPAT does not necessarily make the company produce a higher EVA value. Companies also need to reduce capital charges through efficient management of funding costs in order to increase EVA.

In this study, Ha2 is rejected so that Good Corporate Governance as proxied by board size has a significant negative effect on shareholder value creation as proxied by EVA. This is in line with the research of Nnado and Ugwu [18] which shows that board size has a significant negative effect on EVA. Based on research data, observations with a large board size tend to have a higher WACC with an average of 9.70% compared to observations with small board size with an average WACC of 8.18%, where observations with a large board size have increasing capital charges and resulted in the decreasing value of EVA. Thus, board size tends to have a negative effect on EVA.

Ha3 is rejected, which means that Good Corporate Governance as proxied by commissioner independence does not have a positive effect on shareholder value creation as proxied by EVA. This is different from the results of research by Kabir et al. [16] which showed that board independence had a significant positive effect on EVA. The ineffectiveness of commissioner independence on EVA may be due to the fact that the majority of observations in this study have low commissioner independence, so that the assumption arises that the appointment of independent commissioners is more aimed at fulfilling the provisions related to the composition of independent commissioners in the board of commissioners of at least 30% of the total number of regulated members of the board of commissioners. Independent commissioners are also considered to have no significant contribution to operational performance. A lower cost of
The Impact of Organizational Capabilities on The Internationalization Success: An Empirical Study on IT Offshoring

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Abstract. This study is intended to comprehend the role of organizational capabilities namely internal-related, contextual-related, and relationship capabilities in attaining the offshore IT outsourcing success. The model that described the relationship between capabilities and outsourcing success was developed and tested empirically. A field survey was conducted by distributing questionnaires to Indonesian IT providers that yielded 62 valid responses. The data were used to examine the measurement and structural model by using PLS-SEM technique. Internal-related capabilities that encompass industry mastery and staffing, as well as relationship capabilities that consist of information exchange, coordination, and participation have a direct positive impact on outsourcing success. Meanwhile contextual capabilities i.e., managing the cultural and temporal difference influence outsourcing success through relationship capabilities. The study gives theoretical contribution on the internationalization theory, that is, the role of capabilities in managing the tangible and intangible resources in achieving offshore IT outsourcing success.

Keywords: Internationalization, IT, organizational capabilities, resource-based view.

1 Introduction

Internationalization is the process of increasing involvement of businesses in international level. Enterprises have alternatives of internationalization that encompass exporting, foreign direct investment, licensing, franchising, and joint venture. Among those internationalization alternatives, exporting is the most preferred alternative to enter foreign market due to its low risks and requirements of expenses and knowledge of foreign market [1]. The relatively simplicity of exporting enables small and medium enterprises (SMEs) involve in international level through marketing their products or services to foreign market. In Indonesia, SMEs have little involvement in exporting which their contribution to the national export is around 14% of total export [2]. One of SMEs which have opportunities to export their services is information technology (IT) providers or software houses. These opportunities are increasing since many companies in developing countries outsource their functions of IT such as application development, web design, ecommerce development to IT providers in developed countries which we call this practice as offshore IT outsourcing or IT offshoring. Although the IT offshoring market size is enormous and keep growing, the volume of Indonesian IT providers export is relatively low compared to other countries particularly India and China as the main IT offshoring destinations [3]. International IT clients perceive that Indonesian IT providers have
a lack of capabilities. Hence, they place Indonesian IT providers at the secondary class of IT providers.

Capabilities is a key factor to compete with the competitors. According to resource-based view (RBV) theory, a firm with rare, unique, valuable, and inimitable resources possesses the competitive advantage for facing the competition [4]. An organization can develop two kinds of resources i.e., technology-based resources or assets and system-based resources or capabilities. Assets embrace tangible or intangible things such as hardware or software that are relatively easy to emulate. Therefore, the firm should not rely on assets as sustainable competitive advantages. In contrast to assets, capabilities provide a long-term advantage for organization because these resources are not easy to be imitated by competitors. Due the vital role of capabilities in achieving the superior performance of organization, it is important for the enterprise to develop its capabilities.

The importance of capabilities contribution in achieving the success of IT offshoring has been highlighted in previous studies [5-8]. Although several studies have investigated the contribution of capabilities in achieving IT outsourcing success, there is a few studies which include more comprehensive capabilities in their studies. The study of Wibisono et al. [9] embraced three groups of capabilities i.e., interaction capabilities that consisted of communication and coordination, management capabilities that comprised of management support and talent management, and capabilities in managing the difference that included cultural understanding and managing the temporal distance. The similar study highlighted three broad capabilities namely management capabilities, relational capabilities, and technical capabilities [10]. The study of Wibisono et al. [9] identified the capability of organizational internal from the perspective of capability in organizational management and has not considered needed resources for IT outsourcing. Koo et al. [10] developed the model that considered the capabilities as one-dimension constructs from the bilateral perspective. Both previous models had different theory in which the model of Wibisono et al. [9] assumed that management capabilities and capabilities in managing the difference did not have a direct effect on IT outsourcing success, meanwhile the model of Koo et al. [10] assumed that organizational capabilities were independent. This study intends to develop previous models for IT offshoring success by considering internal-related capabilities from the perspective of resources provision and assuming that organizational capabilities that are considered important for the success of IT offshoring are not independent and have a direct impact on the outsourcing success.

The paper is organized as follows. Literature review covers descriptions of capabilities, outsourcing success, and their relationships. Next section describes the methodology and data analysis. The section of results and discussions explains and interprets the findings. The last section provides the implications and future research suggestions.

2 Literature Review

Outsourcing provides benefits for both vendor and client. The success of outsourcing can be said as the level of benefit achievement from the outsourcing [11]. There is no consensus on the criteria of outsourcing success. This study adopted the criteria of effectiveness for measuring the success of IT outsourcing. Effectiveness represents the conformity of delivered IT product with the client’s specifications. To build the client’s trust, IT provider must have abilities to deliver the project on-time and meet the specifications [12], fulfill the obligation and service level agreement [13]. IT providers also must make their clients satisfied with the project to build client's trust and commitment [14].
IT vendors need to develop their organizational capabilities for the success in carrying out offshore IT outsourcing from their clients. Those capabilities encompass internal-related, contextual-related, and relationship capabilities. The internal-related capabilities concern with managing needed resources for outsourcing success i.e., knowledge of client's domain business or industry mastery, and people [7, 15]. The contextual-related capabilities pertain to managing the cultural and temporal difference between vendor and client [16]. The relationship capabilities is that of cooperating with the client which includes information exchange, coordination, and participation [17].

Relationship between an IT provider and its client has the important role in achieving the IT project success. The success of IT outsourcing depends on the interaction of vendor and client such as information exchange, collaboration, as well as coordination [18]. The study of Grover et al. [11] displayed that there was a strong positive influence of interaction on the outsourcing success. Based on the study of Goles [19], capabilities in interaction increased the quality of information system design. The study of Han et al. [20] concluded that relationship management determined the IT outsourcing success. The study of Leischnig et al. [21] showed that there was a positive impact of inter-organizational relationship on the success of IT outsourcing. According to these explanations, we hypothesize that relationship capabilities influence positively outsourcing success (H1).

In the inter-organizational relationship like in the context of IT outsourcing, both vendor and client provide the needed tangible and intangible resources for the project [22]. These resources will have no impact on the success of a project if they are not used effectively [23]. The use of resources occurs when the IT project is developed, and at that stage both parties will communicate and coordinate each other. Capabilities in inter-organizational relationship have a critical role in transforming the resources such as domain business knowledge and skillful personnel into the IT outsourcing success [24]. Therefore, internal-related capabilities must be developed to ensure that the IT vendor can provide needed resources i.e., domain business knowledge and competent staff. Based on this, we hypothesize that the internal-related capabilities have a positive impact on the relationship capabilities (H2) and outsourcing success (H3).

There are challenges in an offshore outsourcing namely cultural and temporal differences between a vendor and a client which will bring into inter-organizational relationship problems such as miscommunication or difficulty in direct interaction. Cultural and temporal distance lead to communication, coordination, as well as control problems [25, 26]. According to Gunasekaran et al. [18] a contextual factor such as the heterogeneity of stakeholder has an impact of the inter-organizational relationship. Hence, the capability in managing cultural and temporal differences is essential to lessen the negative effect of those on the inter-organizational relationship. We hypothesize that contextual-related capabilities have a positive impact on the relationship capabilities (H4) and outsourcing success (H5).

Fig. 1 displays the framework which describes the relationship among the capabilities and their impact on outsourcing success.

3. Methodology and Data Analysis

We developed the questionnaires based on the operational definition of each capability. Outsourcing success was measured by three indicators that described the effectiveness of IT project execution [27]. The relationship capabilities involve three dimensions i.e., information exchange with 8 measurement indicators [28], coordination with 3 measurement indicators [21], and participation with 6 measurement indicators [29]. The internal-related capabilities which
consist of industry mastery dimension with 3 measurement indicators [15] and staffing dimension with 4 measurement indicators [30]. The contextual-related capabilities include dimensions of managing the cultural difference with 6 measurement indicators [31] and the temporal difference with 3 measurement indicators [32].

Fig. 1. Proposed model of offshore IT outsourcing success.

Data collection was conducted through online survey by dispersing the questionnaires to Indonesian IT companies. From the survey, we obtained data from 21 Indonesian IT companies which had experiences in dealing with the offshore IT projects. Because the analysis unit of study was a project and each company might have more than one project from foreign clients, then each company could provide more than one response. We received as many as 62 valid responses that were used to evaluate the proposed model. Table 1 displays the profiles of the offshore IT outsourcing projects that were managed by respondents.

Table 1. Offshore IT project profiles.

<table>
<thead>
<tr>
<th>Profile</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project duration</td>
<td></td>
</tr>
<tr>
<td>&lt; 6 months</td>
<td>51.61</td>
</tr>
<tr>
<td>6 months - 1 year</td>
<td>22.58</td>
</tr>
<tr>
<td>&gt; 1 year</td>
<td>25.81</td>
</tr>
<tr>
<td>Project team size</td>
<td></td>
</tr>
<tr>
<td>3 - 5 people</td>
<td>64.52</td>
</tr>
<tr>
<td>&gt; 5 people</td>
<td>35.48</td>
</tr>
<tr>
<td>&lt; Rp. 500 m.</td>
<td>53.22</td>
</tr>
<tr>
<td>Project value</td>
<td></td>
</tr>
<tr>
<td>Rp. 500 m. - Rp. 1 bn.</td>
<td>22.59</td>
</tr>
<tr>
<td>&gt; Rp. 1 bn.</td>
<td>24.19</td>
</tr>
<tr>
<td>Project owner's business</td>
<td></td>
</tr>
<tr>
<td>Information technology</td>
<td>67.74</td>
</tr>
<tr>
<td>Non-information technology</td>
<td>32.26</td>
</tr>
</tbody>
</table>
Considering the availability of small number of data and the introduction of new variables in the model, we applied Partial Least Squares – Structural Equation Modeling (PLS-SEM) for examining the model. According to Hair et al. [33] PLS-SEM is suitable for evaluating a model when there is a small number of data available, and non-normal distribution data. The rule of thumb in determining the sample number says that the minimum sample size should be 10 times the maximum number of arrowheads pointing at a latent variable in the model [33]. Our model has the maximum number of arrowheads pointing at a variable as many as 3 arrowheads that means we need at least 30 samples for examining the model. Because we have 62 valid samples that satisfied the required minimum number of samples, therefore we can proceed to the model examination stage.

Our model has the second order constructs i.e., relationship capabilities, internal-related capabilities, and contextual-related capabilities which each construct consists of first order constructs or dimensions. The first order constructs of relationship capabilities encompass information exchange, coordination, and participation. The internal-related capabilities involve two first order constructs namely staffing and industry mastery. The contextual-related capabilities consist of managing the cultural difference and managing the temporal difference dimensions. Each first order construct was measured by indicators that relevant with its operational definition. Because the model is a reflective-reflective type model, therefore the second order constructs were measured through repeated indicators approach in which all the indicators of their lower order constructs were assigned to the higher order constructs [33]. Hence, relationship capabilities, internal-related capabilities, and contextual-related capabilities were measured by 17 indicators, 7 indicators, and 9 indicators respectively. Fig. 2 displays the structure of first and second order constructs of the model in the Smart PLS-SEM software.

Using the PLS-SEM, we evaluated the model through two main stages i.e., the measurement model examination, and followed by the structural model examination. In the first examination we found that the second order construct of relationship capabilities had average variance extracted (AVE) value under 0.5 which means that the measurement model has not met the convergent validity. Due to the problem of the validity, we revised the measurement model by eliminating the item that the factor loading value was under 0.708 gradually. In the first revision, we eliminated the lowest factor loading valued item i.e., the Par2 indicator. The following examination of the revised model displays that all constructs have composite reliability above 0.6 and AVE above 0.5 as the threshold of internal consistency reliability and convergent validity [33]. Table 2 shows the reliability and validity value of each variable.

After we had the valid and reliable measurement model, we proceeded to the second stage i.e., the structural model examination. Based on the results of examination, we found that almost the structural model relationships are significant with p value < 0.01, except the relationship of contextual-related capabilities and outsourcing success (H2), and the internal-related capabilities and relationship capabilities (H5). Meanwhile H1, H3, and H4 are supported by data. Table 3 shows the results of structural model examination. The coefficients of determination (R² value) of outsourcing success and the relationship are 0.623 and 0.690 respectively. Therefore, we

<table>
<thead>
<tr>
<th>Profile</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project owner's country of origin</td>
<td>Asia</td>
</tr>
<tr>
<td></td>
<td>43.55</td>
</tr>
<tr>
<td></td>
<td>Australia</td>
</tr>
<tr>
<td></td>
<td>20.97</td>
</tr>
<tr>
<td></td>
<td>America</td>
</tr>
<tr>
<td></td>
<td>16.13</td>
</tr>
<tr>
<td></td>
<td>Europe</td>
</tr>
<tr>
<td></td>
<td>19.35</td>
</tr>
</tbody>
</table>
conclude that the ability of model to predict the endogenous are moderate because the $R^2$ values were above 0.50 [33].

![Diagram](image)

**Fig. 2.** Structure of the first and second order constructs.

**Table 2.** Reliability and validity of variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cronbach's Alpha</th>
<th>Composite Reliability</th>
<th>Average Variance Extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contextual-related capability</td>
<td>0.91</td>
<td>0.93</td>
<td>0.60</td>
</tr>
<tr>
<td>Coordination</td>
<td>0.92</td>
<td>0.95</td>
<td>0.87</td>
</tr>
<tr>
<td>Industry Mastery</td>
<td>0.93</td>
<td>0.95</td>
<td>0.87</td>
</tr>
<tr>
<td>Information Exchange</td>
<td>0.93</td>
<td>0.94</td>
<td>0.68</td>
</tr>
<tr>
<td>Relationship capability</td>
<td>0.93</td>
<td>0.94</td>
<td>0.51</td>
</tr>
<tr>
<td>Internal-related capability</td>
<td>0.89</td>
<td>0.91</td>
<td>0.61</td>
</tr>
<tr>
<td>Managing the Cultural Difference</td>
<td>0.91</td>
<td>0.93</td>
<td>0.70</td>
</tr>
<tr>
<td>Managing the Temporal Difference</td>
<td>0.81</td>
<td>0.89</td>
<td>0.72</td>
</tr>
<tr>
<td>Outsourcing Success</td>
<td>0.80</td>
<td>0.88</td>
<td>0.71</td>
</tr>
<tr>
<td>Participation</td>
<td>0.85</td>
<td>0.90</td>
<td>0.64</td>
</tr>
<tr>
<td>Staffing</td>
<td>0.87</td>
<td>0.91</td>
<td>0.73</td>
</tr>
</tbody>
</table>
Table 3. Hypothesis testing.

<table>
<thead>
<tr>
<th>Relationships</th>
<th>Path Coefficient</th>
<th>P Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: Relationship capabilities -&gt; Outsourcing Success</td>
<td>0.517</td>
<td>0.000</td>
</tr>
<tr>
<td>H2: Internal-related capabilities -&gt; Relationship capabilities</td>
<td>0.192</td>
<td>0.110</td>
</tr>
<tr>
<td>H3: Contextual-related capabilities -&gt; Relationship capabilities</td>
<td>0.672</td>
<td>0.000</td>
</tr>
<tr>
<td>H4: Internal-related capabilities -&gt; Outsourcing Success</td>
<td>0.515</td>
<td>0.001</td>
</tr>
<tr>
<td>H5: Contextual-related capabilities -&gt; Outsourcing Success</td>
<td>-0.201</td>
<td>0.254</td>
</tr>
<tr>
<td>Contextual-related capabilities -&gt; Managing the Cultural Difference</td>
<td>0.970</td>
<td>0.000</td>
</tr>
<tr>
<td>Contextual-related capabilities -&gt; Managing the Temporal Difference</td>
<td>0.833</td>
<td>0.000</td>
</tr>
<tr>
<td>Relationship capabilities -&gt; Coordination</td>
<td>0.876</td>
<td>0.000</td>
</tr>
<tr>
<td>Relationship capabilities -&gt; Information Exchange</td>
<td>0.939</td>
<td>0.000</td>
</tr>
<tr>
<td>Relationship capabilities -&gt; Participation</td>
<td>0.637</td>
<td>0.000</td>
</tr>
<tr>
<td>Internal-related capabilities -&gt; Industry Mastery</td>
<td>0.848</td>
<td>0.000</td>
</tr>
<tr>
<td>Internal-related capabilities -&gt; Staffing</td>
<td>0.902</td>
<td>0.000</td>
</tr>
</tbody>
</table>

4. Research Result and Discussion

The purpose of study is to examine the relationship among organizational capabilities as the second order construct, and their impact on offshore IT outsourcing. Our study displays that all first order constructs are significantly part of their second order construct. Contextual-related capabilities have strong relationships with its first order constructs i.e., managing the cultural difference (0.970) and managing the temporal difference (0.833). Relationship capabilities have strong relationships with coordination (0.876) and information exchange (0.939) and a moderate relationship with participation (0.637). Internal-related capabilities have strong relationships with staffing (0.902) and industry mastery (0.848). These findings are consistent with previous studies that internal, contextual, and relationship related capabilities have multi dimensions [9, 16, 17].

The study of Wibisono et al. [9] which focused on the management-capability found that it had two dimensions i.e., talent management and top management support, meanwhile our study which focuses on the resources provision displays that industry mastery or business domain knowledge and personnel are important dimensions of internal-related capabilities. Our study also confirms the findings of Wibisono et al. [17] that information exchange, coordination, and participation are essential dimensions of relationship capabilities.

In this study we examine the impact of internal-related, contextual-related, and relationship capabilities on outsourcing success. The findings indicate that internal-related and relationship capabilities have direct impact on the outsourcing success. These results align with the study of Koo et al. [10] that internal-related capabilities influenced IT outsourcing success, and the study of Wibisono et al. [17] that displayed significant direct effect of interaction capability on IT outsourcing success. The IT provider should have internal-related capabilities by providing competent staffs for the project and mastering client’s domain industry knowledge because these capabilities can aid the provider in developing and delivering the IT products such as an application or web design which meet or exceed client's expectations. Capabilities of relationship
that demonstrated by exchanging information accurately and timely, managing the interdependency of tasks with the client effectively, and involving in problem solving and decision making actively can contribute to the good IT project delivery.

From the study, we also find that contextual-related capabilities have no direct impact on the outsourcing success, but these capabilities have significant impact on relationship capabilities. The insignificant direct effect of these capabilities on the outsourcing success is due to the use of outsourcing success indicators that stressed on the technical aspect i.e., meeting the specified requirements. This finding is consistent the study of Wibisono et al. [16] that capabilities in managing the difference between a provider and a client had impact on the interaction of both parties. The interaction between company and its client could be smooth if the cultural and temporal difference are managed well. Therefore, IT provider should understand client's culture such as behavior, language, ethic; as well as overcome the difference of time zone by managing the work time of personnel.

Our study obtains unexpected results of insignificant relationship between internal-related capabilities and relationship capabilities. Most Indonesian IT providers served the foreign client that came from another IT company. Commonly they provided clear and technical descriptions of their requirements so that the need an intense interaction between a provider and a client became decreasing.

5. Implication and Suggestion for Future Research

Our study provides IT providers a comprehension of organizational capabilities role in achieving offshore IT outsourcing success. According to our findings, capabilities of IT provider have influence on the success of outsourcing. The IT provider which has good capabilities in inter-organizational relationship, managing needed resources for IT project, and managing the difference tends to have a high possibility to reach the offshore IT outsourcing success. Therefore, this study suggests the IT provider to develop those capabilities that include client's business domain knowledge, skillful personnel, managing the cultural and temporal difference. When a project is carried out, the IT provider should build good communication and coordination with a client, as well as participate in finding a client's problems.

The study also contributes to the development of internationalization theory particularly on offshore IT outsourcing. Firstly, key capabilities for the success of IT outsourcing are not limited to capabilities in interaction, managing the difference, management, but also capabilities in managing the tangible and intangible resources such as industry mastery and people which have an important role for the success. Secondly, when the client comes from another IT company, capabilities in providing needed resources i.e., industry mastery and skillful personnel have direct impact on the outsourcing success and have no effect on the interaction due to clear and complete requirements of a project.

In this study we examine the relationships between the higher order constructs and outsourcing success that leave unidentified the contribution of first order constructs to the success of outsourcing. The further study can uncover the second order constructs and examine how the first order constructs affect the outsourcing success. We had a few numbers of samples which threatened the precision of the model parameter estimation.
6. Reference


Do the Institutional Factors Affect the Accounting information quality Post IFRS Adoption: Asian Countries Study

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Abstract. This study aims to investigate the effect of institutional factors (i.e., differences in national accounting standards with IFRS, enforcement of accounting and auditing standards, investor protection, and corporate governance) on the accounting information quality. We tested the hypotheses by multiple linear regression analysis, estimated on three measures of accounting information quality (i.e., accruals quality, value relevance, and earnings management). Statistically, the results show that H1 is supported on the dependent variable of earnings management but not for accrual quality and value relevance. H2 is not supported in all measures of accounting information quality (accrual quality, value relevance, and earnings management). The results show that statistically, H3 is supported for the dependent variable accruals quality and earnings management but not significant for the dependent variable value relevance. Finally, the results show that statistically, H4 is supported for the dependent variable of accrual quality but not for the other two dependent variables. The test results H1, H2, H3, and H4, are robust by controlling for country and company level variables (i.e., capital market developments, classification of developed/developing countries, legal system, company size, and sales growth.

Keywords: divergence, enforcement, investor protection, accrual quality, value relevance, earnings management

1 Introduction

Previous research confirms that higher quality financial reporting helps reduce suboptimal capital investment (e.g., [1]; [2]; [3]). Information asymmetry between companies and investors causes capital investment that is not optimal (e.g., [4]; [5]; [6]). Other studies have shown that higher reporting quality reduces adverse selection in securities markets (misalnya, [7]; [8]; [9]). Higher reporting quality also reduces the cost of capital (misalnya, [10], [11]) and improve the efficient information intermediary (misalnya, [9], [12]).

The IASB aims to promote uniformity of high-quality financial reporting worldwide by adopting International Financial Reporting Standards (IFRS). The adoption of IFRS aims to increase the transparency and comparability of financial reporting in order to reduce information asymmetry (e.g., [13]; [14]; [15]; [16]; [17]).

The introduction of IFRS is not without controversy [18], [19] stated that several previous studies showed that the quality of information increased after the adoption of IFRS (e.g., [20]; [13]; [21]; [22]; [23]; [14]; [24]; [25]; [26]). Other studies have shown that after the adoption of IFRS, the quality of information decreases (e.g., [27]; [28]). Meanwhile, several studies have
shown that the quality of information remains the same after adopting IFRS (e.g., [29]; [30]; [31]).

The accounting information quality is not entirely uniform and comparable among IFRS adopting countries. Other forces shape accounting quality, in addition to accounting standards or rules [32], [33] show that country-level regulation influences accounting practices. Several studies suggest the need to investigate the country's institutional factors that interact with the adoption of IFRS and the accounting information quality.

As a form of state institution, law enforcement affects the quality of financial reporting (e.g., [34]; [35]; [36]). Countries with strong law enforcement usually have higher accounting quality than countries with weak law enforcement (e.g., [37]; [11]; [38]). In the absence of strong law enforcement (specifically accounting and auditing enforcement), even high-quality standards will not make a difference to users of financial statements because the regulator will not enforce the standards [39].

Countries that adopted IFRS had varying degrees of divergence (national standard differences compared to IFRS) before adopting IFRS, so the level of variation from IFRS is an important issue to study (e.g., [40]; [41]). [42] examined the difference in the effect of IFRS on earnings management compared to national GAAP on earnings management before IFRS adoption. [42] proved that countries with higher divergence could benefit more from the adoption of IFRS.

The literature proves that the quality of financial reporting is determined by solid investor protection, strong law enforcement, and the common law legal system (e.g., [43]; [44]; [14]; [45]; [39]; [46]; [38]; [47]). The literature related to the adoption of IFRS indicates that high quality accounting standards and law enforcement are needed to reduce earnings management [42]. Corporate governance, both country and company level, will complement each other in countries with strong investor protection and high quality financial reporting [48]. Robust corporate governance mechanisms at the corporate level may be better able to reduce the negative impact of an ineffective legal system that causes weak investors and enforcement of financial reporting [49].

This study aims to investigate the effect of institutional factors (i.e., differences in national accounting standards with IFRS, enforcement of accounting and auditing standards, investor protection, and corporate governance) on the accounting information quality. Specifically, this study examines whether differences in national accounting standards with IFRS, accounting and auditing standards enforcement, investor protection, and corporate governance affect the accounting information quality.

2 Literature Review

**IFRS Adoption and Accounting Standard Divergence**

Those who support IFRS argue that IFRS produces high-quality standards, as evidenced by more timely loss recognition, reduced earnings management, and greater value relevance (e.g., [50]; [13]; [51]; [33]). IFRS encourages comparability and improves the quality of financial reporting, thereby theoretically lowering information risk and cost of equity capital (32). High quality financial reports also encourage cross-border capital flows and improve capital market efficiency (e.g., [52]; [14]).
Those who are opposed to IFRS adoption argue that adopting IFRS poses problems because it will create an operating burden on small companies that do not have significant international operations. Also, it would bear the costs associated with implementing IFRS that outweigh the benefits (33); lead to a loss of quality given GAAP (34); and resulting in improved earnings management due to the flexibility inherent in IFRS-based principles (e.g., [53]; [54]; [55]).

Accounting standard divergence is the degree of difference between local standards that apply in a country compared to applicable international standards (38). [40] and [41] explained that there were variations in national GAAP and IFRS divergences between countries before adopting IFRS.

The timing of IFRS adoption is done differently by many countries, affecting the quality of financial information. For example, as issued by the IASB, IFRS is still not permitted in some countries, such as India and Indonesia (Deloitte 2015). The leaders of the G20 countries encourage the implementation of IFRS as an applicable international standard. Based on the description above, we propose a hypothesis:

H1: The accounting standards divergence affects the accounting information quality.

Accounting standards enforcement

Enforcement is an activity to encourage compliance with laws or regulations. The literature states that enforcement is needed to improve compliance with accounting standards (i.e., IFRS) (e.g., [56]; [57]; [35]; [58]). So far, proxies for "law enforcement" are usually related to the country’s legal system and institutions. For example, the “rule of law” proxy, provided by [46] and [59], was used widely because of its suitability in various countries, but the proxy was unable to capture the enforcement meaning associated with accounting standards and changes in accounting standard enforcement practices around the time of IFRS adoption.

[48] developed a previous study that examined the interaction between law enforcement and the quality of financial reporting after the adoption of IFRS, by focusing on accounting and auditing standards enforcement (e.g., [35]; [36]; [58]). Based on this argument, we propose a hypothesis:

H2: The accounting standards enforcement affects the accounting information quality.

Investor Protection;

The accounting information quality is determined by a country’s overall accounting standards and institutional arrangements and corporate incentives for financial reporting (e.g., [43]; [60]). Country-level investor protection reduces earnings management, thereby improving the accounting information quality (e.g., [38]; [61]; [62]; [63]; [43]; [64]; [11]). Legal protection of investors from managerial takeovers is one of the legal aspects that has received significant attention [65]. Based on these arguments, we propose a hypothesis:

H3. Investor protection affects the accounting information quality.

Corporate Governance

[48] suspect that stated that in countries with strong investor protection and high-quality financial reporting, corporate governance at the corporate and country levels would complement each other. A strong corporate governance mechanism will be able to reduce the negative impact of an ineffective legal system [49]. The impact is different in countries with
weak investor protection and insufficient law enforcement. Research conducted by [19] aims to provide further evidence on the impact of IFRS adoption and corporate governance mechanisms on the accounting information quality, using data from Indonesia. Based on these arguments, we propose a hypothesis:

**H4.** Corporate governance affects the accounting information quality.

### 3. Methodology and Data Analysis

**Sampel dan Data**

The research sample uses Asian countries because of the diversity of institutional characteristics. There are developed countries (e.g., Japan, Singapore, and Hong Kong), developing countries (e.g., India, Philippines, Thailand, Malaysia, and Indonesia), and countries that have the potential to grow very large (e.g., Taiwan and Korea). Asian countries have diversity in terms of IFRS adoption and convergence. Until 2020, some countries prefer to converge instead of fully adopting IFRS (i.e., Japan, Indonesia, and Thailand). Another diversity that Asian countries have is in the level of accounting standard enforcement, investor protection, and corporate governance. The companies selected as samples are non-financial companies with complete data and financial data ending on December 31 from 2008-2020.

**Testing the Hypotheses**

This study tested the hypothesis using multiple linear regression analysis. Hypothesis testing using STATA 14 statistical tools. The model for estimating the hypothesis is as follows:

\[ IQ = \alpha + \beta_1X1Divergence + \beta_2X2Enforcement + \beta_3X3GCI + \beta_4X4Gov + \sum \text{Controls} + \epsilon \quad (1) \]

where:

- IQ: information quality (measured by market-based and accounting-based measures, namely value relevance, accrual quality, and earnings management)
- Divergence: standard accounting divergence—the difference in a country's local standards compared to IFRS as measured by the divergence score by [42]
- Enforcement: accounting standard enforcement—the degree of enforcement of accounting and auditing standards in a country as measured by auditing standards enforcement scores by [36].
- GCI: investor protection—country-level investor protection as measured by the global competitiveness index (GCI) 2019 by the World Economic Forum
- Gov: corporate governance scores developed by the Thomson Reuters database in 2019
- \( \epsilon \): error term

### 4. Research Result and Discussion

Table 1 describes the descriptive statistics. Based on Table 1, accrual quality (AQDD) has a mean value of 39135.9; value relevance (VR) has a mean value of 7.097767; earnings management (DA) has a mean value of .0888184; standard accounting divergence (DIVERGENCE) has a mean value of 6.841587; accounting and auditing standards enforcement (ENFORCEMENT) has a mean value of 9.002803; investor protection score (GCI) has a mean
value of 73.8718; capital market development (MARKET) has a mean value of 3.087018; the country classification (DEVELOP) had a mean value of .5621093; the legal system (LEGAL) has a mean value of .4415295; firm size (LNTA) has a mean value of 11.84111, and sales growth (GROWTH) has a mean value of .5541605.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs.</th>
<th>Mean</th>
<th>Std.Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>AQDD</td>
<td>13,341</td>
<td>39135.9</td>
<td>232506.2</td>
<td>0</td>
<td>1.21e+07</td>
</tr>
<tr>
<td>VR</td>
<td>13,226</td>
<td>7.097767</td>
<td>817.6036</td>
<td>-54.61753</td>
<td>94027.91</td>
</tr>
<tr>
<td>DA</td>
<td>13,636</td>
<td>.0888184</td>
<td>32.74301</td>
<td>-808.1208</td>
<td>3081.387</td>
</tr>
<tr>
<td>DIVERGENCE</td>
<td>13,913</td>
<td>6.841587</td>
<td>2.40789</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>ENFORCEMENT</td>
<td>13,913</td>
<td>9.002803</td>
<td>3.663801</td>
<td>6</td>
<td>22</td>
</tr>
<tr>
<td>GCI</td>
<td>13,919</td>
<td>73.8718</td>
<td>9.224717</td>
<td>9</td>
<td>84.8</td>
</tr>
<tr>
<td>GOV</td>
<td>1,079</td>
<td>46.00719</td>
<td>20.80674</td>
<td>3.416489</td>
<td>98.70056</td>
</tr>
<tr>
<td>MARKET</td>
<td>13,919</td>
<td>3.087018</td>
<td>6.419731</td>
<td>.2868648</td>
<td>20.37729</td>
</tr>
<tr>
<td>DEVELOP</td>
<td>13,919</td>
<td>.5621093</td>
<td>.4961453</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>LEGAL</td>
<td>13,913</td>
<td>.4415295</td>
<td>.4965873</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>LNTA</td>
<td>9,095</td>
<td>11.84111</td>
<td>2.920672</td>
<td>.7518255</td>
<td>84.8</td>
</tr>
<tr>
<td>GROWTH</td>
<td>8,215</td>
<td>.5541605</td>
<td>13.41187</td>
<td>-.3950583</td>
<td>989.8385</td>
</tr>
</tbody>
</table>

(source: data summarized from descriptive statistics)

Table 2 presents the results of hypothesis testing. The dependent variable is accrual quality, value relevance, and earnings management. H1 states that the accounting standards divergence affects the accounting information quality. Statistically, the results of the regression test prove that H1 is supported for the dependent variable of earnings management. On the other hand, the test results show that H1 is not supported for the dependent variables of accrual quality and value relevance.
Table 2. Result of Hypotheses Testing.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Accrual Quality Coef. (sig.)</th>
<th>Value Relevance Coef. (sig.)</th>
<th>Earnings Management Coef. (sig)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIVERGENCE</td>
<td>9492.4038</td>
<td>.00026457</td>
<td>-.03605481**</td>
</tr>
<tr>
<td>ENFORCEMENT</td>
<td>23798.661</td>
<td>-.00861325</td>
<td>.00967109</td>
</tr>
<tr>
<td>GCI</td>
<td>-38222.786**</td>
<td>-.0217271</td>
<td>.07636305***</td>
</tr>
<tr>
<td>GOV</td>
<td>5063.9161***</td>
<td>-.00179512</td>
<td>.00129277</td>
</tr>
<tr>
<td>MARKET</td>
<td>-202661.92</td>
<td>.02928379</td>
<td>-.24650564</td>
</tr>
<tr>
<td>DEVELOP</td>
<td>4601692.4*</td>
<td>-.3849733</td>
<td>4.2796372</td>
</tr>
<tr>
<td>LEGAL</td>
<td>-3839681.6</td>
<td>.61481526</td>
<td>-4.8640196</td>
</tr>
<tr>
<td>LNTA</td>
<td>237083.51***</td>
<td>.01315921</td>
<td>-.0303122</td>
</tr>
<tr>
<td>GROWTH</td>
<td>12022.379</td>
<td>-.00049251</td>
<td>.01129601</td>
</tr>
<tr>
<td>_cons</td>
<td>-1188909.9</td>
<td>1.4746219</td>
<td>-4.8560009***</td>
</tr>
</tbody>
</table>

Significant at * p<0.05; ** p<0.01; *** p<0.001

H2 states that the enforcement of accounting and auditing standards affects the accounting information quality. The results show that statistically, H2 is not supported in all measures of accounting information quality (accrual quality, value relevance, and earnings management). Next, H3 states that country-level investor protection affects the accounting information quality. The results show that statistically, H3 is supported for the dependent variable accruals quality and earnings management but not significant for the dependent variable value relevance. Finally, H4 states that corporate governance affects the accounting information quality. The results show that statistically, H4 is supported for the dependent variable of accrual quality but not significant for the other two dependent variables. The test results H1, H2, H3, and H4, are robust by controlling for country and company level variables (i.e., capital market developments, classification of developed/developing countries, legal system, company size, and sales growth).

5. Implication and Suggestion for Future Research

The H1 test shows that the difference between accounting standards and IFRS affects earnings management. The results prove that the higher the difference in accounting standards, the lower the accounting information quality indicated by the value of discretionary accruals. The result has implications for efforts to reduce the magnitude of the difference between national accounting standards and international accounting standards (IFRS). The H2 test shows that the enforcement of accounting and auditing standards does not significantly increase the accruals quality, value relevance, or reduce earnings management. That is, other institutional factors must complement the accounting standards enforcement to improve the accounting information quality. The H3 test shows that statistically, country-level investor protection significantly affects the accruals quality and earnings management. Country-level investor protection does not significantly affect the value relevance of financial statements. The H4 test shows that statistically, corporate governance significantly affects the accruals quality but does not significantly affect the value relevance of financial statements and earnings management activities.

The test results imply that each institutional factor interacts with the other in improving the accounting information quality (i.e., increasing the accruals quality and value relevance of financial statements and reducing earnings management). Future research needs to explore other
variables that can institutionally improve the accounting information quality. Future research also needs to anticipate statistical analysis techniques that can overcome the threat of omitting variables and biases due to a large amount of missing data.

6. Reference


A Review of Abnormal Accrual at Government: A Bibliometric Study

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Abstract. This research is a bibliometric analysis study of abnormal accruals in government. The purpose of this study is to classify articles related to abnormal accruals in the financial statements of local governments in various countries and to examine the development of research related to abnormal accruals or the management of local government financial statements. There is still no conclusive and limited theory and empirical evidence about abnormal accruals in the public sector as a non-profit organization. The need to apply accrual accounting in government financial statements to create accountable and relevant financial reports is still in doubt because of abnormal accruals or the practice of managing numbers in local government financial statements. The novelty is conducting a bibliometric study to map research developments related to abnormal accruals so that further research is expected to contribute to science and government policy practitioners. The analysis was carried out using a bibliometric study using the Publish or Perish application and Vos Viewer to map 1000 articles from Google Scholar in the last 20 years (2000-2021). There are four research groups related to abnormal accruals in government, and the development of theories and variables studied from the year 2000 to the present. Further research is needed to find the reasons and causes for abnormal accrual and the impact of abnormal accrual on the actual performance of the government organization.

Keywords: abnormal accrual accounting, government, financial statement report, bibliometric study

1. Introduction

Using the accrual accounting system can lead to opportunities to choose policies in the preparation of financial statements that can lead to the management of the numbers presented in financial statements (Pilcher, 2011), referred to as earnings management (if it occurs in a private company). The motivation for managing financial statement figures in the public sector is to meet particular financial objectives set by higher levels of authority [2]–[4]. Abnormal accrual is one form of the government's accrual policy to shift the budget and expenditure to achieve specific government goals in one fiscal year. This method is challenging to detect and use to manipulate accrual accounting policies. [5]. Several abnormal accrual research has been carried out on local governments [1], [2], [4]–[10]. This paper aims to provide a bibliometric analysis of the literature and answer the following questions: 1. To classify articles related to abnormal accruals in local government financial statements in various countries, 2. To examine research developments about abnormal accruals or the management of accounting numbers on local government financial reports.
2. Literature Review

In applying the accrual accounting method, there are two variables in calculating total accruals: Non-Discretionary Accruals (NDA), which is company conditions, and Discretionary Accruals or Abnormal accruals (AA), which is management policies. These two variables will result in the calculation of Total Accruals. NDA is a variable whose changes are related to economic phenomena and can be explained. At the same time, AA is an error term variable or changes that are not associated with economic phenomena but are the result of policies made by management. AA is accruals arising from transactions made or accounting treatment chosen to manage revenue[5]. AA is a government policy to determine the accounting treatment to be selected, or in other words, to manage accounting numbers. AA is considered to have a patterned relationship with other aspects of the organization (local government), such as total accruals, income, receivables, buildings, property, and equipment. AA's goals in the public sector [5] include: 1) reducing surpluses, appropriating unused, or retaining funding for use in subsequent accounting; 2) increase surplus or unused allocation to create a perception of efficient performance; 3) changing spending information to prevent government or media scrutiny and criticism, and 4) provide funds for expenditures that are available for use in other expenditures. Agency theory by[11] explains the occurrence of information asymmetry that can lead to manipulation practices (abnormal accruals) in local government financial statements.

3. Methodology and Data Analysis

This research is qualitative research that uses a bibliometric technique in classifying the development of previous research. There are three steps of bibliometric methods: the first step is to use Publish or Perish (PoP) software to find papers or previous research indexed by google scholar related to abnormal accrual accounting in government. The result is 1000 articles written in the last 20 years. Then the second step uses Vos Viewer software to generate findings related to image diagrams based on reports obtained from PoP. The results of this bibliometric technique are three image maps, namely 1. Network visualization map image, 2. Overlay visualization map image, 3. Density map image visualization.

4. Research Result and Discussion

The following is a network visualization that shows groups or research clusters related to abnormal accruals based on color.
Based on Figure 1, there are 4 clusters based on color (red, green, blue, light green). Following are explanation for cluster groupings:

**Table 1. Research Clusters related to Abnormal Accrual Accounting**

<table>
<thead>
<tr>
<th>CLUSTER</th>
<th>VARIABLE PLAY</th>
<th>SUPPORTING VARIABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(red)</td>
<td>Abnormal</td>
<td>Abnormal cash flow, discretionary, accrual earning management, cash flow, corporate governance, discretionary expenditure, earning management, Indonesia, Korea, manipulation, political connection</td>
</tr>
<tr>
<td>2(green)</td>
<td>Accrual accounting</td>
<td>Accrual accounting, asset, central government, China, discretionary component, local government, investigation, Italy, management, revenue, tax, asset</td>
</tr>
<tr>
<td>3(blue)</td>
<td>Discretionary accruals</td>
<td>Abnormal discretionary, accounting, accrual estimation, accrual management, auditing, auditor, discretionary accrual management, discretionary accrual measure, information, performance, practice, quality, regulation, role</td>
</tr>
</tbody>
</table>
Figure 2 is an Overlay visualization that shows the development of research related to abnormal accruals that have been widely carried out from 2010 to the present. A darker color (dark blue) indicates earlier research, while a lighter color (yellow) indicates a more recent study. Research related to abnormal accruals appeared in 2013-2015, initially associated with corporate governance, discretionary accrual model, local government, accrual estimation, revenue, assets, investigation, management, regulation, payment, central government, Italy, Jones model. Furthermore, research related to abnormal accruals from 2015 has developed and is associated with manipulation, cost, earning quality, discretionary expense, Korea, China, Indonesia, Nigeria, Malaysia, political connection, accrual model, audit, cost.
The density visualization in Figure 3 explains the depth of the discussion. The bright part shows theories that have been used for a longer time or approaches that have been well developed, namely those related to accruals, abnormal accruals, then developed in local government, earning quality, accrual estimation, management, and regulation. Meanwhile, the darker color symbolizes the currently researched theory and has not been widely used or is still being developed, including abnormal or discretionary accruals, manipulation, audits, political connections, discretionary components, accrual quality.

Based on the results of bibliometric studies in the last 20 years, abnormal accrual research on government has developed in many countries and provides empirical evidence of managing accounting numbers in local and central governments. Further research still needs to be set to find out the motivations and causes of this practice and the impact of accrual accounting on the company's actual financial performance. Will applying the accrual basis increase the fairness of the financial statements, or can it even cause deviations (abnormal) gaps that cause information asymmetry, namely not presenting the actual financial statements.

5. Implication and Suggestion for Future Research
Further research needs to be developed and researched qualitatively and quantitatively to establish the theories. The following study can give practitioners such as the government related to better government policies regarding accrual accounting.

References


The Analysis of Indonesia’s Coal Export Value Using the Gravity Model

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Abstract. This study aims to prove whether the variables of Indonesia's GDP, trading partner countries' GDP, distance, inflation, and the real exchange rate in the gravity model proved significant in explaining the value of Indonesia's coal exports in the long and short term. This study used the value of Indonesia’s coal exports as the dependent variable, while the independent variables include Indonesia's GDP, Indonesia's trading partner countries’ GDP, distance, inflation, and real exchange rate. The type of data used in this study is secondary data in the form of time series data, with a time period of 2010 Q4 – 2019 Q4. The analytical method used in this research is the Error Correction Model (ECM). The results of this study indicate that Indonesia's GDP, GDP of Indonesia's trading partner countries, distance, inflation, and the real exchange rate have a significant effect on the value of Indonesian coal exports.

Keywords: Coal exports, GDP, distance, inflation, real exchange rate, Error Correction Model (ECM).

1 Introduction

Export is the activity of shipping goods from the customs area as referred to in the provisions governing customs [1]. Exports can be said to be the locomotive or driving force in economic activity, so that increasing exports is very important for a country, where increasing exports will increase the economic growth.

As the driving force in economic activity in a country[2], based on the Central Statistics Agency’s data, in Indonesia's trade balance, in this case the non-oil and gas sector, the data shows the largest contribution compared to the oil and gas sector. The graph below shows Indonesia's five main export commodities in 2010-2019.
Based on Figure 1 above, there are five leading Indonesian export commodities in the last ten years, and coal has been Indonesia's main export commodity for the last ten years. Then followed by palm oil, iron/steel, clothing, and crumb rubber. Coal is one of the mineral fuel commodities which is traded between countries. Coal is the fastest growing energy source in the world compared to oil, gas, water, nuclear, or other substitute resources. Coal has played a very important role for centuries, not only for generating electricity, but coal is also the main fuel in producing cement, and steel, as well as other industrial activities. Coal is an important source of energy for the world, where 40% of electricity worldwide comes from coal [3]. The following Table 1 presents data on the largest coal producing countries in the world.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>3410,6</td>
<td>3524,1</td>
<td>3683,1</td>
<td>3720,2</td>
<td>47,6</td>
</tr>
<tr>
<td>India</td>
<td>689,8</td>
<td>711,7</td>
<td>765,1</td>
<td>783,7</td>
<td>9,5</td>
</tr>
<tr>
<td>United States</td>
<td>660,8</td>
<td>702,7</td>
<td>685,4</td>
<td>640,4</td>
<td>8,5</td>
</tr>
<tr>
<td>Indonesia</td>
<td>456,2</td>
<td>461,2</td>
<td>548,6</td>
<td>616,2</td>
<td>6,9</td>
</tr>
<tr>
<td>Australia</td>
<td>502,6</td>
<td>484,1</td>
<td>485,5</td>
<td>550,1</td>
<td>6,1</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>78,6</td>
</tr>
<tr>
<td>World</td>
<td>7491,3</td>
<td>7704,4</td>
<td>8012,8</td>
<td>8034,5</td>
<td>100</td>
</tr>
</tbody>
</table>

In this research, distance is one of the important factors in Indonesia's international trade activities, especially in export activities. It implies that when the geographical distance between two trading countries is getting farther, then there will be less trade activities carried out by the two countries.
The gravity model was first introduced by Tinbergen which was formulated based on Isaac Newton's model of gravity. Tinbergen states that the interaction between two objects is proportional to their mass in this case Gross Domestic Product (GDP), and inversely proportional to the distance between the two countries [4]. The results by Mdanat indicates that the Gross Domestic Product (GDP), and dummy trade agreements have a positive and significant effect on international trade, while distance has a negative and significant effect on international trade [6].

With the problems faced by Indonesia, in this case international trade, especially export activities, Indonesia has experienced a trade balance deficit, in the past two years. Or it can say that the value of Indonesia's imports is far greater than the value of exports. Although the condition is not so severe, if the condition continues, then the Indonesia's trade balance will experience a continuous deficit.

In terms of coal exports, the number of demands for coal from Indonesia's main export destination countries is unstable from year to year, and the value fluctuates. So that this condition is felt to be not optimal considering that Indonesia still has a very large opportunity to become a coal exporter in the world. Therefore, this study aims to analyze the value of Indonesia's coal exports with Indonesia's trading partner countries in 2010 Q4-2019 Q4 using the gravity model, as well as examine what factors affect Indonesia's coal exports with these trading partner countries.

2 Literature Review

Indonesia's export activities with Indonesia's trading partner countries are the result of an agreement made by the two countries to meet each other's needs, and benefit from the trade. To strengthen this research, the writer presents the theories used in the research, such as mercantilism theory, absolute advantage theory, comparative advantage theory, and Hecksher-Ohlin theory. From the theory of international trade, such as, the theory of mercantilism explains that in international trade there are needs for government intervention to control economic activity [5]. While the theory of comparative advantage in international trade can occur by specializing products between the two countries, then the Hecksher-Ohlin theory appears to refine the classical theory which states that there is an endowment factor (abundance of labor or abundance of capital) in specialization [5].

International trade occurs in a condition where a country has an excess of production, while there are other countries that have a shortage of production or it can be said that the country cannot meet domestic demand, so this will create trade between the two countries [8]. Therefore, a model was developed that can answer these conditions. The gravity model was first developed by Tinbergen, according to which the relationship between two objects is proportional to their mass (GDP), and inversely proportional to the distance between each country [4]. So in this study, gravity model was used to measure the value of Indonesia's coal exports with trading partner countries.
3 Methodology and Data Analysis

The data that were used in this study are Gross Domestic Product (GDP), distance, inflation, the real exchange rate and the value of Indonesian coal exports, in which the data is secondary and quantitative data. In this study, secondary data is in the form of time series, started from 2010 Q4 - 2019 Q4. Data processing carried out in this study using the E-Views application program, and the analysis used in this study using the Error Correction Model (ECM). Based on the law of gravity, we can use the law of gravity to measure the economic interactions between regions. The following is the equation of the economic interaction [7].

\[ X_{ij} = G \times \frac{y_i y_j}{d_{ij}} \]  

(1)

The above equation explains that, \( X_{ij} \) as an economic interaction between one region and another. While \( G \) is a gravitational constant, \( y_i \) is the Gross Domestic Product of region i, and \( y_j \) is the Gross Domestic Product of region j, and \( d_{ij} \) is the distance between one region (i) and region (j). In this case, to make it easier for this research, the equation will be changed in the form of an econometric model, as follows:

\[ X_{ij} = G + y_i + y_j + D_{ij} \]  

(2)

So in this case the general form of the gravity model in the econometric equation can be formulated as follows:

\[ \log \text{EKS(India)}_{it} = \beta_0 + \beta_1 \log \text{GDP}_it + \beta_2 \log \text{GDP}_jt + \beta_3 \log \text{DIS}_{ijt} + \beta_4 \log \text{INF}_it + \beta_5 \log \text{REER}_jt + \varepsilon_{ijt} \]  

(3)

\[ \log \text{EX(Amerika)}_{it} = \beta_0 + \beta_1 \log \text{GDP}_it + \beta_2 \log \text{GDP}_jt + \beta_3 \log \text{DIS}_{ijt} + \beta_4 \log \text{INF}_it + \beta_5 \log \text{REER}_jt + \varepsilon_{ijt} \]  

(4)

In this case, the EKS symbol describes the value of Indonesia's coal exports to each trading partner country. GDPi explains Indonesia's Gross Domestic Product, GDPj Gross Domestic Product of each trading partner country (India and America), Next DISj, explains the distance between Indonesia and each trading partner country, INFi, explains the inflation rate in Indonesia. Then REERj, explains the real exchange rate of each trading partner country

4 Research Result and Discussion

This study used the cointegration test with the Engle-Granger (EG) cointegration test method. The long-term and short-term equations are the value of Indonesia's coal exports as the dependent variable and Indonesia's GDP, GDP of Indonesia's trading partner countries, distance, inflation, and the real exchange rate as independent variables.
Table 2. Long-Term ECM Regression Estimation Results for India

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-statistic</th>
<th>Prob.</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>F-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-269,115</td>
<td>21,200</td>
<td>-12,693</td>
<td>0,0000</td>
<td>0,953</td>
<td>0,945</td>
<td>127,038</td>
</tr>
<tr>
<td>Log(GDPi)</td>
<td>7,3990</td>
<td>0,5457</td>
<td>13,558</td>
<td>0,0000</td>
<td>0,953</td>
<td>0,945</td>
<td></td>
</tr>
<tr>
<td>Log(GDPj)</td>
<td>-2,1961</td>
<td>0,4123</td>
<td>-5,3262</td>
<td>0,0000</td>
<td>0,953</td>
<td>0,945</td>
<td></td>
</tr>
<tr>
<td>Log(DIS)</td>
<td>12,057</td>
<td>0,9508</td>
<td>12,680</td>
<td>0,0000</td>
<td>0,953</td>
<td>0,945</td>
<td></td>
</tr>
<tr>
<td>Log(INF)</td>
<td>0,8357</td>
<td>0,2692</td>
<td>3,1044</td>
<td>0,0041</td>
<td>0,953</td>
<td>0,945</td>
<td></td>
</tr>
<tr>
<td>Log(REER)</td>
<td>7,3527</td>
<td>0,9781</td>
<td>7,5169</td>
<td>0,0000</td>
<td>0,953</td>
<td>0,945</td>
<td></td>
</tr>
</tbody>
</table>

Based on Table 2 above, it can be seen that the estimation results of the long-term ECM regression showed by the value of t-statistics, in which all variables (GDPi) of Indonesia, (GDPj) of trading partner countries, distance, inflation, and the real exchange rate, are used in this study has a significant effect or in the sense that the probability value is <= 0.05 or with a 95% confidence level.

In addition, the unit root test on ECT shows the ADF t-statistic value which is -3.097 smaller than the critical value or critical value, and the probability value is less than 5%, then the residual or ECT from the estimated regression equation is stationer. This shows that the equations in Table 2 are cointegrated. So it can be concluded that there is a long-term relationship between the independent variables (GDP) of Indonesia, (GDP) of trading partner countries, distance, inflation, and the real exchange rate on the dependent variable of Indonesia's coal export value [10].

Table 3. Short-Term ECM Regression Estimation Results for India

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-statistic</th>
<th>Prob.</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>F-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-245,14</td>
<td>13,224</td>
<td>-18,537</td>
<td>0,0000</td>
<td>0,980</td>
<td>0,975</td>
<td>238,133</td>
</tr>
<tr>
<td>Log(GDPi)</td>
<td>6,7464</td>
<td>0,3823</td>
<td>17,645</td>
<td>0,0000</td>
<td>0,980</td>
<td>0,975</td>
<td></td>
</tr>
<tr>
<td>Log(GDPj)</td>
<td>-1,9033</td>
<td>0,2810</td>
<td>-6,7732</td>
<td>0,0000</td>
<td>0,980</td>
<td>0,975</td>
<td></td>
</tr>
<tr>
<td>Log(DIS)</td>
<td>10,992</td>
<td>0,5896</td>
<td>18,642</td>
<td>0,0000</td>
<td>0,980</td>
<td>0,975</td>
<td></td>
</tr>
<tr>
<td>Log(INF)</td>
<td>0,7047</td>
<td>0,1716</td>
<td>4,1071</td>
<td>0,0003</td>
<td>0,980</td>
<td>0,975</td>
<td></td>
</tr>
<tr>
<td>Log(REER)</td>
<td>6,4011</td>
<td>0,6262</td>
<td>10,221</td>
<td>0,0000</td>
<td>0,980</td>
<td>0,975</td>
<td></td>
</tr>
<tr>
<td>ECT (-1)</td>
<td>0,8575</td>
<td>0,1055</td>
<td>8,1251</td>
<td>0,0000</td>
<td>0,980</td>
<td>0,975</td>
<td></td>
</tr>
</tbody>
</table>

Furthermore, based on Table 3 above, For India, it states that in the short term the ECM regression estimation results state that all variables (GDP) of Indonesia, (GDP) of trading partner countries, distance, inflation, and the real exchange rate, which are used in this study have a significant effect on the export value to Indonesian coal, with a 95% confidence level, in the short term.

Based on Table 4 below, it is stated that the estimation results of the ECM regression can be seen from the t-statistic value, where all Indonesian variables (GDP), distance, inflation, and real
exchange rates, used in this study have a significant effect or in terms of probability values. $\leq 0.05$ or with a 95% confidence level. Meanwhile, the variable (GDP) of trading partner countries has a significant effect or in the sense that the probability value is $\leq 0.010$ or with a 90% confidence level.

Table 3. Long-Term ECM Regression Estimation Results for United States

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-statistik</th>
<th>Prob.</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>F-Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-773.70</td>
<td>163.07</td>
<td>-4.7443</td>
<td>0,0000</td>
<td>0.571</td>
<td>0.502</td>
<td>8.2674</td>
</tr>
<tr>
<td>Log(GDPi)</td>
<td>32.625</td>
<td>10.708</td>
<td>3.0466</td>
<td>0.0047</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log(GDPj)</td>
<td>-24.326</td>
<td>12.717</td>
<td>-1.9128</td>
<td>0.0650 ***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log(DIS)</td>
<td>54.843</td>
<td>14.664</td>
<td>3.7399</td>
<td>0.0007</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log(INF)</td>
<td>-9.939</td>
<td>3.4345</td>
<td>-2.893</td>
<td>0.0069</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log(REER)</td>
<td>33.010</td>
<td>10.7162</td>
<td>3.0803</td>
<td>0.0043</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: *** signifikan 10%

Then, in the unit root test, the ECT shows the ADF t-statistic value which is -3.025 smaller than the critical value and the probability value is less than 5%. Then the residual or ECT from the estimated regression equation is stationer, this is shows that the equations in Table 4 are cointegrated. So it can be concluded that there is a long-term relationship between the independent variables (GDP) of Indonesia, (GDP) of trading partner countries, distance, inflation, and the real exchange rate on the dependent variable of Indonesia's coal export value [11].

Table 5. Short-Term ECM Regression Estimation Results for United States

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-statistik</th>
<th>Prob.</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>F-Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-657.01</td>
<td>127.432</td>
<td>-5.1557</td>
<td>0.0000</td>
<td>0.777</td>
<td>0.731</td>
<td>16.915</td>
</tr>
<tr>
<td>Log(GDPi)</td>
<td>24.384</td>
<td>7.8534</td>
<td>3.1049</td>
<td>0.0042</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log(GDPj)</td>
<td>-15.801</td>
<td>9.3726</td>
<td>-1.6859</td>
<td>0.1025</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log(DIS)</td>
<td>42.757</td>
<td>10.812</td>
<td>3.9543</td>
<td>0.0005</td>
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</tr>
<tr>
<td>Log(INF)</td>
<td>-8.931</td>
<td>2.9519</td>
<td>-3.025</td>
<td>0.0052</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Log(REER)</td>
<td>24.522</td>
<td>7.9373</td>
<td>3.0894</td>
<td>0.0044</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>ECT (-1)</td>
<td>0.7296</td>
<td>0.1343</td>
<td>5.4295</td>
<td>0.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on Table 5 above, it is stated that in the short term the ECM regression estimation results state that the Indonesian variable (GDP), distance, inflation, and the real exchange rate, which are used in this study significantly influence the value of Indonesia's coal exports in the short term [12]. Meanwhile, the variable (GDP) of trading partner countries has no significant effect on the value of Indonesia's coal exports in the short term to the United States.
5 Implication and Suggestion for Future Research

Based on the results of the analysis on the research and discussion that has been described, conclusions can be drawn. That Indonesia's Gross Domestic Product (GDP) has a positive and significant effect on the value of Indonesia's coal exports, this shows that the greater Indonesia's Gross Domestic Product (GDP), the greater the ability of the average population of a country to produce high yields. So that the country's ability to export coal will increase. Similarly, the distance between Indonesia and Indonesia's trading partners has a positive and significant effect on Indonesia's coal exports. This explains that the farther the distance from the trading partner countries, the greater the export of coal will be, this is in order to cover the very large fixed costs of the effect of distance.

Furthermore, the inflation variable has a negative and significant effect on Indonesia's coal exports. This shows that an increase in Indonesia's inflation will lead to a decrease in Indonesia's coal productivity. Thus, from the decline in productivity, it causes a decrease in Indonesia's coal exports. Then the real exchange rate variable has a positive and significant effect on Indonesia's coal exports. This indicates that an increase in the real exchange rate will lead to an increase in Indonesia's coal exports.

References


The Monitoring Role of Majority Ownership on Indonesian Firm Performance in the Context of Covid-19 Pandemic

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Abstract. This research provides empirical evidence about the monitoring role of majority ownership on firm performance. The hypothesis testing is controlled by time period of Covid-19 pandemic. The result shows the majority shareholder positively influence the firm performance which is not limited to any period of time. The empirical result gives an insight about the active monitoring role of majority ownership as continuous implementation of good corporate governance mechanism over a different condition, in both pandemic and non-pandemic situation.

Keywords: Majority ownership, corporate governance, performance, Covid-19 pandemic.

1 Introduction

Ownership structure is the main corporate governance issue. Indonesian listed firms mostly have unique ownership structure in a form of business group owned by majority shareholders. Claessens et.al [1], [2], La Porta et.al [3], Harvey et.al [4] and Patrick [5] has conducted previous researches about this type of ownership structure known as a pyramid ownership. Claessens et.al [1] found expropriation issues on majority ownership structure. Agrawal and Mandelker [6], Demsetz [7] and Shleifer and Vishny [8] provide the empirical evidence of the existence of large shareholders enhances the monitoring of managers. Lapošek et.al [9], Budiyanti et.al [10], Malan et.al [11] and Chen et.al [12] also shows that concentrated ownership affects firm performance. This issue is become important and more interesting to be empirically tested in nowadays context of Covid-19 pandemic. The ultimate power of controlling shareholders is expected to have a positive impact on firm performance in order to keep financial stability during Covid-19 pandemic situation. The objective of this research is to provide empirical evidence about the monitoring role of majority ownership on Indonesian firm performance in the context of Covid-19 pandemic.

The remainder of the article is organized as follows. Section 2 presents the literature review. Section 3 presents the methodology and data analysis. Section 4 presents research results and discussions. Section 5 summarizes the implication and suggestion for future research.
2 Literature Review

The perspective on corporate governance is based on agency theory. Jensen and Meckling [13] explained that agency relationship on a firm exist due to the separation of ownership and control. This separation is causing an agency problem between principal and agents.

Demsetz [7] explained the theory of the firm based on the structure of ownership. Agency problems arise as a consequences of the ownership structure [7]. Shleifer and Vishny [8] explained that agency problem of concentrated ownership relates to the conflict of interest between majority and minority shareholder. This conflict of interest is known as expropriation of majority ownership [1]. Further, this conflict of interest cause agency cost [8]. Therefore, these kind of condition tend to have an impact on the performance of firms.

Demsetz [7] argued that the existence of large shareholders could lead to a better monitoring on agents. Agrawal and Mandelker [6] found an empirical evidence that support to the active monitoring hypothesis proposed by Demsetz [7] and Shleifer and Vishny [8]. This indicates the potential monitoring role of majority ownership over the managers as a governance mechanism.


The extreme changes of economics climate during the Covid-19 pandemic make a need to stabilizing the financial of the firm. The ultimate power of majority ownership could be used to enhance survival life of the firm in the Covid-19 pandemic condition. The larger the size of majority shareholder, the better monitoring role were taken over firm performance. Thus, the hypothesis to be tested is: “Majority ownership have a positive influence on firm performance”.

3 Methodology and Data Analysis

Population and Sample. Population are based on the listing firms in Indonesian Stock Exchange (IDX). Sample determination based on purposive sampling, with the main criterions as follows: Firms published Annual Report year 2020, as an observed Covid-19 pandemic period. For this criterion, only 41 firms has published their 2020 Annual Report at www.idx.co.id until the end of July 2021. It shows that only 6.69% firms made Annual Reporting during Covid-19 pandemic period. Total sample used are 30 firms, since 11 firms was excluded for the existence of Annual Report file error. Time period of analysis is three years, 2020, 2019, and 2018. Total number observation (N) is 90.

Measurement of Variables. Dependent variable in this research is firm performance, which symbolized as Y and measured by earnings per-share. Independent variable in this research is majority shareholder, which symbolized as \( X_1 \) and measured by the percentage of shares that owned by majority shareholders. This research controls the time period of Covid-19 pandemic,
which symbolized as $X_2$ and measured by dummy variables, the value is 1 if the reporting year is 2020 as pandemic periodic time and the value is 0 if the reporting years are 2019 and 2018 as a non-pandemic periodic time.

The Models. The analysis based on two regressions models. Model 1, as a main model, is used to test the influence of majority shareholders on firm performance on the time period of Covid-19 pandemic. For sensitivity analysis, Model 2 is used to investigate the consistence of the result, by excluding the time period of Covid-19 pandemic in regression model.

\[
\text{Model 1: } Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon
\]

\[
\text{Model 2: } Y = \alpha + \beta_1 X_1 + \varepsilon
\]

Where: $Y$ = Performance  
$X_1$ = Majority Ownership  
$X_2$ = Pandemic Period

4 Research Result and Discussion

Descriptive Statistics. The data characteristics shows in Table 1. Minimum earnings per share is found in sample firm coded as ACST in year 2020. ACST as a construction company has the lowest performance during the Covid-19 pandemic in the sample. Maximum earnings per share is found in the sample firm coded as UNTR in year 2019. UNTR’s performance decreased during the Covid-19 pandemic as shown that UNTR has the highest performance amongst the sample in a non-pandemic year. The average performance in the sample is 484.80.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>$Y$</td>
<td>-558</td>
<td>3,033</td>
<td>484.80</td>
<td>697.69</td>
</tr>
<tr>
<td>$X_1$</td>
<td>0.31</td>
<td>0.99</td>
<td>0.63</td>
<td>0.19</td>
</tr>
<tr>
<td>$X_2$</td>
<td>0</td>
<td>1</td>
<td>0.33</td>
<td>0.47</td>
</tr>
</tbody>
</table>

Source: Data proceed, 2021.

The firm with the highest majority ownership is a sample firm coded as MEGA. The majority shareholder is PT. Mega Corpora which own 99.99% of the share. The firm with the lowest majority ownership is a sample firm coded as WOMF. The majority shareholder was T.P. Rachmat Family which own 31.03% of the share. The majority ownership in the sample on average own 63% of the share. $X_2$ as a control variable, has a minimum value zero which means non-pandemic period. The maximum value is one which means Covid-19 pandemic period.

The Result. The testing for the influence of majority shareholders on firm performance on the time period of Covid-19 pandemic is based on Model 1. The results of regressions are shown in
Table 2. Model 1 shows that the value of $\beta_1$ is 0.153 with p-value 0.063. It means that variable $X_1$ have a positive influence on variable $Y$ which is statistically significant at the level of confidence 10%. The value of $\beta_2$ is -294.775 with p-value 0.908. It means that variable $X_2$ have a negative influence on variable $Y$, but it is not statistically significant at the level of confidence 10%.

\[
\text{Model 1: } Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon
\]

<table>
<thead>
<tr>
<th>$\alpha$ (Sig.)</th>
<th>$\beta_1$ (Sig.)</th>
<th>$\beta_2$ (Sig.)</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>F (Sig.)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>4066.854</td>
<td>.153</td>
<td>-294.775</td>
<td>.040</td>
<td>.018</td>
<td>1.802</td>
</tr>
<tr>
<td></td>
<td>(.017)**</td>
<td>(.063)*</td>
<td>(.908)</td>
<td>(.0171)**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* : significant at 10%
** : significant at 5%

Source: Data proceed, 2021.

The testing for sensitivity analysis based on Model 2, which is used to investigate the consistence of the result, by excluding the time period of Covid-19 pandemic in regression model. The sensitivity analysis for this result is shown in Table 3.

Table 3. The Sensitivity Analysis

\[
\text{Model 2: } Y = \alpha + \beta_1 X_1 + \varepsilon
\]

<table>
<thead>
<tr>
<th>$\alpha$ (Sig.)</th>
<th>$\beta_1$ (Sig.)</th>
<th>$\beta_2$ (Sig.)</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>F (Sig.)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 2</td>
<td>3963.831</td>
<td>.154</td>
<td>.040</td>
<td>.029</td>
<td>3.631</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>(.006)**</td>
<td>(.060)*</td>
<td></td>
<td>(.060)*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** : significant at 5%
* : significant at 10%

Source: Data proceed, 2021.

The result from Model 2 shows the value of $\beta_1$ is 0.154 with p-value 0.060. It means that variable $X_1$ have a positive influence on variable $Y$ which is statistically significant at the level of confidence 10%. These result is consistent in both models. The value of $\beta_1$ found positive and statistically significant, both in Model 1 and Model 2.
The overall results provide an empirical evidence that majority ownership have a positive influence on firm performance but pandemic condition have no effect on it. This indicates that the influence of majority ownership exists not only in pandemic period but also in time period before the pandemic. These empirical results show that the monitoring is a continuous governance mechanism over firm performance at any economics condition. This result is consistent with Agrawal and Mandelker [6] which supports the active monitoring hypothesis of large shareholder as in theory of the firm proposed by Demsetz [7]. Thus, the monitoring role of majority shareholders reflected as a positive impact on firm performance over Covid-19 pandemic condition.

5 Implication and Suggestion for Future Research

The results of this research give an insight about the implementation of good corporate governance over a different condition in timeline. The monitoring role of majority ownership have a positive impact on firm performance in the context of Covid-19 pandemic condition. These results have an implication on investment decision making for potential investors to consider the positive influence of majority ownership on firm performance. It also have an implication on developing the governance framework in specific economics condition. Future research could expand the event period of pandemic in order to study the post-pandemic condition in new normal period.

6 Reference


Introducing The Issues of Social Protection During Pandemic Covid-19 to Reduce Stunting in Indonesia

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Abstract The COVID-19 is a short-term international emergency with long-term effects. The potential impact of the COVID-19 pandemic on household welfare in Indonesia can be measured through three channels, namely: the transmission mechanism of health and socio-economic impacts on the population; price pathways that may affect the availability of key commodities, and human resource pathways in the long term. One of the health impacts of transmission to children can be seen by the prevalence of stunting. Stunting is one of the three things that affect the growth of children and more broadly as an indicator of malnutrition problems. A social protection approach for reducing stunting as a result of the pandemic can be carried out by focusing on interventions in the health sector for children under five and pregnant women. Nutritional intervention and complete vaccination are urgently needed in overcoming the long-term impact of family income shock during a pandemic.

Keywords: social protection, covid-19, stunting

1 Introduction

The pandemic of Coronavirus Disease 2019 (COVID-19) has had a significant impact on the health, economy and socio-cultural fields of global society. On March 1, 2020, the World Health Organization (WHO) declared that COVID-19 is a short-term international emergency with long-term effects that are difficult to resolve\cite{1}. The impact of COVID-19 on household welfare can be measured through three channels, namely: the transmission mechanism of health and socio-
economic impacts on the population; price pathways that may affect the availability of key commodities, and human resource pathways in the long term.

The Indonesian government monitors the impact of COVID-19 by making observations, namely: social media platforms, the socioeconomic impact of COVID-19 on households and the impact on business through survey instruments in May, June, August and November in 2020. The survey results emphasize food security, social protection, health, education and digital transactions. Households have a strategy to deal with economic shocks (coping strategy). Community groups who are at high risk of losing their income are called vulnerable groups[2]. This poor vulnerable group is a priority in addition to the main group below the poverty line (poverty line). Therefore, the right policy response will determine the sustainability and success of this group's coping strategy. Social protection is very much needed for people affected by an economic shock such as in the case of the COVID-19 pandemic. Theoretical concepts to the implementation of practice become an urgent need in reducing the number of poor vulnerable groups who are around the poverty line. There are at least three main things that become serious challenges in the implementation of social protection; targeting accuracy, benefit accuracy and disbursement mechanism[3].

Income and consumption of poor and vulnerable families who have family member's children will be reduced due to insufficient savings. The latest research that by United Nations University-World Institute for Development Economics Research (UNU-WIDER) stated that the economic downturn due to the pandemic could increase the world's poverty level to half a billion people or 8 percent of the world's population.16 Bappenas projections suggest that the probability Indonesia's population fell into poverty rose to 55 percent, with about 27 percent of candidates the middle class is expected to experience greater income insecurity worrying.

Indonesia was previously an example of a country with “three burdens of malnutrition”, far before the COVID-19 pandemic. Indonesia has 7 million children who are stunted. This condition makes Indonesia the fifth country in the world with stunting toddlers the most. More than 2 million children are underweight toddlers (underweight proportional to height) and another 2 million children are overweight underweight or obese. Almost half of the total pregnant women are anemic because of the food consumed does not contain enough vitamins and minerals (micronutrients) required. Indonesia faces complex challenges due to these three burdens which likely to worsen due to the COVID-19 pandemic. Children can experience malnutrition due to various causes (direct causes, pre-existing, and tree). The three most common direct causes of malnutrition are: (i) poor breastfeeding practices inadequate and poor diet, plus inappropriate parenting practices optimal; (ii) inadequate nutrition and care for pregnant women and women; and (iii) the high number of infectious diseases mainly due to the environment in which they live unsanitary and inadequate access to poor health services adequate. These factors are compounded by widespread poverty, unemployment, and low levels of education[4].

There are several issues that pose challenges for Indonesia's development, namely the prevalence of stunting in Indonesia is the highest in ASEAN where 1 in 3 children under the age of 5 years is detected as stunting. Based on the 2020 Indonesia SDGs Roadmap, Indonesian children under the age of 5 years experienced stunting with a prevalence of 30.8% in 2018. Children under 5 years of age are considered stunted when their height is more than two standard deviations below the international reference in the median age. Stunting is one of the three things that affect the growth of children and more broadly as an indicator of malnutrition problems. The indicators of chronic nutritional deficiency are neglected children, stunting and underweight[5]. Stunting at the age of
toddlers is associated with lower cognitive, motoric and socio-emotional development. Children who are stunted will not reach their potential growth and will still be stunted in their teens and adults.

Stunting is the result of low quality consumption in the long term that is chronic in nature and is combined with rates of illness, infectious disease and environmental problems. Parents who are more educated are thought to have more protective abilities for their children than caregivers of less educated children. In some countries, maternal literacy of mothers who have formal education and complete primary school is associated with a reduced risk of stunting in children [6]. This study was conducted by taking data from Indonesia and Bangladesh. Stunting reflects a variety of environmental conditions that affect a child's growth including conditions that cause intrauterine growth restriction, household socioeconomic conditions and parental education levels, inadequate maternal and child nutrition and frequent infections.

Analysis of inequality in child malnutrition can illustrate how it relates to household income, urban-rural disparities as well as regional differences. Stunting is a long-term accumulation of malnutrition. If the necessary efforts are not carried out immediately, the long-term impact on the level of nutrition can increase the number of stunting and overweight toddlers body weight and obesity in all age groups. Long-term impact of the COVID-19 crisis include a sharp increase in the prevalence of stunting and an increase in the prevalence of overweight body weight and obesity due to limited physical activity and increased food consumption processed continuously that contain high levels of sugar, salt, and fat.

The prevalence of stunting and malnutrition which is getting worse due to this pandemic has become a challenge for the government. The government's ability will be questioned to overcome the problem of community powerlessness. The government is obliged to carry out its function to ensure the welfare of the community by formulating policies to help the poor and vulnerable groups affected by the pandemic. So an appropriate form of social protection is needed. The social protection program is one of the hopes for accelerating economic recovery in the conditions of the COVID-19 pandemic. Increasing consumption through social assistance is expected to accelerate economic recovery through the demand side.

Indonesia grapples with a triple burden of malnutrition – growing levels of obesity on the one hand, and on the other, chronic and acute malnutrition that affect more than nine million children under the age of five. In 2020, COVID-19 increased food insecurity and aggravated existing vulnerabilities among children – including micronutrient deficiencies, undernutrition and wasting – making it vital that nutrition services continued throughout the pandemic. To address this, UNICEF supported the first national survey on the continuity of essential nutrition services during COVID-19. The survey found that provincial and district health authorities had to shift their nutrition budget and human resources to support the COVID-19 response, and that more than a quarter of primary health centres had only delivered half or less nutrition services during the year. The socio-economic impact of the pandemic is severe and puts past progress at risk. The government has largely been able to mitigate the impact on child poverty through expanded social protection programs, which are expected to continue in 2021. Increased investments in the delivery of health and social services will be needed for the recovery. An opportunity for recovery and growth is Indonesia’s ‘demographic dividend’. Two-thirds of Indonesia’s population are 15–64 years old and this large productive-age population can be a powerful engine for development[7].

2 Literature review
Social protection is defined as a public policy taken in response to the level of vulnerability, risk, and deficiency, which is considered socially unacceptable in a particular government and society[8]. In the 1990s, studies on social protection focused on the scope of food, employment and the elderly. In a subsequent development, since the entry into force of the Millennium Development Goals (MDGs) which ended in 2015, social protection has focused on alleviating extreme poverty[9]. Social protection in the form of cash transfers, both unconditional cash transfers and conditional cash transfers in various developing countries does not show a significant impact on the ability of the poorest groups to improve their lives by shifting to a better class[10]. Social protection has grown rapidly in developing countries in the last 20 years. However, being sustainable does not have an impact on reducing poverty. Some of the reasons include political will, low capacity for implementation, neglect of the poor and social stigma associated with the targeted program.

The main objective of this approach is to assess the poverty impact of a social policy compared to measuring poverty before and after policy interventions. Transfer policy, which is carried out by comparison based on the observed gross income distribution by subtracting the transfers received by households. This is called the computational approach. In practice, measuring aggregate poverty is usually a population-weighted average of individual measures. The most widely used is the headcount index, the proportion of the population below the poverty line. High scales will make people poorer. Social protection refers to policies aimed at preventing and reducing poverty, vulnerability and social exclusion throughout the life cycle. Social protection systems often provide benefits to individuals or households to ensure income security and access to health care.

Measures such as cash benefits, old-age pensions, in-kind transfers and disability benefits play an important role in mitigating the impact of the global financial crisis among the most vulnerable, while serving as macroeconomic stabilizers and enabling people to overcome social exclusion and poverty in both developed and developing countries. Social protection can also stimulate demand and increase consumption, thereby contributing to economic growth. During a recession, social protection spending can help revive the economy and stimulate employment. Social protection instruments are generally classified into three categories: 1) social assistance; 2) social insurance; and 3) labor market programs [11]. The occurrence of a global crisis such as this pandemic has a very heavy impact on life, especially for women and children.

Studies of poverty in children have begun to be carried out in relation to long-term consequences during life, and of course also because it is different from poverty in adults. Various perspectives that continue to develop, state that childhood poverty (childhood poverty) and deprivation are interlinked. Therefore, how many indicators of deprivation experienced by children will determine the depth of deprivation experienced. Many studies on multidimensional deprivation in children have been carried out both between countries and cases in a particular country, however, research conducted specifically in Indonesia has not been widely carried out. The adoption of a multidimensional approach to deprivation requires an understanding of the interactions between the different dimensions[12].

A study on the impact of access to basic infrastructure (water, sanitation and electricity) on the Infant Mortality Rate (IMR) under five Child Mortality Rate (U5MR) and the incidence of stunting. The assumption used by the Fay,Leipziger, Wodon,Yepes (FLWY) model is the assumption about functional forms and the implicit assumption of this model that regressors, including infrastructure, are exogenous. The findings of this model:
1. Better access to infrastructure has a major impact on reducing infant and child mortality rates and reducing the incidence of stunting.

2. There is a complementary relationship between basic infrastructure and health care.

   The FLWY estimation method assumes that the regressors, including the basic infrastructure, are exogenous. Alternative method, to test the same hypothesis with the same data but the assumptions used are weak. What if female schooling is included in the model? The FLWY model follows the formula:

   \[ M_{iq} = \alpha^M + \beta^M S_{iq} + \gamma^M IN_{iq} + \delta^M H_{iq} + \pi^M X_i + \mu^M_{iq} \]

   \[ S_{iq} = \alpha^S + \gamma^S IN_{iq} + \delta^S H_{iq} + \pi^S X_i + \mu^S_{iq} \]

   \[ m_{iq} \] is the child mortality (IMR or U5MR) for quantile q in country i, and is the incidence of stunting. \[ S \] is the Infrastructure Index. \[ H \] is the Health care index and \[ X \] is a vector of country-level control variables (including GDP, urbanization rate and female literacy rate). FLWY tests the relationship between \[ I \] and \[ H \], where the error term \[ d \] where \( k = M, S \) which has three components:

   \[ \mu^k_{iq} = v^k_{iq} + \eta^k_{iq} + \varepsilon^k_{iq} \]

   The data used for the analysis is DHS: Cross-country data of 39 countries with 5 asset quintiles with 195 observations each. To estimate child mortality and stunting, the methods used are: nested random effects estimator. The linear FLWY model finds that urbanization reduces mortality but increases stunting. However, in the log specification, there is no urbanization effect pattern. The problem of endogeneity bias arises from the correlation effect which is not visible at the country level. The estimator allows the country effect to be correlated with the regressor cannot identify the effect of that variable. Therefore, an alternative estimator is needed, namely female schooling. FLWY was unable to find complementary aspects of the impact of basic infrastructure on children's health. Regression with interaction effects between health and infrastructure for U5MR and stunting, does not match with FLWY [13].

3 Methodology and Data Analysis

The data used in the analysis is data obtained from the Central Statistics Agency (BPS) in 2015-2018 for all provinces. The dependent variable in this study is the percentage of children under the age of two years being very short. While the independent variables in this analysis are the percentage of urban districts that have immunized up to 80%, the percentage of years of schooling, and the percentage of the population aged 15 years or older who smoke. The analysis was carried out using a panel data regression model. Panel regression models that are widely known are fixed effects (FE) and random effects (RE). Fixed effects are widely regarded as a more reliable tool for estimating the ceteris paribus effect[14] The basic model in this research is:

   \[ Stunt_{it} = \beta_0 + \beta 1Vac_{it} + \beta 2yschool_{it} + \beta 3smoke_{it} + e_{it} \]
where stunt is the percent of children under two years who are very short, immunity is the percent of districts/cities that complete immunization at least 80% and smoke is the percent of the population aged 15 years or over who smokes. Testing whether to choose the FE or RE model is done with the Hausman test. The large value of the Hausman test statistic results in the rejection of the null hypothesis that individual-specific effects are not correlated with the regressor and the conclusion that FE still exists. It may still be possible to avoid using the FE model. If the regression is correlated with the individual-specific effects caused by omitting the variable, then it is possible to add further regressors, either time-varying or time-invariant (Cameron and Trivedi, 2005).

4 Research Result and discussion

The prevalence of stunting, which is indicated by the percentage of very short toddlers, is still quite high, especially in the Eastern Region of Indonesia. Based on Figure 1, some provinces are detected to have a higher percentage than other provinces in terms of children under two years being very short. For example, the provinces of Aceh, North Sumatra, Jambi and South Sumatra have higher percentages than other provinces on the island of Sumatra. Likewise in several other areas, such as in Java, East Java Province occupies the highest percentage.

Map of Stunting by Province in Indonesia 2018

Fig. 1. Percentage of Indonesian’s Children Under 2 Years Old Experienced Stunting in 2018 by Province

The government has made various efforts in handling stunting. Despite the steady economic growth Indonesia recorded during the pre-COVID-19 period, the country still faces several critical issues in food and nutrition security. Although access to food has increased and malnutrition has continued to decline over the past few years, the nutritional status of Indonesians is still low by international standards. The success of stunting management in Indonesia is carried out by measuring the Stunting Handling Index. Table 1 describes the prevalence of stunting by Province.
### Table 1. Stunting Handling Index by Province in Indonesia 2019

<table>
<thead>
<tr>
<th>Province</th>
<th>Province</th>
<th>2018</th>
<th>2019</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aceh</td>
<td>Nusa Tenggara Barat</td>
<td>58.36</td>
<td>61.95</td>
<td>70.01</td>
<td>72.97</td>
</tr>
<tr>
<td>Sumatera Utara</td>
<td>Nusa Tenggara Timur</td>
<td>55.90</td>
<td>58.56</td>
<td>62.56</td>
<td>64.81</td>
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<td>Sumatera Barat</td>
<td>Kalimantan Barat</td>
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<td>63.97</td>
<td>55.36</td>
<td>56.46</td>
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<td>60.04</td>
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<td>61.03</td>
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<td>66.77</td>
</tr>
<tr>
<td>Sumatera Selatan</td>
<td>Kalimantan Timur</td>
<td>56.96</td>
<td>60.22</td>
<td>62.66</td>
<td>64.94</td>
</tr>
<tr>
<td>Bengkulu</td>
<td>Kalimantan Utara</td>
<td>59.41</td>
<td>60.41</td>
<td>62.63</td>
<td>64.04</td>
</tr>
<tr>
<td>Lampung</td>
<td>Sulawesi Utara</td>
<td>61.03</td>
<td>64.27</td>
<td>63.30</td>
<td>64.78</td>
</tr>
<tr>
<td>Kep. Bangka Belitung</td>
<td>Sulawesi Tengah</td>
<td>61.73</td>
<td>60.68</td>
<td>63.00</td>
<td>63.83</td>
</tr>
<tr>
<td>Kep. Riau</td>
<td>Sulawesi Selatan</td>
<td>64.02</td>
<td>62.76</td>
<td>65.01</td>
<td>66.21</td>
</tr>
<tr>
<td>DKI Jakarta</td>
<td>Sulawesi Tenggara</td>
<td>67.63</td>
<td>70.56</td>
<td>58.50</td>
<td>61.66</td>
</tr>
<tr>
<td>Jawa Barat</td>
<td>Gorontalo</td>
<td>64.65</td>
<td>66.22</td>
<td>64.94</td>
<td>69.48</td>
</tr>
<tr>
<td>Jawa Tengah</td>
<td>Sulawesi Barat</td>
<td>69.38</td>
<td>71.17</td>
<td>64.06</td>
<td>66.03</td>
</tr>
<tr>
<td>Di Yogyakarta</td>
<td>Maluku</td>
<td>78.54</td>
<td>79.94</td>
<td>47.35</td>
<td>50.91</td>
</tr>
<tr>
<td>Jawa Timur</td>
<td>Maluku Utara</td>
<td>68.25</td>
<td>70.69</td>
<td>52.46</td>
<td>53.42</td>
</tr>
<tr>
<td>Banten</td>
<td>Papua Barat</td>
<td>62.13</td>
<td>64.32</td>
<td>52.83</td>
<td>56.45</td>
</tr>
<tr>
<td>Bali</td>
<td>Papua</td>
<td>67.67</td>
<td>69.71</td>
<td>40.01</td>
<td>41.70</td>
</tr>
<tr>
<td>Indonesia</td>
<td></td>
<td>63.92</td>
<td>66.08</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: https://www.bps.go.id/indicator/30/1949/1

Each province has a different character in dealing with stunting cases. The stunting management policy will be closely related to regional development priorities as outlined in the central government's work plan and national development priorities. Nationally, every province has a stunting management index of more than 50 percent except for Papua. The regional aspect in stunting handling and deepening of stunting determinants in each region has not received a large portion. The description of the data is in accordance with the conditions in the field, although the availability of this macro data is not yet fully optimal, especially in updating or updating the database related to stunting. Thus, to utilize specifically at the household and individual levels is still very limited. As a first step to bridge the problem of this limitation, several variables selected in this analysis include the percentage of children under two years of age who are very short as the dependent variable, and the other three independent variables are the percentage of districts/cities that complete immunization at 80 percent, the average length of school which is an indicator of knowledge and smoking habits in response to possible health problems in passive smokers.

Model selection is done by Hausman test where obtained a probability (p-value) is less than 0.05 so that the selected model is fixed effects. Based on these results, all variables have a direction of influence that is in accordance with the theory, but not all of them are significant. This could be
caused by some unobserved variables in the model. In addition, things related to spatial characteristics can not be observed perfectly. The average years of schooling is a variable that can explain well the prevalence of stunting. Therefore. This research can be a potential in making further policies regarding stunting. Based on these findings, the government can consider how to improve the social protection system. The results of the panel regression model testing are as follows in table 2.

<table>
<thead>
<tr>
<th>Table 2. Regression Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
</tr>
<tr>
<td>fixed</td>
</tr>
<tr>
<td>vac</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>smoke</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>yrschool</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>_cons</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>Prob</td>
</tr>
</tbody>
</table>

Standard errors in parentheses

* p < 0.1, ** p < 0.05, *** p < 0.01

Based on the sign in front of the coefficient on the variable, years of schooling shows a positive sign. How can this happen? If we return to the data, there is no separation of years of schooling data based on role categories in the family, for example mother's years of schooling will have a different impact on father's years of schooling. Meanwhile, the other two independent variables, namely the fulfilment of immunization up to 80% and the percentage of people smoking over the age of 15 years showed a direction that was in accordance with the theory although it was not significant. Why does this happen? once again that the issue of data will determine the outcome of the analysis. Thus, the community level data was not accurate enough to explain.

5 Implication and Suggestion on Future Research

This finding indicates a limitation of macro data for analysis of household and individual characteristics. So that a micro data analysis approach is needed for further research. Although theoretically and empirically it can be tested and proven, however, it has not been able to explain the characteristics of households or individuals. Therefore, it is necessary to expand the analysis using micro data such as survey data to be able to capture changes over time with the same household. This will enrich the analysis, especially the characteristics of households whose children are stunted or malnourished.

Analysis of stunting with an assessment of 13 factors that are thought to have a correlation with stunting, namely: complementary feeding, duration of breastfeeding, frequency of feeding, variety
of food, maternal weight, body mass index (BMI), education, age at marriage, vaccinations for children, access to drinking water sources and sanitation facilities, indoor air quality and household wealth. By using the mutually adjusted logistic regression model method for 18,586 children aged 6-23 months, several variables proved to have a strong influence on stunting, namely maternal weight, family wealth, maternal BMI, lack of variety in food, and maternal education. These findings indicate the need for a comprehensive strategy related to the development of socio-economic conditions as well as specific programs for investment in nutrition for children in South Asia[15].

The special issue that emerges from this research is that the education variable is one of the main factors in reducing poverty and stunting prevalence. Years of schooling mothers based on empirical studies are able to reduce stunting cases. Because, with good knowledge, mothers will realize the importance of fulfilling nutrition for their children. In addition, health services, in this case immunization, are important to increase children's immune system, in order to avoid various diseases. Healthy children will grow well and have better intelligence.

The variable that represents the percent of people who smoke, illustrates that smoking activity will affect the increase in stunting cases, although statistically it has not been fully proven. Thus, further studies are needed with a focus on longitudinal data at the individual and household level. Government intervention is urgently needed to deal with stunting. Based on the issues that emerged in this study, a multiple intervention approach should be used in dealing with stunting cases in children. This approach requires great effort, especially to formulate comprehensive policies across sectors, including health, education, and other indicators of household welfare. More concrete social protection efforts are needed in accordance with the diverse socio-cultural conditions of the community. This research has many weaknesses, although it finds important issues related to stunting reduction efforts. At least provide direction on how best to study using macro data that is not strong enough to explain the problem of stunting. Therefore, further studies are needed to obtain empirical or methodological progress that is very useful for formulating policies. What needs to be underlined is that the implementation of SDGs in Indonesia is based on Presidential Regulation No. 59/2017. The roadmap that has been prepared is a blueprint for the implementation of the SDGs. In the document, it is stated that in 2018 30.08% of Indonesian children under the age of 5 were stunted. This figure places Indonesia as a country that has a high prevalence of stunting according to the World Health Organization (WHO) classification, and the highest in Southeast Asia based on the FAO Regional Overview of Food Security and Nutrition in 2018.

A multisection approach is urgently needed to accelerate stunting reduction in Indonesia in delivering integrated nutrition interventions at a critical period of 1000 days from the start of life. These interventions include adequate nutrition for pregnant women and children under 2 years of age, exclusive breastfeeding and complementary feeding, growth monitoring, access to good sanitation and drinking water, early childhood development, and promoting parenting practices. The projection prepared by the Indonesian government is that in 2030 the prevalence of stunting is 22.37% and if followed by an intervention scenario, it is estimated that the prevalence of stunting is 10.0%. This achievement projection is a challenge for the government. Therefore, a comprehensive study is needed through cross-disciplinary studies related to both from the perspective of health, economics and social sciences.
**Acknowledgments**

This paper and the research behind it would not have been possible without the exceptional support of my co-authors. Many thanks to Dean of Faculty of Economics and Business University of Lampung, Dr. Nairobi for his support, and we would like to take this opportunity to thank you for reviewers. Your help enabled us to meet the scheduled time and to maintain the standards of peer-reviewed journals.

**References**


The Effect of Burnout on Employee's Performance: Perceived of Distributive Justice as Moderator

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Universitas Lampung, Indonesia¹

Abstract. The purpose of this study is to empirically examine the effect of burnout on employee performance and the effect of distributitional justice as a moderating variable of the relationship between burnout and performance. This study uses primary data obtained from distributing questionnaires via email to employees in the finance department. The results of this study indicate that there is a negative influence between burnout on employee performance. In addition, this study provides empirical evidence that fair distribution of justice can moderate burnout on performance. The study results provide practical implications that management should pay attention to the fair distribution of incentives as an indicator to improve employee performance.

Keywords: Burnout, Performance, Distributive Justice.

1 Introduction

Performance is one of the important components of a company. Many researchers in management accounting are interested in further research on the determinant factors and consequences of performance [1], [2]. One of the determinants of performance is psychology, both positive and negative emotions. One example of negative emotions, namely burnout, appears when someone feels there is a mismatch between what is obtained and what is expected so that this causes reduced concentration and the emergence of negative behavior that can result in a lack of dedication, commitment, and performance [3], [4]. It is strengthened by empirical evidence that burnout can damage the resources owned, including performance [5], [6]. Based on the antecedent factors of the determinants of burnout, namely the discrepancy between what is obtained and expected, this is very closely related to the theory of motivation, namely the theory of hope. This theory states that when the results obtained by a person are not as expected, it can affect performance. Based on this, the researcher was disturbed to further examine the relationship between the two variables by using the incentive distribution justice variable as a moderator.

The purpose of this study is to provide empirical evidence regarding the effect of distributive justice incentives as a moderator of the relationship between burnout variables and employee performance. This study will use motivation theory and COR theory to answer research questions. The results of the research testing are expected to have a good contribution in terms of theory, namely enriching...
knowledge in the field of management control systems and practical contributions in the form of applying fair distribution of incentives. The research questions are as follows:

1. Does burnout have a negative effect on performance?
2. Can a fair distribution of incentives moderate the relationship between burnout and employee performance?

2 Literature Review

Performance is one of the important components in a company, one form of performance is employee performance. The performance will be said to be good when the performance is in line with organizational goals [1]–[3]. One indicator that affects employee performance is psychological factors, one of which is burnout. Leiter and Maslach first expressed the term burnout in 1988. This theory states that there are excessive negative feelings when dealing with other people. Burnout is a condition of a person who feels bored, tired, and emotionally like a burning building triggered by certain factors, such as the discrepancy between what is received and also what is expected. Based on the Conservative of Resources theory, a person will feel threatened with losing resources when faced with three things: the resource is threatened, for example, losing self-esteem, wasted, and the third is that something sacrificed does not produce anything [5], [7], [8]. Based on this, the proposed hypothesis is as follows:

Ha1: Burnout has a negative effect on employee performance.

Expectancy motivation theory explains that motivation will increase when the results obtained by someone are as expected. It implicitly explains that when someone has expended all the resources they have, but it turns out that the results obtained are not as expected, it can reduce a person's performance. This theory explains that there are external factors that can strengthen and weaken a person's performance. One of the external factors that affect a person's performance is incentives. When the control of results in providing incentives does not pay attention to the employees' resources, it can lead to burnout that affects performance. Previous research stated that fair distribution of justice could affect performance [2], [6], [9], [10]. Based on the theory and the results of prior research, the hypothesis that the researcher proposes is as follows:

Ha2: The relationship between burnout and performance will be weak when distributive justice is fair

3 Research Method

The type of research is a quantitative research type using survey methods. The data used are primary data obtained by distributing questionnaires digitally using email. The subject of this study is the financial department of the companies selected as samples. The population of this study is manufacturing companies located in Lampung, which were then determined using the convenience
method. The reason for using this technique is to make it easier to obtain data considering the pandemic situation so that not all companies are willing to be sampled.

The instrument used in this study is the adoption of researchers from various studies, including the following: burnout researchers adopted the questions developed by Maslach, Jakson, Leitner (1996) using the dimensions of condition and energy. Distribution justice researchers used an instrument developed by Leventhal (1976) and Colquit's (2001) using output and decision dimensions, while employee performance used an instrument designed from Van Scotter and Moowidlo's (1996) using the output and behavioral dimensions. The scale used in the question instrument is a Likert scale of 1 to 5. Hypothesis testing will be carried out using hierarchical regression. The following is the statistical equation in the analysis:

\[ Y = a + 1X_1 + e \]
\[ Y = a + 1X_1 + 2Z_1 + \beta 3X_1Z_1 + e \]

Information:
- \( Y \) = Employee performance
- \( X_1 \) = Burnout
- \( Z_1 \) = Distributive Justice
- \( a \) = Coefficient
- \( \beta \) = Regression coefficient
- \( e \) = Error

4 Research Result and Discussion

This study used a survey method by distributing questionnaires using email. The number of questionnaires was distributed as many as 76 questionnaires but were returned as 61. According to the table that the questionnaires are returned as many as 61 questionnaires, but that can be processed only by 33 questionnaires with details as follows:

<table>
<thead>
<tr>
<th>No</th>
<th>Keterangan</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Returned questionnaire</td>
<td>61</td>
</tr>
<tr>
<td>2.</td>
<td>Answers are incomplete</td>
<td>(10)</td>
</tr>
<tr>
<td>3.</td>
<td>Inconsistent answers</td>
<td>(18)</td>
</tr>
<tr>
<td></td>
<td>Remaining</td>
<td>33</td>
</tr>
</tbody>
</table>

The demographic data of the respondents from this study are as follows:
Table 2. Demographic Data

<table>
<thead>
<tr>
<th>No</th>
<th>KETERANGAN</th>
<th>JUMLAH</th>
<th>PERSENTASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Gender:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Male</td>
<td>20</td>
<td>60,6</td>
</tr>
<tr>
<td></td>
<td>b. Female</td>
<td>13</td>
<td>39,4</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>33</td>
<td>100</td>
</tr>
<tr>
<td>2.</td>
<td>Age:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. 20-30 Years</td>
<td>7</td>
<td>21,2</td>
</tr>
<tr>
<td></td>
<td>b. 31-40 Years</td>
<td>16</td>
<td>48,5</td>
</tr>
<tr>
<td></td>
<td>c. &gt;40 Years</td>
<td>10</td>
<td>30,3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>33</td>
<td>100</td>
</tr>
<tr>
<td>3.</td>
<td>Position:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Level Staff</td>
<td>30</td>
<td>90,9</td>
</tr>
<tr>
<td></td>
<td>b. Level Supervisor</td>
<td>3</td>
<td>9,1</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>33</td>
<td>100</td>
</tr>
<tr>
<td>4.</td>
<td>Work Experience:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. &lt; 2 Years</td>
<td>2</td>
<td>6,1</td>
</tr>
<tr>
<td></td>
<td>b. 2-5 Years</td>
<td>3</td>
<td>9,1</td>
</tr>
<tr>
<td></td>
<td>c. 6-10 Years</td>
<td>10</td>
<td>30,3</td>
</tr>
<tr>
<td></td>
<td>d. &gt;10 Years</td>
<td>18</td>
<td>54,5</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>33</td>
<td>100</td>
</tr>
<tr>
<td>5.</td>
<td>Last Education:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. SLTA / Sederajat</td>
<td>9</td>
<td>27,3</td>
</tr>
<tr>
<td></td>
<td>b. D3</td>
<td>6</td>
<td>18,2</td>
</tr>
<tr>
<td></td>
<td>c. S1</td>
<td>16</td>
<td>48,5</td>
</tr>
<tr>
<td></td>
<td>d. S2</td>
<td>2</td>
<td>6,0</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>33</td>
<td>100</td>
</tr>
</tbody>
</table>

Based on these data, most respondents from the research are male with an educational background dominated by a bachelor's degree. I believe that the respondents can understand the questions in the questionnaire.

Hypothesis Testing Results Hypothesis
Testing was carried out using hierarchical regression analysis; namely, the test was carried out through a simple linear regression test and a moderation test. The following is a table of processing results:

Table 3. Simple Linear Test Result

<table>
<thead>
<tr>
<th>Keterangan</th>
<th>B</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burnout</td>
<td>-0,660</td>
<td>5,183</td>
<td>0,001</td>
</tr>
</tbody>
</table>

Source: processed data, 2021

Based on the statistical test results above, the beta coefficient of the variable is burnout0.659 with a significance value of 0.001, which is below 0.05, so it can conclude that burnout affects employee
performance or, in other words, the first alternative hypothesis is supported. These results are in line with the results of previous studies that burnout can destroy its resources, one of which is performed if it is not processed properly [2], [4], [8], [11] and is also in line with COR theory.

Table 4. F test results with moderation distributive justice

<table>
<thead>
<tr>
<th>Model</th>
<th>F</th>
<th>Signifikansi</th>
<th>Keterangan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regresi</td>
<td>15,205</td>
<td>0,002</td>
<td>sinifikan</td>
</tr>
</tbody>
</table>

Source: data obtained 2021

Based on the F test results in the table that model burnout, distributinal justice affects employee's performance. The interaction between burnout and distributinal justice affects employee performance as moderating variables with a significant level of 0.002 below 0.05.

Table 5. Results of t-test with distributive justice moderation

<table>
<thead>
<tr>
<th>Keterangan</th>
<th>Koef.beta</th>
<th>T hitung</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burnout</td>
<td>-2,673</td>
<td>2,896</td>
<td>0,004</td>
</tr>
<tr>
<td>Keadilan distribusi</td>
<td>1,165</td>
<td>1,831</td>
<td>0,040</td>
</tr>
<tr>
<td>Burnout * Keadilan distribusi</td>
<td>-0,612</td>
<td>2,477</td>
<td>0,017</td>
</tr>
</tbody>
</table>

Source: Data processed 2021

Based on Table 5, distributive justice can moderate the relationship between burnout and distribitual justice, with a significance level of 0.017, which is smaller than 0.05. This result aligns with previous research, which states that fair distribution of justice can improve employee performance and vice versa [2], [6], [12].

5 Implication and Suggestion for Future Research

Burnout is a problem that often occurs in an organization. Saturation and pressure in the work environment will trigger a person to take actions that can destroy the resources they already have, as stated in the conservation of resources theory. The results of this study indicate that burnout can reduce a person's performance. However, this can be reduced when the fair distribution of justice moderates the relationship between the two. The research result implies that management should consider terms of equitable distribution of justice. Fairness can be one of the determining factors in improving employee performance.

Performance has a close relationship with psychology, but this variable only uses distributional justice as a moderator. Therefore, future research should include other psychological variables.
References


An Overview of Good Governance of Local Government During the Covid-19 Pandemic in Indonesia

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Abstract: This study aims to assess the quality of the implementation of good governance in 34 provincial governments in Indonesia before and during the CoViD-19 pandemic using the Principal Component Analysis method to determine the governance index sourced from the KNKG which includes the principles of democracy, the principle of transparency, the principle of accountability, the principle of legal culture, and the principles of fairness and equality. The findings show (1) the average value of the governance index in Indonesia during the covid 19 pandemic was only 58.24 with the predicate "medium" so that the quality of good governance of the provincial government in Indonesia is still not good, especially in the aspects of transparency, accountability and legal culture; (2) Bali Province is the best provincial government in implementing good governance, while North Maluku Province is the province with the worst good governance quality.

Keywords: Good Governance, Principal Component Analysis, CoViD-19 Pandemic

1. Introduction

The presence of the concept of good governance is revolutionary enough to present good governance for developing countries [1]. The presence of this concept has become good news for developing countries which continue to be plagued by economic problems, poverty and hunger triggered by poor government administration, corruption is still high, collusion, nepotism and budget misuse [2].

Governance issues in Indonesia, particularly in the public sector, have received considerable attention since the mid-2000s, when on November 30, 2004 the government formed a National Committee on Governance Policy with the task of expanding the scope of corporate governance in the public sector. This coverage expansion is because the concept of good governance is believed to be able to (1) improve people's welfare, (2) create a healthy business climate, (3) increase competitiveness, and (4) be very effective in avoiding deviations and as an effort to prevent corruption and bribery through efficient and effective state administration [3]. This is supported by [4]–[6] which stated that the application of good governance in government organizations will be able to significantly increase economic growth and welfare both under normal conditions and during times of crisis, global economy. Susanto et al., (2015) stated that the implementation of good governance in government organizations will be able to improve the quality of public services. Shleifer & Vishny (1997) stated that the application of good governance in an organization will be able to overcome agency problems. Dwiyanto (2014) stated that the implementation of good governance will
improve the quality of public services, reduce corrupt practices, and the government will become more concerned with the interests of the people.

The Worldwide Governance Indicators data for 2017 to 2019 places the Indonesian government in a position below Singapore, Brunei Darussalam and Malaysia [10]. This shows that the quality of good governance carried out by the Indonesian government is still not good, and the quality of this good governance will have a negative impact on various sectors, such as the growth and development of corrupt practices [11], [12]; slow economic growth [5]; increasing poverty [6]; slow welfare [4] and declining public trust [13].

In December 2019 the world was shocked by the outbreak of the covid-19 virus originating from Wuhan-China, until 2020 it has infected more than 188 countries. World Health Organization (WHO) declared it a world health emergency [14]. The spread of this virus to Indonesia in March 2020 and until the end of December 2020 had infected 743,198 people [15]. The outbreak of the covid-19 virus has had an impact on various aspects including the global economic downturn [16]; declining quality of education in Ghana [17]; decreasing in transport activity in France [18]; decreasing in physical activity in 187 countries [19]; declining in stock price indexes in China, Europe and America [20]; improving air quality in India [21]; increasing the risk of mental disorders in China [22]. However, the impact of the outbreak of the covid-19 virus on the quality of good governance in Indonesia in particular has not been a concern of researchers. For this reason, this study aims to assess the quality of the implementation of good governance of the provincial government in Indonesia during the covid-19 pandemic. The results of this study are expected to contribute to the development of knowledge, especially about the quality of the implementation of good governance during the covid-19 pandemic and also alternative measurements of good governance. In addition, the results of this study are expected to contribute to improving the quality of local government organizations in Indonesia.

Research on how the quality of the implementation of good governance during the covid-19 pandemic has not yet attracted the attention of researchers in Indonesia, so this research is very interesting to study further. The covid-19 pandemic has forced everyone to keep their distance and work from home by using online services to prevent the spread of the virus in the community. This of course will disrupt the running of government administration, where many public services cannot be served optimally due to the limited technological infrastructure owned by each local government. This condition will result in the disruption of the quality of good governance such as: community participation, transparency, accountability, and equality in public services due to limited community activities and limited technology from each local government to accommodate online services.

The novelty of this research lies in the measurement side, where good governance is measured using a governance index based on the good governance principles of the KNKG which is processed using the Principal Component Analysis method [11], [23]. The use of the Principal Component Analysis method is intended to assess the quality of each principle of good governance considering that the measurement that has been used so far is in the form of a governance index from institutions such as the World Bank through The Worldwide Governance Indicators and The Partnership for Governance Reform, which is already in the form of an index. This research is the development of research by [11] where in this study the measurement of the governance index is based on the principles of good governance from the KNKG (covering: principles of democracy, transparency, accountability, legal culture as well as fairness and equality) which is processed using the Principal Component method. Analysis.

In the research of [11] the measurement of the governance index is based on the principles of accountability, fairness, decentralization, transparency, professionalism and responsiveness
which is processed using the Principal Component Analysis method.

2. Literature Review

This study uses stakeholder theory as the main theory. The theory states that the company is not an entity that only operates for its own sake but must provide benefits to all stakeholders in order to help management increase organizational value creation and minimize losses [24]. The use of stakeholder theory is based on the argument that as an organization, local governments must of course be able to provide benefits to all stakeholders (including local governments and the community). To be able to provide maximum benefits to all stakeholders, government organizations must internally make various improvements in the administration of their government. One of the concepts of governance that is currently considered the best is the concept of good governance.

The KNKG (2008) states that good governance is a guide to running an honest and fair government with the principles of democracy, transparency, accountability, legal culture as well as fairness and equality. Good governance is also good governance to regulate the pattern of relations between government, business and society [25]. The application of good governance in an organization has positive impacts, including: increasing economic growth [4, 5]; improving people's welfare, creating a healthy business climate, increasing competitiveness, minimizing deviations [3], [9]; improve the quality of public services [7], [9]; minimize agency problems [8]. Measurement of good governance generally uses a governance index published by certain institutions such as the World Bank through The Worldwide Governance Indicators and The Partnership for Governance Reform as done by [4] – [7] with a rating scale ranging from 1 = very poor to 10 = very good. In addition, the governance index can be processed using the Principal Component Analysis method [11], [23].

3. Methodology and Data Analysis

The study was conducted on 34 provincial governments in Indonesia during the 2020 period, where 2020 is the year in which the transmission of the covid-19 virus in Indonesia began. Determination of the governance index using the Principal Component Analysis method, where each principle of good governance from the KNKG includes the principle of democracy, the principle of transparency, the principle of accountability, the principle of legal culture and the principle of fairness and equality, the index value is calculated based on existing measurements. After that, they are added up and the average value is calculated. This average value is the governance index value calculated using the Principal Component Analysis method. The criteria used to assess the quality of good governance are guided by The Partnership for Governance Reform (Kemitraan), where the governance index scores 1 – 2.29 (very bad), > 2.29 – 3.57 (poor), > 3.57 – 4.86 (tends to be bad), > 4.86 – 6.14 (moderate), > 6.14 – 7.43 (tends to be good), > 7.43 – 8.71 (good) and > 8.71 – 10 (very good). The assessment of the quality of the implementation of good governance of the provincial government in Indonesia during the covid-19 pandemic was carried out by giving the predicate on the value of the governance index calculated using the Principal Component Analysis method for each local government based on the criteria guidelines from The Partnership for Governance Reform (Kemitraan) above. The data of this research were obtained from BPS-RI and BPK-RI. The measurements for each principle of good governance from the KNKG are as follows: Democracy contains three main elements, namely participation, recognition of differences of opinion, and the realization of the public interest. The principle of democracy must be applied both in the process of selecting and being elected as state administrators and in the process of
state administration. The implementation of democracy in Indonesia is measured using the Indonesian Democracy Index [26], [27].

**Transparency** contains elements of disclosure and the provision of adequate and easily accessible information to stakeholders. Disclosure of Local Government Financial Reports (LKPD) is a measure of transparency as research conducted by [11], [28], [29]. The measurement of disclosure is carried out by comparing the disclosures in the LKPD compared to mandatory disclosures according to the Government Accounting Standard Guidelines [11], [30].

**Accountability** contains elements of clarity of functions within the organization and how to account for them. The level of accountability is measured by the level of follow-up on recommendations from the previous year's examination results plus those that cannot be followed up divided by the total recommendations [11], [31]. The higher the TLRHP level, the higher the local government's willingness to improve the administration of state finances properly so as to create GGG implementation that reflects a government free from corruption.

**Legal culture** contains elements of strict law enforcement indiscriminately and obedience to the law by the community based on awareness. Legal culture must be built so that state institutions and state administrators in carrying out their duties are always based on the belief to adhere to the provisions of the applicable laws and regulations. Legal culture in this study was measured by the level of completion of criminal acts by law enforcement officers [32], [33].

**Fairness and Equality** contain elements of fairness and honesty so that in its implementation, equal treatment of stakeholders can be realized in a responsible manner. Fairness and equality are measured by using an audit opinion, namely if you get a WTP opinion you will get 5 points, a DPP WTP opinion will get 4 points, while a WDP opinion will get 3 points, a TW opinion will get 2 points and a TMP opinion will get 1 point [11], [30].

4. **Research Result and Discussion**
   The number of provincial governments in Indonesia to date is 34 provinces spread across Sumatra with 10 provinces, Java region with 6 provinces, Nusa Tenggara region with 3 provinces, Kalimantan region with 5 provinces, Sulawesi region with 6 provinces, Maluku region with 2 provinces and Papua region with 2 provinces.

   During the covid-19 pandemic, the quality of implementation of good governance in provincial governments in Indonesia based on the Principal Component Analysis method resulted in 1 provincial government with "good" good governance quality and 17 or 50% provincial governments with good governance quality "tends to be good" and 16 or 47% of provincial government with "medium" quality of good governance. The provincial government with "good" quality of good governance is the Bali Provincial Government with an index value of 72.22 which is included in the Nusa Tenggara region, the provincial government with "good" quality of good governance is in the Sumatra region (4 provinces), Java (6 provinces), Nusa Tenggara (1 province), Kalimantan (5 provinces) and Sulawesi (1 province), while provincial governments with "medium" quality of good governance are located in Sumatra (7 provinces), Java (1 province), Nusa Tenggara (2 provinces), Kalimantan (1 province), Sulawesi (6 provinces), Maluku (all provinces) and Papua (all provinces). Bali Province is a provincial government in Indonesia which has the highest governance index value of 72.22 with a "good" predicate, followed by Banten Province and Bengkulu Province, which means that the Bali Provincial Government is the best province in Indonesia compared to other provinces in administering government based on democratic principles, transparency, accountability, legal culture, fairness and equality. Meanwhile, North Maluku Province is the
lowest province for the quality of good governance implementation in Indonesia with a governance index value of 45.18 with the predicate "medium".

Based on the division of regions in Indonesia, the Kalimantan region is an area that on average is superior and has better quality in implementing good governance compared to other regions in Indonesia with an average governance index value of 64.18 with the predicate "tends to be good". While the Maluku region is the region with the lowest average quality of good governance with an average governance index value of 50.64 with the predicate "medium". The low quality of good governance in the Maluku region is due to the fact that the provincial government in the Maluku region is a province that is included in the top 10 provinces with a low level of welfare. The low level of welfare illustrates the low level of education, health level and income per capita of a region which will certainly hinder the implementation of good governance and make the quality of the governance index low, considering that the implementation of quality good governance requires quality human resources and also requires adequate funding large enough.

Nationally, the average value of the governance index in Indonesia during the covid-19 pandemic was only 58.24 with the predicate "medium" and of the five principles of good governance, the principle of fairness and the principle of democracy had the highest scores. This shows that the average quality of good governance of the provincial government in Indonesia is still not good, especially in the aspects of transparency, accountability and legal culture. The findings of this research are in line with the results of research by [34], [35] which stated that the quality of good governance in provincial governments in Indonesia is still not good due to multidimensional crises including moral crises, legal crises, crises of trust, political crises, and specifically for 2020 it may also be added due to the covid 19 pandemic. In full, the results of the governance index and the quality of good governance of the provincial government in Indonesia during the covid-19 pandemic are presented as follows:

<table>
<thead>
<tr>
<th>No</th>
<th>Province</th>
<th>Principles of Good Governance</th>
<th>Index Governance</th>
<th>Predicate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ID</td>
<td>IT</td>
<td>IA</td>
</tr>
<tr>
<td>1</td>
<td>NAD</td>
<td>79.97</td>
<td>47.06</td>
<td>7.41</td>
</tr>
<tr>
<td>2</td>
<td>North Sumatra</td>
<td>64.33</td>
<td>35.29</td>
<td>42.17</td>
</tr>
<tr>
<td>3</td>
<td>West Sumatra</td>
<td>67.06</td>
<td>35.29</td>
<td>53.85</td>
</tr>
<tr>
<td>4</td>
<td>Riau</td>
<td>77.59</td>
<td>35.29</td>
<td>7.53</td>
</tr>
<tr>
<td>5</td>
<td>Riau Islands</td>
<td>79.19</td>
<td>38.24</td>
<td>51.85</td>
</tr>
<tr>
<td>6</td>
<td>Jambi</td>
<td>68.71</td>
<td>35.29</td>
<td>1.96</td>
</tr>
<tr>
<td>7</td>
<td>Bengkulu</td>
<td>70.71</td>
<td>38.24</td>
<td>41.11</td>
</tr>
<tr>
<td>8</td>
<td>South Sumatra</td>
<td>77.14</td>
<td>35.29</td>
<td>1.33</td>
</tr>
<tr>
<td>9</td>
<td>Bangka Belitung</td>
<td>73.43</td>
<td>29.41</td>
<td>0.84</td>
</tr>
<tr>
<td>10</td>
<td>Lampung</td>
<td>68.67</td>
<td>29.41</td>
<td>2.63</td>
</tr>
<tr>
<td></td>
<td><strong>Mean</strong></td>
<td><strong>72.68</strong></td>
<td><strong>35.88</strong></td>
<td><strong>21.07</strong></td>
</tr>
</tbody>
</table>

Based on the division of regions in Indonesia, the Kalimantan region is an area that on average is superior and has better quality in implementing good governance compared to other regions in Indonesia with an average governance index value of 64.18 with the predicate "tends to be good". While the Maluku region is the region with the lowest average quality of good governance with an average governance index value of 50.64 with the predicate "medium". The low quality of good governance in the Maluku region is due to the fact that the provincial government in the Maluku region is a province that is included in the top 10 provinces with a low level of welfare. The low level of welfare illustrates the low level of education, health level and income per capita of a region which will certainly hinder the implementation of good governance and make the quality of the governance index low, considering that the implementation of quality good governance requires quality human resources and also requires adequate funding large enough.
<table>
<thead>
<tr>
<th>Province</th>
<th>ID</th>
<th>IT</th>
<th>LA</th>
<th>IF</th>
<th>Overall Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>DI Yogyakarta</td>
<td>80.82</td>
<td>41.18</td>
<td>8.06</td>
<td>36.93</td>
<td>100</td>
</tr>
<tr>
<td>East Java</td>
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<td>38.24</td>
<td>31.82</td>
<td>58.74</td>
<td>100</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>75.04</td>
<td><strong>37.25</strong></td>
<td><strong>32.34</strong></td>
<td><strong>66.12</strong></td>
<td>100</td>
</tr>
<tr>
<td><strong>NUSA TENGGARA</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bali</td>
<td>82.37</td>
<td>32.35</td>
<td>71.43</td>
<td>74.93</td>
<td>100</td>
</tr>
<tr>
<td>West Nusa Tenggara</td>
<td>73.63</td>
<td>38.24</td>
<td>4.17</td>
<td>59.08</td>
<td>100</td>
</tr>
<tr>
<td>East Nusa Tenggara</td>
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<td>32.35</td>
<td>3.33</td>
<td>70.32</td>
<td>100</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>79.44</td>
<td><strong>34.31</strong></td>
<td><strong>26.31</strong></td>
<td><strong>68.11</strong></td>
<td>100</td>
</tr>
<tr>
<td><strong>KALIMANTAN</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Kalimantan</td>
<td>81.07</td>
<td>35.29</td>
<td>58.06</td>
<td>69.95</td>
<td>100</td>
</tr>
<tr>
<td>West Kalimantan</td>
<td>76.14</td>
<td>44.12</td>
<td>25.00</td>
<td>77.02</td>
<td>100</td>
</tr>
<tr>
<td>Central Kalimantan</td>
<td>71.27</td>
<td>32.35</td>
<td>50.00</td>
<td>72.19</td>
<td>100</td>
</tr>
<tr>
<td>South Kalimantan</td>
<td>79.92</td>
<td>38.24</td>
<td>2.56</td>
<td>75.93</td>
<td>100</td>
</tr>
<tr>
<td>East Kalimantan</td>
<td>73.88</td>
<td>38.24</td>
<td>27.59</td>
<td>75.76</td>
<td>100</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>76.46</td>
<td><strong>37.65</strong></td>
<td><strong>32.64</strong></td>
<td><strong>74.17</strong></td>
<td>100</td>
</tr>
<tr>
<td><strong>SULAWESI</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gorontalo</td>
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<td>41.18</td>
<td>17.07</td>
<td>64.49</td>
<td>100</td>
</tr>
<tr>
<td>North Sulawesi</td>
<td>77.77</td>
<td>44.12</td>
<td>2.17</td>
<td>53.74</td>
<td>100</td>
</tr>
<tr>
<td>West Sulawesi</td>
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<td>38.24</td>
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<td>56.19</td>
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<tr>
<td>Central Sulawesi</td>
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<td>18.92</td>
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</tr>
<tr>
<td>South East Sulawesi</td>
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<td>8.00</td>
<td>69.60</td>
<td>100</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
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<td><strong>39.71</strong></td>
<td><strong>18.56</strong></td>
<td><strong>59.00</strong></td>
<td>100</td>
</tr>
<tr>
<td><strong>MALUKU</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Maluku</td>
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<td>35.29</td>
<td>2.44</td>
<td>56.09</td>
<td>60</td>
</tr>
<tr>
<td>Maluku</td>
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<td>35.29</td>
<td>45.45</td>
<td>24.25</td>
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</tr>
<tr>
<td><strong>Mean</strong></td>
<td>73.81</td>
<td><strong>35.29</strong></td>
<td><strong>23.95</strong></td>
<td><strong>40.17</strong></td>
<td><strong>80</strong></td>
</tr>
<tr>
<td><strong>PAPUA</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>West Papua</td>
<td>58.29</td>
<td>38.24</td>
<td>2.70</td>
<td>27.48</td>
<td>100</td>
</tr>
<tr>
<td>Papua</td>
<td>62.20</td>
<td>32.35</td>
<td>42.50</td>
<td>62.41</td>
<td>100</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>60.25</td>
<td><strong>35.29</strong></td>
<td><strong>22.60</strong></td>
<td><strong>44.95</strong></td>
<td>100</td>
</tr>
<tr>
<td><strong>Overall Mean</strong></td>
<td>73.77</td>
<td><strong>36.85</strong></td>
<td><strong>25.04</strong></td>
<td><strong>62.17</strong></td>
<td><strong>98.82</strong></td>
</tr>
</tbody>
</table>

Source: Processed Data, 2021

Information:

- ID = Index of Democracy
- IT = Index of Transparency
- LA = Index of Accountability
- ILC = Index of Legal Culture
- IF = Index of Fairness

5. Implication and Suggestion for Future Research

Based on the Principal Component Analysis method, there is 1 provincial government with "good" quality of good governance, namely the Province of Bali and 17 or 50% of provincial governments with good governance quality "tends to be good" spread across
Sumatra to Sulawesi and 16 or 47% of provincial governments with the quality of good governance is "medium" which is spread from Sumatra to Papua. During the covid-19 pandemic, Bali Province was the best provincial government in Indonesia in implementing good governance, while North Maluku Province was the worst province for implementing good governance in Indonesia. In addition, the Kalimantan region is an area with higher quality in implementing good governance in Indonesia, while the Maluku region is an area with the lowest quality of good governance. Nationally, the average value of the governance index in Indonesia during the covid-19 pandemic was only 58.24 with the predicate "medium" and of the five principles of good governance, the principle of fairness and the principle of democracy had the highest scores. This shows that the average quality of good governance of the provincial government in Indonesia is still not good, especially in the aspects of transparency, accountability and legal culture. The implication of this finding is that the quality of good governance in Indonesia during the spread of the covid 19 virus is still not good and the use of the Principal Component Analysis method can be used as an alternative measurement of good governance, where so far the measurement of good governance uses an index issued by the Word Bank through The Worldwide Governance Indicators and The Partnership for Governance Reform. In addition, other implications that are expected from this finding are the birth of revisions to laws or government regulations/regional regulations regarding the implementation of good governance in government organizations which include the commitment and synergy of all interested parties including the community to realize the improvement of the quality of the principles of good governance as well as sanctions and rewards. This research was only carried out within the scope of the provincial government and also for a limited period, so it is hoped that further research will use the scope of the district/city government with a longer period to be more complete.

6. References


Creative Industry in the Post-Pandemic Digital Era: Meaningful Incubation, Customer Focus, and High Innovation as Strategies to Compete

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Abstract. In the post-pandemic digital era, competition will be increasingly tight, so the creative economy must have a competitive advantage. The purpose of this study was to determine the effect of the Penta-helix business incubator, market orientation, and entrepreneurial orientation on dynamic capability and competitive advantage, as well as the mediating function of dynamic capability in this relationship. A total of 252 creative economy entrepreneurs in East Java Province, Indonesia, have been selected as respondents through the accidental sampling technique. The data obtained from the distribution of 5-point Likert-scale questionnaires were analyzed using PLS-SEM analysis. The results showed that the incubation business, market orientation, and entrepreneurial orientation have positive and significant impacts on the dynamic capabilities and competitive advantage. It is also proven that the dynamic capability is a strong mediator. Proper business incubation balanced by customer focus and innovation action will increase innovation capabilities that impact competitive advantage.

Keywords: creative economy, incubator, customer focus, innovation, dynamic capability, competitive advantage.

1 Introduction

The creative economy is one of the most influential economic sources in a country. During the Covid-19 pandemic, which caused an economic crisis in almost all corners of the world, this sector could still contribute around Rp. 1,100 trillion to Indonesia's GDP [1]. Previously, this sector had to face technological disruption and innovation challenges due to the microelectronics revolution, where technological developments have pushed boundaries, revolutionized communication, business strategy, and especially the way companies compete [2], which demands quality human resources and able to implement change management [3]. So, it is very urgent to think about how to compete in this new era.

In particular, East Java, one of the provinces in Indonesia, has excellent potential in the creative economy sector with the number of digital start-ups reaching 113 start-ups [4]. However, the performance will not run effectively and move all economic sectors without being followed by forming a healthy and sustainable ecosystem [5]. A sustainable ecosystem means a
connected system that supports the value chain of the creative economy: creation, production, distribution, consumption, and conservation.

It’s a strong relationship between dynamic capability and competitive advantage [6]. A direct and indirect relationship between market orientation and competitive advantage mediated by dynamic capability have previously proven [7]. Entrepreneurial orientation strongly influences innovation capability [8]. Innovation is really important in today's era [9]. The consequences caused by entrepreneurial orientation to dynamic capability is highly proofed [10]. Meanwhile entrepreneurial orientation itself directly has a positive effect on competitive advantage. So, this shows that there is an intervening dynamic capability function [11]. To produce dynamic capabilities, business actors need a kind of business incubation [12].

Meanwhile, the Penta-helix: government, business, academicians, community, and media [13], also act as business incubators needed by creative economy actors. Thus, it is urgent to study the relationship between Penta-helix business incubation, market orientation, entrepreneurial orientation, dynamic capability, and competitive advantage of creative industries in East Java Province, Indonesia, in this digital post-pandemic era. The Penta-helix business incubation and its relationship with other factors is the novelty of this study because such a model has not been revealed in many studies in Indonesia.

2 Literature Review

The concept of creative economy was introduced by John Howkins in which economic growth depends on new ideas which answers an industry-based economy and has shifted from an industrial economy to a creative economy that makes intellectuals the main asset [14]. The number of educated, creative economy entrepreneurs can produce unique and innovative products [15]. Dynamic capability theory explains the company's competitive advantage from the perspective of a vibrant and fast-moving environment [16]. Dynamic capabilities are defined as creating a combination of resources which can provide a competitive advantage for the company [17].

In the development of technology, creating new products is also a must, which is strongly influenced by entrepreneurial orientation [17]. Entrepreneurial orientation has a significant positive correlation with dynamic capability [18]. The impact of entrepreneurial orientation on innovation ability, part of dynamic capability, has proven to be significant [19]. However, there is an empirical gap shows the less strong influence of entrepreneurial orientation on dynamic capability, especially innovation capability [20]. Innovation is considered one of the features of success in economic enterprises [21].

Entrepreneurial Orientation has a positive correlation with competitive advantage [22]. Meanwhile there is a relationship between dynamic capability and competitive advantage [23], where this relationship is significant [24] and dynamic capability is dominated by innovation capability [25]. A significant positive effect on the use of dynamic capabilities to determine a sustainable competitive advantage was proven [26]. There is a significant relationship between market orientation and innovation capability, and an intervening dynamic capability function in the relationship between market orientation and competitive advantage [7]. A kind of business incubation is needed [27] because the company's long-term success does not only depend on its capabilities.

3. Methodology and Data Analysis

This research was conducted on 252 creative economic entrepreneurs in East Java Province, Indonesia, selected through an accidental sampling technique. The collected data through a 5-point Likert scale questionnaire, then analyzed using Partial Least Square (PLS) analysis using
SmartPLS 3.3.3. The exogenous construct of Penta-Helix Business Incubation consists of: business incubation carried out by government, media, community, business, and academicians. The exogenous construct of Market Orientation is measured through: customer focus, inter-functional coordination and integration, information acquisition, shared information and knowledge, and organization learning. The exogenous entrepreneurial orientation construct is measured through: research & developing, high risk high return opportunities, brave actions to achieve goals, first to introduce new products, competitive position, initiating innovative actions, and brave and aggressive postures. The endogenous dynamic capability construct is measured through: innovative capability, integrative capability, sensing capability, and absorptive capability. The competitive advantage construct is measured through 4 indicators, there are: differentiation, value (benefit), price, and innovation.

4. Research Result and Discussion

Research Result
A total of 252 research respondents, namely creative economy entrepreneurs in East Java, Indonesia, have been studied. Around 57% of respondents are male, while about 43% of respondents are female.

Based on Figure 1. Structural Model, it’s known that all manifest constructs reflecting the research variables have a loading factor value > 0.7. It indicates that the research instrument is VALID. It’s known too that the R-Square value in Dynamic Capability is 0.770. About 77% of Dynamic Capability is explained powerfully by Penta-Helix Business Incubation, Market Orientation, and Entrepreneurial Orientation. Meanwhile, the R-square value in the Creative Economy Competitive Advantage is 0.814. The 81.4% Creative Economy Competitive Advantage is explained powerfully by Market Orientation, Entrepreneurial Orientation, and Dynamic Capability. Based on the Original Sample O values in Table 1, as well as in Figure 1. The previous Structural Model, the main structural equations formed are:

Line 1: \( Y1 = 0.287X1 + 0.304X2 + 0.356X3 + e \)
Line 2: \( Y2 = 0.278X2 + 0.261X3 + 0.426Y1 + e \)
which Y1 is Dynamic Capabilities, Y2 is a creative economy competitive advantage, X1 is Penta Helix Business Incubator, X2 is Market Orientation, X3 is Entrepreneurial Orientation, and e is the error term.

Table 1. Path Coefficient and T-Statistics

<table>
<thead>
<tr>
<th>Path Coefficients</th>
<th>Original Sample (O)</th>
<th>T Statistics (O/STDEV)</th>
<th>P Values</th>
<th>Inference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic Capabilities -&gt; Creative Economy Competitive Advantage</td>
<td>0.426</td>
<td>5.251</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>Entrepreneurial Orientation -&gt; Creative Economy Competitive Advantage</td>
<td>0.261</td>
<td>4.815</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>Entrepreneurial Orientation -&gt; Dynamic Capabilities</td>
<td>0.356</td>
<td>5.092</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>Market Orientation -&gt; Creative Economy Competitive Advantage</td>
<td>0.278</td>
<td>4.000</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>Market Orientation -&gt; Dynamic Capabilities</td>
<td>0.304</td>
<td>4.194</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>Penta Helix Business Incubator -&gt; Dynamic Capabilities</td>
<td>0.287</td>
<td>3.740</td>
<td>0.000</td>
<td>Significant</td>
</tr>
</tbody>
</table>

Specific Indirect Effects

<table>
<thead>
<tr>
<th>Path Coefficients</th>
<th>Original Sample (O)</th>
<th>T Statistics (O/STDEV)</th>
<th>P Values</th>
<th>Inference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrepreneurial Orientation -&gt; Dynamic Capabilities Competitive Advantage</td>
<td>0.151</td>
<td>3.698</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>Market Orientation -&gt; Dynamic Capabilities Creative Economy Competitive Advantage</td>
<td>0.130</td>
<td>3.977</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>Penta Helix Business Incubator -&gt; Dynamic Capabilities -&gt; Creative Economy Competitive Advantage</td>
<td>0.122</td>
<td>2.623</td>
<td>0.009</td>
<td>Significant</td>
</tr>
</tbody>
</table>

Based on the structural equation formed in Path 1, it’s known that each of the Penta helix business incubator, market orientation, and entrepreneurial orientation has a positive and significant effect on dynamic capabilities. Meanwhile, based on the structural equations formed in Path 2, it is known that each of market orientation, entrepreneurial orientation, and dynamic capability has a positive and significant effect on creative economy competitive advantage.

Regarding the intervening effect of dynamic capabilities which shown in the Specific Indirect Effects section, it’s known that the indirect impact of market orientation and entrepreneurial orientation on creative economy competitive advantage through dynamic capabilities is significant. Finally, although the direct effect of the Penta helix business incubator on competitive advantage was not tested, the research model showed an indirect effect through dynamic capabilities.

Discussion

The results of this study indicate a significant role for business incubation carried out by Penta-helix [13] for creative economy entrepreneurs. The facilities provided by the incubators will be very beneficial for the creative industry to improve its dynamic capabilities in the face of a rapidly changing and uncertain environment. The most critical capability to be enhanced in the post-covid-19 and the digital era is innovation capability [12]. The creative industry requires
business incubation, which can be an invigorator of innovation capability. Dynamic capability can encourage value creation for an innovative product [28] which will ultimately impact competitive advantage. However, for the long-term success of the creative industry, it does not only depend on its capabilities, but also need incubators to encourage innovation and growth.

The results of this study also show a direct or indirect influence of market orientation and entrepreneurial orientation on competitive advantage through dynamic capabilities as a mediator. The higher the market orientation and entrepreneurial orientation, the higher the dynamic capabilities, and the higher the dynamic capabilities, the stronger the competitive advantage of a creative industry. This finding fully supports the research which revealed the mediation function of dynamic capability in the relationship between market orientation and competitive advantage [7].

The dynamic capability is powerfully explained by market orientation. The same thing is also described that a significant relationship between market orientation and innovation capability [7]. The results of this study are also in line with the research stating that market orientation can encourage the achievement of competitive advantage [20].

The main thing that must be considered by creative economy entrepreneurs in this digital post-pandemic era in market orientation is customer focus. Such free and tight competition requires every business actor to understand and meet consumer needs. The higher entrepreneurial orientation will impact dynamic capability, which will ultimately strengthen competitive advantage [20]. Entrepreneurial orientation has been shown to have a significant positive correlation with dynamic capability [18].

5. Implication and Suggestion for Future Research

The results of this study provide a theory for strategic management by identifying the important role of Penta-helix collaborative incubation, customer-focused market orientation, and innovative action-focused orientation by creative industries that benefit from this type of orientation in enhancing dynamic capabilities to gain competitive advantage in the post-pandemic digital era. The resulting managerial implication is that to compete, every creative industry must improve dynamic capabilities through a strong market orientation and entrepreneurial orientation, as well as participation in business inventories managed by Penta-helix. The main function of the penta-helix business incubation is to guide and foster creative-entrepreneurs so that they can innovate products that are able to compete in the global market. The best creative product innovations today are products based on digital technology.

Further research can develop the research model by analyzing the relationship between business incubation and competitive advantage and researching in more depth what innovations can become the flagship of Indonesia’s creative economy, especially in facing competition in the era of industrial revolution 5.0 later.

Acknowledgments

The research team would like to thank profusely to the Ministry of Research and Technology of the Republic of Indonesia - National Research and Innovation Agency (Kementerian Riset dan Teknologi - Badan Riset dan Inovasi Nasional (Kemenristek – BRIN)) which later merged into Ministry of Education, Culture, Research, and Technology (Kementrian Pendidikan, Kebudayaan, Riset, dan Teknologi (Kemdikbudristek)), which has funded this research through Cooperation among Universities Research (Penelitian Kerjasama antar Perguruan Tinggi (PKPT)) schemes in fiscal year 2021-2022.

6. Reference


G. Giriati, “Business Strategy as a Mediation of Management Capabilities and


Learning Method in Crisis

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Abstract. The purpose of this research is to look at students' perceptions of online application-based learning methods in order to motivate students to study in the Management and Accounting Study Program, Malahayati University. The method used is descriptive quantitative. Obtaining data through social media obtained 69 respondents who had taken an online Introduction to Management course. Data processing is assisted by SmartPLS 3.0 application. With the result that students' perceptions of online lectures have a positive effect. But in its implementation it cannot provide student learning motivation. The limit is only one object and variable studied. This method is very appropriate to be applied, considering the danger of contracting this virus, it is necessary to limit activities outside the home, by applying to study at home, still online.

Keywords: Student Perception, Online Lectures, Learning Motivation

1 Introduction

The world's civilization underwent major changes due to the virus that hit in early 2020 and was declared a global pandemic [1]. This pandemic has an impact on all sectors including education. This makes the government close all educational institutions including universities, thus placing a fairly heavy burden on education providers[2].

There are regulations regarding learning guidelines during the pandemic which are contained in a joint decision of 4 Ministers Number 01/KB/2020 dated June 15, 2020, the 2020/2021 odd semester learning process for universities is held alternately or via online if for one reason or another it is required to be in one rooms such as practicum, it is highly recommended to postpone it until the next semester. These steps are to reduce transmission [3].

Internet-based educational methods can be useful for future users [4] [5] especially online learning methods during the current pandemic. But speaking of effectiveness, the meaning contained in the content of the material is not conveyed properly compared to direct learning. Online learning methods are a medium to reduce the spread of this virus. In addition, this method has 24-hour access for as long as needed. And another function is as the right means to minimize the massive spread of the virus in a crisis [6]. The students and lecturers are always optimistic that this method will be successful [7]. This is illustrated by the positive perception between students and lecturers about teaching and learning [8]. One of the courses that have taken place in the daring process of Malahayati University for the Academic Year 2020/2021 is the Introduction to Management course through media conference (Google Meet and Zoom).

The health crisis that occurred due to Covid-19 made lecturers and students feel worried. In an uncertain daring climate, pros and cons circulate about the effectiveness of online lectures between lecturers and students. This becomes as a continuing review of the motivating factors
for students to learn new virtual platforms for all parties involved. It takes a strong drive to achieve the success of the learning process; that's why, a lot of attention of lecturers and researchers[9]. [10] Experience and affective commitment with online systems have an effect on student motivation. And [11] argue that awarding badges can increase student motivation.

The above phenomenon, the researcher deems it necessary to know how students' views on the online system and student motivation in Pengantar Manajemen lectures at Malahayati University. Given that during this pandemic, all levels of society including students are required to carry out all activities from home so that the transmission of this virus can be minimized. Determining the right learning method and learning motivation is something that is really needed by students, especially in this case. Activities that are usually carried out at regular times make students bored quickly because they are prohibited from doing activities outside the home.

2 Literature Review

Perception

Direct learning methods can hone students' discussion skills. Different perceptions regarding the effectiveness of learning are responded to in various ways. There is an opinion that states that online is useful in accessing lecture material at any time without being hindered by time [5]. This is in line with the findings [12]; [13] who found that online learning offers students convenience in accessing information. And reduce the cost of education because they can learn from home thereby reducing costs or other costs. The next benefit felt by students is learning to manage time and discipline in learning.

Online Lecture

A research [14] found that there are three approaches in online learning, namely, enhanced, blended learning, and online approaches. Blended learning combines hands-on and online learning. The online approach contains training that is carried out online, with unlimited access so as to provide convenience in learning [15]. Student-centered education, where the teacher only acts as a supervisor or assistant as a supervisor. This is the concept of online education [4]. Then online media has online interactive class facilities. And design an information sharing system and can coordinate class activities [16]. Next, the online system must be measurable like direct learning that occurs in the classroom [17]. Learning media carried out online at Malahayati University Bandar Lampung include Google from, Google Meet, Whatsapp, Zoom Meeting, E-mail, Youtube and others platforms.

Learning Motivation

Motivation is the power to maintain an attitude to achieve certain goals [18]. Motivation is a way of controlling students' interest in learning activities [19]. Learning motivation is an internal process that activates, guides, and maintains behavior over time. Individuals are motivated for different reasons, with different intensities. Motivation to learn also depends on the consequences of reinforcement, human needs, the results of dissonance or incompatibility, attributions of success or failure, or expectations of the chances of success. Learning motivation can be increased by emphasizing learning goals and empowering attribution. Learning motivation can increase in students if the lecturer provides rewards that are contingent, specific, and trustworthy [20].
Framework
The framework of research is as follows:

Fig. 2.1 Framework

The explanation of the framework of thought is:
H1: Students' perceptions of online lectures
H2: Online lectures on student learning motivation

Hypothesis Development

The influence of students' perceptions of online lectures
Students' perception of online learning which is a perfect blend of education and the internet so that it can expand the skills of future users[4]. [5] And in this study found that online media is useful during a pandemic. However, this is felt to reduce the effectiveness of direct learning.

Based on this explanation, the first hypothesis that can be made is:
H1: Students' perceptions on online lectures

The effect of online lectures on student learning motivation
As a result of Covid-19 making lecturers and students feel worried, causing an uncertain learning climate, the effectiveness of online lectures raises many questions. One of the factors that influence the success of the learning process is motivation[9]. [10] This study explains that experience and affective commitment significantly affect participants' motivation. And [11] argues that giving badges can increase student motivation.

Based on this explanation, the second hypothesis that can be made is:
H2: Online lectures on student learning motivation

3 Methodology and Data Analysis

Population and Sample
The population is active students of Malahayati University in Odd Semesters for the 2020/2021 Academic Year. According to [21], non-probability sampling is a technique that provides an opportunity for each element to be selected as a sample or not.

The number of samples in this study were 69 respondents. Respondents came from students of the Management and Accounting Study Program, Malahayati University who took the Introduction to Management course in the odd semester of T.A. 2020/2021.

Data analysis used the Partial Least Square (PLS). According to [22] PLS is a covariance-based SEM approach to a variance-based approach. SEM tests causality/theory, while PLS is a predictive model.

4 Research Result and Discussion
From the distribution of the questionnaire, the results of the description of the respondents are as follows: there are 2 categories of age groups in the respondents in this study, namely the age group of 17-19 years and 20-21 years. The distribution of respondents included 48 respondents (70%) aged 17-19 years and 21 respondents (30%) aged 20-21 years. Meanwhile, based on gender, 21 respondents (30%) were male and the remaining 48 respondents (70%) were female. And respondent data is based on the Study Program at Malahayati University,
namely the Management Study Program as many as 36 respondents (52%) and the Accounting Study Program as many as 33 respondents (48%).

Data analysis

Validity test
An indicator is valid if it has a loading factor value > 0.5 and t statistic value > 2.0 against the intended construct, on the other hand if the loading factor value < 0.5 and t statistic < 2.0 then it is removed from the model and run again.

Loading factor
The Loading Factor has t-statistic > 2.0. It means that it has significant validity so that the use of these two variables is stated to be able to measure the variables of online and motivation.

AVE
AVE value:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Average Variance Extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Perception</td>
<td>0.619</td>
</tr>
<tr>
<td>Online Lectures</td>
<td>1.000</td>
</tr>
<tr>
<td>Learning Motivation</td>
<td>0.775</td>
</tr>
</tbody>
</table>

The table 4.1 show that all AVE values in this research variable have shown to be a fit measure, having an AVE value above 0.5, this means that reliable.

Discriminant validity
On the discriminant validity checks by comparing the AVE value with the correlation between the constructs for AVESP>(SP=>OL)=(0.436<0.564), AVEOL>(OL=>LM)=(1.564>0.195) and AVESPLM(SP=>LM)=(1.069>-0.069) so it can be said that the construct has discriminant validity.

Reliability test
The Reliability values generated by the constructs Online Lectures of 1,000 and 1,000, Learning Motivation of 0,905 and 0,932 above 0.7., except for Student Perception variable of 0,691 and 0,829.

Coefficient Determination (R²)
Endogenous contracts were tested to strengthen between exogenous constructs by evaluating R². R² obtained, it can be concluded that the Online Lecture variable can be explained by the Student Perception variable of 0.318 or 31.8%, while as much as 68.2% the rest is a large contribution of influence given by other factors not examined. and the variable of Learning Motivation can be explained by the Online Lecture variable of 0.038 or 3.8%, while the remaining 96.2% is a large contribution of influence given by other factors not examined.

Path Coefficient
The variables that show a significance value are Student Perceptions which have a significance value of 0.564 and Online Lectures which have a significance value of -0.195. So the relationship between constructs is said to be high if the Path Coefficient is greater than 0.100, then it is said to be significant if the Path Coefficient is at the level > 0.050. Because the value of the Student Perception variable is 0.564> 0.100, this variable has a high construct relationship. And Online Lecture -0.195<0.100 then the variable has a low construct relationship. And the value of the Student Perception variable 0.564> 0.050 then the variable is said to be significant. And Online Lecture - 0.195> 0.050 then the variable is said to be significantly weak.
Hypothesis Testing

Hypothesis 1

H_1: Student Perception has a significant effect on Online Lectures

The test results between Student Perceptions of Online Lectures show the Path Coefficient value of 0.564 with a statistical t value of 4.392, it can be said that Student Perception has an effect on Online Lectures because the Path Coefficient 0.564 is above 0.100 and is very significant because the t statistic is 4.392 which is above the value of t table 0.01=(2.38161), so the hypothesis H_1 is accepted.

These results are a positive influence of 31.8% of students' perceptions of Management and Accounting Program towards online lectures.

Hypothesis 2

H_2: Online Lectures have a significant effect on Learning Motivation

The test results between Online Lectures and Learning Motivation show the Path Coefficient value -0.195 with a statistical t value of 1.756, it can be said that Online Lectures have an effect on Learning Motivation because the Path Coefficient -0.195 is below 0.100 and significantly weak because the t statistic is 1.756 below the t value table 0.01 = (2.38161), so the hypothesis H_2 is rejected.

So, there is a negative effect of 3.8% between online lectures on the learning motivation of Management and Accounting Program.

5 Implication and Suggestion for Future Research

This research has limitation, especially on online learning media, only covers zoom meeting and whatsapp group media. WhatsApp group media is the respondent's choice in choosing learning media because for this learning media the cost for network quotas is not too much to be spent by students because almost most communication providers provide free packages in using whatsapp so this is the reason students are interested in using whatsapp groups as learning Media.

As for other media, based on the results of interviews, it is said that the learning media is very costly for the quota in online lecture activities because these media have features only as teleconferencing or direct electronic-based meetings involving two or more participants.

6 Reference


Is Behavioural Intention of Using OVO as Mobile Payment driven by UTAUT 2?

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Abstract. The purpose of the study is to analyze the adoption of mobile payment service of OVO in the City and Regency of Bogor. A quantitative research method was applied under a primary data that is generated from questionnaires. Amounted to 251 respondents as usable questionnaire and further proceed to be analyzed. Using the modified version of acceptance and use of technology model, namely UTAUT 2. The study revealed price value, performance expectancy, and habit have a positive significant effect on behavioral intention using OVO, while effort expectancy, social influence, and hedonic motivation have positive insignificant effect. Facilitating condition has a negative insignificant effect on Behavioral Intention using OVO. There are various valuable insights appear in the study to provide contribution to the government and society in Bogor.

Keywords: UTAUT 2, Mobile payment, OVO, Bogor

1 Introduction

Technology and digital advancements in a short space of time can bring significant changes, especially in the financial sector, creating mobile payment (m-payment) as consumers insist on turning traditional financial transactions into digital. Mobile payment is an alternative payment method [1] that uses mobile media to perform payment transactions [2]. It is estimated that around 1 billion people will use m-payments in 2020 and reach 1.15 billion people in 2021 [3]. The rise in popularity of m-payments is happening not only because of the comfort and convenience [4] from its use but also from a security standpoint because the consumer's mobile phone is a security tool that moves random codes in every transaction [5].

In Indonesia, the number of m-payment users will reach 176.7 million users in 2020 and estimated to reach 202.1 million users in 2021. Although the use of m-payments is quite high in Indonesia, in reality, there are Indonesians who have not experienced the use of m-payment methods in shopping transactions [6]. Several factors why m-payments are not used as a payment method are due to diverse demographics, trust in transactions, difficulty to understand technology, and technology security [7]. Therefore, we need an analytical method to identify and

* Corresponding author
define the determinants of an individual enthusiasm on mobile payment adoption, that may influence an individual to accept and adopt m-payment as an advanced payment technology in Indonesia [8]. Unified Theory of Acceptance and Use of Technology 2 (UTAUT 2) [9] is the extended version of UTAUT [10] with more complex established model and some moderator variables. This study will use the modified version of UTAUT 2 as the method to measure an individual willingness to utilize a particular technology. PT Visionet Internasional (OVO), one of the most popular m-payment among society in Indonesia, has become a daily necessity in carrying out activities. A collaboration between OVO, Grab, and Tokopedia has lead OVO in expanding their business up to ±500,000 offline outlets in 2019 [11]. It proofs a rapid growth of performance and highly demanded among society due to lifestyle change. OVO has been widely adopted among society in Jakarta [12], while the governments of the City and Regency of Bogor are still trying to get their people to adopt m-payments [13]. One of the efforts made by the Ministry of Communication and Information of the Republic of Indonesia at the Bogor City and Regency to catch up with current m-payment technology was by holding an activity called “Grebek Pasar”. This program is to provide facilities to MSMEs to conduct payment receipt transactions using m-payments such as OVO [14].

Therefore, a gap exists between the rapid development of m-payment and the people (users) at Bogor city and regency. The government pays attention and concern to its local citizen to leverage the behavioral intention to use m-payment. However, the local citizens are not familiar with it and still trying to catch up with the current trend of cashless payment. It is necessary to research this area to find out the determinants of people's behavioral intention on a mobile payment utilization. In addition, the study would like to figure out the approach of how the public responds to receive and use advanced technology, especially in terms of mobile payment acceptance. The study results also aim that the Bogor city and regency people may become technology-responsive citizens, not technology-savvy citizens.

2 Literature Review and Hypotheses Development
2.1 Performance Expectancy on Behavioural Intention to Use

Performance Expectancy positively affect the interest in using mobile technology [15],[7], [16]. This positive effect occurs because consumers believe that using mobile technology provides benefits and make them able to complete work more quickly and efficiently so that it positively affects the interest in using mobile technology. As the research has OVO m-payment as the study objective, the hypothesis is therefore drawn as:

H1. PerExp positively affect the BehInt to use OVO.

2.2 Effort Expectancy on Behavioral Intention to Use

Effort Expectancy positively affect on interest in using mobile technology [17],[18], [19]. Consumers believe they can use mobile technology. After all, the use of mobile technology is clear, easy to understand, and easy to use. Previous research also indicated that the ease in using mobile technology felt by consumers would have an impact on the decision of mobile technology acceptance.

H2. EffEx positively affect the BehInt to use OVO.

2.3 Social Influence on Behavioral Intention to Use

Prior studies [16], [15], [18] pin-point their research result of an individual behavioral intention on the mobile technology utilization is defined by the influence obtained by them from their environment. Consumers feel the benefits of using mobile technology, so they invite people around them to use it by telling them the benefits or advantages of the technology by word of mouth. Social Influence proved to which consumers think that the closest people and most important to them must use a certain technology.

H3. SocInf positively affect the BehInt to use OVO.

2.4 Facilitating Condition on Behavioral Intention to Use
Several studies [15], [16], [20] signified an individual behavioural intention to utilize advance technology is measured by a proper facilitating condition felt by the people. Consumers see the existing resources and facilities as very adequate. This may lead the consumers to have control over the use of mobile technology. Through the assistance of certain people in using this technology, it may lead to an increase in the interest of an individual as a user to adopt mobile technology.

**H4.** FaCons positively affect the BehInt to use OVO.

### 2.5 Hedonic Motivations to Behavioral Intention to Use

Prior studies [21]–[23] have also measured that an individual behavioral intention to utilize mobile technology is depend on the hedonic motivation perceive by the people. The positive effect of enjoyment such as pleasure and comfort in the context of consumers has an effective impact on hedonic motivation. It raises interest in using mobile technology.

**H5.** HeMo positively affect the BehInt to use OVO.

### 2.6 Price Value on Behavioral Intention to Use

Various studies [19], [20], [24] have signified that an individual behavioral intention to utilize mobile technology is determined by a price value. The increased benefits and perceived usefulness of using mobile technology are greater than the costs incurred for using the technology. Therefore, consumers have an interest in using mobile technology. Previous research has also indicated that the decision to use mobile technology happened as the benefits received is more than the costs incurred.

**H6.** Priva positively affect the BehInt to use OVO

### 2.7 Habit on Behavioral Intention to Use

Prior studies [7], [20] results shows that an individual behavioral intention to utilize mobile technology is measured by the people habit. Most consumers have used mobile technology for the past six years ago, which has made the use of this technology a habit in the last two years. Therefore, it increases the consumer interest in using mobile technology.

**H7.** Hab positively affect the BehInt to use OVO.

The conceptual framework of research is proposed below, see **Figure 1. Conceptual Framework**.

![Conceptual Framework](image)

**Fig. 1.** Conceptual Framework.

### 3 Methodology and Data Analysis

The research applied the quantitative research method and primary data as a source of the research. The data were collected under the distribution of questionnaires. A sample size shall be
> 30 and < 500 samples [25], or 5-10 times the number of variable indicators [26]. Therefore, 251 samples were produced over 18 days. Samples of the questionnaire results distribution were processed and analyzed with SPSS version 26 to generate data. The questionnaires that were distributed online by google form and used a 5-point Likert scale and a nominal scale to measure the respondents' answers. It was marked with 1 as strongly disagree up to 5 as strongly agree. Before the questionnaire was widely disseminated, the study applied a pilot test by taking the first 30 samples to test the validity and reliability [27]. The respondents should be living in the City and Regency of Bogor and active users of OVO.

4 Research Result and Discussion
4.1 Validity and Reliability test
SPSS analytical tool was used to measure the reliability and validity test of the study. The reliability test was analyzed on the value of Cronbach’s Alpha. It was found that the Cronbach Alpha value of PerExpp, EffEx, SocInf, FaCons, HeMo, PriVa, Hab, and BehInt was greater than the threshold of .7, so all variables can be called reliable and used in the research. The validity test was run and analyzed to compare the r-table and r-count. If r-count > r-table, the indicator in the survey variable can be said to be "valid". After knowing the significance level and the degree of freedom, the value of the r-table in this study is .1239. Thus, it was found that every variable fulfilled the threshold of having the r-count value above the r-table value.

4.2 Classic Assumption Test
Normality test, Heteroscedasticity, and multicollinearity were applied to do the classic assumption test. This study applied Kolmogorov-Smirnov to conduct normality test with the criteria for the asymptotic significance > 0.05. It reveals that the asymptotic significance value in this study of 0.200, which is greater than the criteria, so the regression model in this study was normally distributed. Spearman's Rank Correlation conducted for heteroscedasticity and the significance value should be > 0.05 to be classified as homoscedastic (no heteroscedasticity issue). All significance values of variables used proved greater than 0.05. It can be concluded that PerExpp, EffEx, SocInf, FaCons, HeMo, PriVa, Hab, and BehInt were homoscedastic. Tolerance and VIF value were used to conduct multicollinearity test. The independent variables can be said to have no multicollinearity if the tolerance value is bigger than .10 and the VIF value is less than 10. Based on the tolerance and VIF results, it reveals that there were no correlation among independent variables.

4.3 Multiple Linear Regression
The T-table used in the study is equal to 1.969. Table IV revealed that the t-count for the PerExpp, PriVa, and Hab showing the values of t-count > t-table. Three variables significantly affect the dependent variable. In addition, EffEx, SocInf, FaCons, and HeMo indicated an insignificant value. It occurs because of the value of the t-count < t-table.

The P-value of PerExpp, PriVa, and Hab significance values are less than 0.05. Therefore, the three respective variables mentioned above affect the dependent variable and thus support the hypotheses. Meanwhile, EffEx, SocInf, FaCons, and HeMo, did not affect the dependent variable because the significance value was greater than the threshold and thus hypotheses were not supported.

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Coef</th>
<th>T-Stat</th>
<th>P-Values</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>PerExpp → BeHint</td>
<td>0.136</td>
<td>2.627</td>
<td>0.009</td>
<td>Supported</td>
</tr>
<tr>
<td>EffEx → BeHint</td>
<td>0.010</td>
<td>0.196</td>
<td>0.845</td>
<td>Not Supported</td>
</tr>
<tr>
<td>SocInf → BeHint</td>
<td>0.025</td>
<td>0.520</td>
<td>0.604</td>
<td>Not Supported</td>
</tr>
<tr>
<td>FaCons → BeHint</td>
<td>-0.036</td>
<td>-0.683</td>
<td>0.495</td>
<td>Not Supported</td>
</tr>
</tbody>
</table>
R-Square analysis was applied to measure the effect given by the exogenous variables to the endogenous variable. It has functions to determine the extent of the proposed endogenous variable are determined by the exogenous variables. Thus, the study revealed that 75.1% of the endogenous (dependent) variable was measured by the exogenous (independent) variables. In addition, the remaining 24.9% was measured from the excluded variables in this study.

5 Implication and Suggestion for Future Research
The study showed that having transaction speed and increasing productivity can affect the behavioral intention to use OVO at Bogor City and Regency. It also indicates that low administrative costs, transparency of activities, and positive promotions can affect the people's behavioral intention to use OVO at Bogor City and Regency. OVO has become a habit, need, necessity, and a part of life as a means of payment that can affect the interest in using OVO. On the other hand, the ease of learning to use and use OVO was not able to affect the behavioral intention to use OVO at Bogor City and Regency. The consumers were aware of technological developments so that using m-payment technology has become a familiar thing. However, the rejected hypotheses were in line with prior research showing that Effort Expectancy positively but insignificant effect to behavioral intention to use OVO as m-payment [7], [15], [16], [28].

Advice and support from family, friends, and the surrounding environment has a less strong impact on the customers’ willingness to the mobile payment technology acceptance. It happens as a result of the people at Bogor City and Regency used to update the technological developments. The people were up to date with technology trend in their surroundings. Therefore it support prior research that social influence positively but insignificant effect on the behavioral intention to use OVO [17], [19], [28].

Facilitating conditions such as smartphones and the internet are easy to find at the current time. The resources and knowledge of the people are quite good about m-payment technology. However, it seems that the absence of technology or people assistance relate to difficulties faced during the use of OVO brought an impact to the consumer interest in using new technology. Hence, prior research were supported, facilitating condition has a negative insignificant [7]. OVO m-payment can speed up the time in payment transactions, but it is not comparable to the joy and comfort of consumers in shopping. We agreed the prior research that hedonic motivation positively affect but insignificant towards behavioral intention to use OVO as m-payment [7], [20].

The research limitations may be drawn into 3 ideas: (a) the research was only conducted on OVO users; (b) The research objective were the people reside at Bogor City and Regency, therefore the study does not reflect the perception of OVO users as a whole; (c) The study used seven independent variables to describe the behavioral intention to use OVO, while some other various factors or variables can describe the behavioral intention to use m-payment technology.

The future research is suggested to take larger samples so that it can reflect the perceptions of OVO users to produce factual and accurate research results. It is also possible to employ other independent variables such as trust and perceived regulatory support to describe the behavioral intention to use OVO m-payment. Last, but not least, further research is expected to research other m-payments such as Dana, T-cash, Go-pay, ShopeePay, and many others.

It is expected that the study may contribute and assist in both theoretical and practical to the local government at Bogor City and Regency. The study concern that it may provide contribution to the educational field for students and researchers. Lastly, the study may bring new insight to
the business’ activity such as E-Commerce, social media marketing, and financial technology companies. It is also important that updated financial literacy is necessary to boost the financial admittance, which can be reflected in m-payment usage.

Acknowledgments. We are thankful to anonymous reviewers for their insightful suggestions to improve this manuscript and to Bina Nusantara University for their financial support.

6 Reference


Improving Technological Features to Increase Continuance Intention on Sakuku Application

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Abstract. The increasing number of smartphone users as well as innovations in the financial industry that continue to come, make e-wallets one of the main payment options for people in Indonesia. However, this trend is opposite to that experienced by one of the e-wallets in Indonesia, namely Sakuku, which has continued to decline. This study is aims to determine the effects of performance expectancy, social influence, hedonic motivation, price saving orientation, habit, trust, and perceived risk on continuance intention of using the Sakuku application based on the UTAUT2 theory. This research used the quantitative approach, survey method and having 144 sampling respondents. The data collected was then processed and analyzed using multiple linear regression. The results of this study are that social influence, price saving orientation, habits, and trust are proven to have a positive and significant effect on continuance intention. Meanwhile, performance expectancy, hedonic motivation, and perceived risk were not proven to have a significant effect on continuance intention.

Keywords: Continuance Intention, Consumer Behavior, UTAUT2, Sakuku, Fintech, E-wallet

1 Introduction

Smartphone technology continues to develop as well as the number of users, it is estimated that by 2025 smartphone users in Indonesia will reach 256.11 million people [1]. Data from Datareportal showed that Indonesian people most often use smartphones to carry out financial activities such as sending money to friends or family [2]. Along with the times, financial services on smartphones are not only provided by banks, but also by new players in the growing financial services sector known as fintech (Financial Technology). In Indonesia, fintech is divided into 4 types, which are Peer-to-Peer (P2P) Lending, Payment, Financial Planner, and Market Aggregator [3]. Payment is a type of fintech that controls the largest market in Indonesia, which is 39% and one of the products of this fintech is an e-wallet [4]. According to a survey conducted by Licorice e-wallet is the second most preferred payment option for Indonesians besides cash [5].

A survey conducted by App Annie and Iprice stated that the Gojek e-wallet was the e-wallet that had the most monthly active users from 2017 to 2020. This is inversely proportional to what was experienced by Sakuku e-wallet, where Sakuku e-wallet was constantly experiencing decrease in monthly active users [6]. The decrease in users experienced by Sakuku occurred due to several problems found in the field, such as application security problems, ease of accessing the application, and promotions carried out by Sakuku, which were considered insufficient by users. These problems are collected from various sources such as Sakuku application review column, online media, as well as interviews with Sakuku application developers. Apart from functional factors, the factor that most motivates the use of digital
wallets is the emotional factor, namely the pleasant feeling and experience of using a digital wallet [7].

The increasing use of smartphones has made the opportunity for the e-wallet industry in Indonesia to continue to grow. Currently, there are many e-wallet service providers in Indonesia who are competing to become the most popular e-wallet application by the public. This has made competition in the Indonesian e-wallet industry tighter, so that every e-wallet is required to be able to continue to provide the services desired by its users. In order for Sakuku to survive in the e-wallet industry in Indonesia, Sakuku needs to know what factors can influence and encourage users to continue using their e-wallet application. Therefore the purpose of this study is to find out the effect of performance expectancy, social influence, hedonic motivation, price saving orientation, habit, trust, and perceived risk to continuance intention of using Sakuku application.

2 Literature Review

Consumer behavior can be defined as all activities related to the purchase, use and disposal of goods and services, including emotional and psychological behavior when participating in these activities [8]. Unified Theory of Acceptance and Use of Technology (UTAUT) is defined as a theory used to examine technology acceptance, because this theory can study the factors that influence information technology (IT), while at the same time considering social factors [9]. UTAUT is a model proposed from the research results of Venkatesh et al., (2003) who conducted a study on previous models of technology acceptance [10,11]. There are 4 main factors that build the UTAUT model, namely performance expectancy, effort expectancy, social influence, and facilitating conditions which then affect behavioral intention to use a technology.

Performance expectancy can be interpreted as the extent to which a person believes that using the system can help him get benefits when doing a job [10]. H1 : Performance expectancy has a positive and significant effect on continuance intention. Social influence can be defined as the degree to which members of a social network, such as family and friends, influence each other in the use of a technology [12]. H2 : Social influence has a positive and significant effect on continuance intention. Hedonic motivation can be defined as pleasure and joy in using technology, and the role of this pleasure in determining the acceptance and use of technology has been shown to be important [13]. H3 : Hedonic motivation has a positive and significant effect on continuance intention.

Price saving orientation can be defined as an advantage (for example, a price discount) in using an application [12]. H4 : Price saving orientation has a positive and significant effect on continuance intention. Habit can be defined as the extent to which people tend to use certain technologies for learning [14]. Habit can also be interpreted as a construct of behavior or perception that reflects the results of previous experiences [13]. H5 : Habit has a positive and significant effect on continuance intention. Trust can be defined as the degree to which a user can rely on the integrity of an application in providing its services [12]. H6 : Trust has a positive and significant effect on continuance intention. Perceived risk can be defined as the user's perception of uncertainty and the bad consequences of carrying out a certain activity [15]. H7 : Perceived risk has a negative and significant effect on continuance intention.

2.1 Research Model

This study adopts and modifies the model from the results of research previously conducted by Indrawati and Putri [12]. The reason the researcher adopted this model is because there are several phenomena related to the variables in the research result model. Where then the
researcher added the perceived risk variable to the model because it was thought to have an effect on the continuance intention of using the Sakuku e-wallet. The researcher also did not use the moderator variable, this is cool according to Taufik Hidayat et al. [16], the moderator variable is considered to reduce the value obtained. In addition, because the target respondents have an age range that is not too far away, the moderator variables such as age, gender and experience are considered to be less influential. The research model can be seen in figure 1.

Fig 1. Research Model (Modified from Indrawati and Putri [12])

3 Methodology and Data Analysis

This study uses quantitative methods to analyze the hypotheses that have been made. For the research object chosen is consumer behavior in the use of Sakuku e-wallet in Indonesia. the target population is e-wallet application users throughout Indonesia. While the sample in this study were users of the Sakuku e-wallet application. The target respondents in this study are the millennial generation and the Z generation who use the Sakuku application. The technique used in sampling is non-probability sampling with judgment sampling approach, where this technique selects samples based on certain criteria that have been determined by the researcher. The selected sample has the criteria that have used the Sakuku e-wallet and used the Sakuku e-wallet for more than 1 month. The number of samples used in this research is at least 140 respondents. This amount is obtained based on a book written by Hair et al. [17] which states that the minimum number of samples is 100 and at least 5 times the number of indicators / questions. Researchers will distribute research questionnaires through social media such as Instagram, Line, WhatsApp, and Facebook. This research uses a likert scale which consists of 5 measurement items to measure the answers of the respondents. Measurements on this scale are in the form of numbers, where strongly disagree is indicated by number 1, disagree is indicated by number 2, neutral is indicated by number 3, agrees is indicated by number 4, and strongly agrees is indicated by number 5. Data processing in this study was assisted by tools SPSS 20.0.

4 Research Result and Discussion

4.1 Validity and Reliability Test

There were 207 questionnaires which were then filled in by the respondents. But there were only 144 respondents who passed the screening question that was made, namely respondents who had used Sakuku and had used my pocket for more than 1 month. Demographics of respondents in this study showed 56.94% men and 43.06% women, the majority of respondents had ages between 23 to 28 years, namely as many as 104 or 72.22% of the total respondents, the most recent education held by most respondents was as a bachelor as much as 133 or 92.36% total respondents. The analysis of reliability and validity test can be seen from table 1, table 2.
4.2 Hypothesis Test

After testing the validity and reliability, the researcher then tests for normality, heteroscedasticity, and multicollinearity in order to ensure that the model used is a best linear unbiased estimator. From this test, it can be concluded that the data are normally distributed, multicollinearity does not occur, and there are no symptoms of heteroscedasticity. After passing the classical assumption test, the researcher then tests and analyzes the hypotheses that have been compiled. The results of the hypothesis analysis can be seen in the table 3.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>t-value</th>
<th>Sig.</th>
<th>Regression Coefficient</th>
<th>Conclusion</th>
</tr>
</thead>
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<td>0.080</td>
<td>0.166</td>
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</tr>
<tr>
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<td>0.209</td>
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</tr>
<tr>
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<td>0.095</td>
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<td>1.624</td>
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<td>0.103</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

4.3 Discussion

4.3.1 The Effect of Performance Expectancy on Continuance Intention

Based on table 3, the results show that performance expectancy has a positive and insignificant effect on continuance intention. However, if seen in table 2, based on the factor loading value and the mean value of the PE2 indicator, it can be said that Sakuku is very good at facilitating user transactions by offering speed when making payments. One of the reasons this indicator is highly appreciated by Sakuku users is the use of a QR code during payment, so it can speed up the payment process made. As for significance, it can be assumed because Sakuku application users feel that by using or not using the Sakuku application they can still process payments or transactions.

4.3.2 The Effect of Social Influence on Continuance Intention

According to table 3, the results show that social influence has a positive and significant effect on continuance intention. Furthermore, if seen in table 2, based on the factor loading value and the mean of the SI2 indicator, the main indicator in the social influence variable is still considered unfavorable by respondents. Therefore, improvement is needed so that this indicator can be applied properly, namely by creating more social environments using the Sakuku application. The social environment / network can influence someone to continue using an application because according to Venkatesh et al. [10] people tend to listen to suggestions and input from others they consider important.

4.3.3 The Effect of Hedonic Motivation on Continuance Intention

Based on table 3, the results show that hedonic motivation has a positive and insignificant effect on continuance intention. Furthermore, when seen in table 2, based on the factor loading value and the mean of the HM3 indicator, it can be said that the main indicator in the hedonic motivation variable is still considered poor by respondents. Therefore, improvement is needed so that this indicator can be applied properly, namely by offering a challenge in the form of a mission that must be completed. So that it makes Sakuku application users more challenged to
4.3.4 The Effect of Price Saving Orientation on Online Continuance Intention

According on table 3, the results show that price saving orientation has a positive and significant effect on continuance intention. Furthermore, when seen in table 2, based on the factor loading value and the mean of the PSO3 indicator, it can be said that the main indicator in the price saving orientation variable is considered good enough by the respondents. Even though the mean of this indicator is already on the agreed scale, Sakuku needs to increase the promotion given, with the aim that this indicator can be applied properly. If the Sakuku application can provide the highest and best promotions and offers compared to similar applications, then this will increase the user's intention to continue using the Sakuku application.

4.3.5 The Effect of Habit on Continuance Intention

Based on table 3, the results show that habit has a positive and significant effect on continuance intention. Furthermore, if seen in table 2, based on the factor loading value and the mean of the H3 indicator, it can be said that the main indicator in the habit variable is still considered poor by respondents. Therefore, improvement is needed so that this indicator can be applied properly, namely by creating a feature where users can claim prizes every day in the Sakuku application. This will increase the intensity of users using the Sakuku application, which is expected to be one of their routines later on. Habit can be defined as an action that is carried out automatically in response to a situation, where this action is taken to achieve a certain goal or situation. Based on this understanding, it can be said that if a person is faced with a situation, namely making a payment, then the choice of payment instrument to be used will depend on the person's habits.

4.3.6 The Effect of Trust on Continuance Intention

According to table 3, the results show that trust has a positive and significant effect on continuance intention. Furthermore, if seen in table 2, based on the value of the factor loading and the mean of the T1 indicator, it can be said that the main indicator in the trust variable has been highly rated by the respondent. So what Sakuku needs to do is to maintain this favorable response from these respondents, by regularly updating the system. As well as keeping Sakuku's name good and away from news of being compromised or theft of user data. Trust is an important factor in retaining users, especially when it comes to finance / transactions. With trust in the Sakuku application, users will feel more comfortable and are not afraid of the risks that may occur when using this application.

4.3.7 The Effect of Perceived Risk on Continuance Intention

Based on table 3, the results show that perceives risk has a positive and insignificant effect on continuance intention. Furthermore, when seen in table 2, based on the factor loading value and the mean of the PR2 indicator, the lower the mean of the respondent's answer means the better the respondent assesses this indicator. Based on these results, it can be concluded that Sakuku is an application that users can rely on, therefore it is necessary to maintain this condition. One way to do this is by continuing to ensure that every transaction is carried out transparently and solving problems related to applications or transactions is fast. Meanwhile, from the significance value, it can be said that although Sakuku users know that there are risks when using the Sakuku application, this does not affect their intention to continue using the
Sakuku application. This is also supported by the fact that the millennial generation is a generation that is considered creative and has the courage to take risks [18].

5 Implication and Suggestion for Future Research

The results of the research then yield several managerial implications that can be useful for the Sakuku application. In terms of social influence to increase continuance intention, Sakuku needs to innovate and focus on making improvements related to the social environment of its users. One way is to use a referral marketing strategy, which is a marketing strategy that encourages Sakuku application users to invite new users to join, this invitation can be in the form of an invitation to create an account or an invitation to transact using the Sakuku application. In order for Sakuku users to invite other people to use Sakuku, Sakuku can offer a number of promotions such as discount coupons if someone succeeds in inviting other people to use the Sakuku application. In terms of price saving orientation, to increase continuance intention, Sakuku must be able to convince its users that by using the Sakuku application when making transactions, they can save their expenses. One of the ways that Sakuku can do is by setting up a reward / point system. Where every time a user makes a transaction using Sakuku with a certain nominal value, the user will get points. These points can then be used by Sakuku users to exchange them into coupons / vouchers.

In terms of the habit of increasing continuance intention, Sakuku must be able to make users accustomed to using the Sakuku application when making transactions. One way to create habits and establish this routine is to increase cooperation with more merchants / sellers. These merchants / sellers must cover all layers of sellers, from micro businesses to large businesses, this is so that Sakuku can facilitate all transactions that occur in the daily lives of its users. In terms of trust, to increase continuance intention, Sakuku can do several ways. First, Sakuku can implement biometric security in the Sakuku application, such as security using fingerprints, or using facial recognition. Second Sakuku can provide a live chat feature with customer service in the Sakuku application.

There are several limitations to this study, which means that better research is needed going forward. These limitations include the number of respondents who are still small due to the short research time. As well as not using moderating variables, because the target respondents have an age range that is not too far away. Further research is suggested to be able to distribute questionnaires to more respondents. Besides that, it can also add several new variables to the model such as the service quality variable and include a moderating variable. Besides that, the next research is expected to add indicators to the measured variables. Such as adding a privacy risk to the perceived risk variable, so that it can be more accurate in measuring the strength of this variable in affecting continuance intention.

6 Reference


Enhancing Consumers’ Online Purchase Intention of Clothing Products through Technological Improvement during COVID-19 Pandemic

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Abstract. The COVID-19 pandemic has led to changes in consumer consumption behavior to be conservative. Consumers' consumption trends changed due to the limitation of outdoor activities by the government. However, the data found shows an increasing sales of clothing products near the end of 2020. Therefore, this study aims to understand the mindset of consumers regarding the intention to buy clothing products online during the pandemic based on the combination of theory of planned behavior, technology acceptance model, and perceived risk. Quantitative approach is used in this research, by collecting questionnaires from 115 respondents. The result of this study shows that attitude, subjective norms, and perceived usefulness have positive and significant influence on online purchase intention of clothing products. This research model is extended from the previous research and recommends online retailers to create clean and efficient codes to increase loading speed and website and application performance as its managerial implication.

Keywords: COVID-19, consumer behavior, theory of planned behavior, theory acceptance model, perceived risk, online purchase intention, clothing products

1 Introduction

Fashion is one of the most important industries in the development of the creative industry in Indonesia. In 2013, the second largest contributor to national gross domestic product (GDP) was the fashion industry [1]. The demand for clothing products continues to increase every year, making clothing orders also increase. This happens because consumers are consumptive and fashionable. Consumptive shopping behavior cannot be separated from the development of current trends [2].

In 2020, consumer purchasing power weakened due to a decrease in consumption caused by a decrease in income as a result of the COVID-19 pandemic. In addition to disrupting public health conditions, COVID19 has made the world economy and Indonesia very unstable [3]. The clothing product business during the pandemic experienced demand depression. This is caused by consumers who are reluctant to spend money on secondary or tertiary products such as clothing or handicraft products in the midst of economic uncertainty [4]. This finding is different from [5] which states that many fashion entrepreneurs have actually experienced an increase in income. The shoe company Jaya Shoes Group, for example, recorded a sales increase of 400% from April to August 2020. MarkPlus conducted research on product purchases in Indonesian e-commerce during the third quarter of 2020 and concluded that clothing products were the most purchased products online.
Consumer consumption trends have changed and people are encouraged to shop online to avoid the spread of COVID-19 disease. However, the data found shows that sales of clothing products near the end of 2020 have increased. To be able to take full advantage of the online clothing market, companies must clearly understand the mindset of consumers, plus government policies due to COVID-19 pandemic, industry dynamics, and others. Therefore, the purpose of this study is to conduct an investigation using theory of planned behavior (TPB), technology acceptance model (TAM) and perceived risk because they are considered to have an effect on online purchase intention of clothing products during COVID-19 pandemic.

2 Literature Review and Research Hypotheses

2.1 Theory of Planned Behavior (TPB)

TPB is a development or continuation of its predecessor theory, namely the theory of reasoned action (TRA), in which behavior is determined by behavioral intention. A person's behavior intention is influenced by three variables, attitude, subjective norms, and perceived behavioral control, where each variable affects a person's actual behavior [6]. In making decisions in conditions of disasters and outbreaks, there are many studies that use TPB to understand consumer purchase intention when the economy is unstable, as in [7]. In this study, the variable perceived behavioral control on TPB is not used because it has a similar meaning to the variable perceived ease of use in TAM which is easiness.

2.2 Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) was firstly introduced as a development of Fishbein & Ajzen's Theory of Reasoned Action (TRA) [6][8]. The intention or intention to use the system is directly influenced by two factors, perceived usefulness and perceived ease of use. The TAM model itself has been successfully applied in theoretical research models to predict online purchase intentions and behavior [8]. The application of TPB and TAM in various models has been implemented by many researchers to understand the factors that influence online purchase intention [9], [10].

2.3 Online Purchase Intention

Online purchase intention can be defined as a construct that gives strength to consumers' intention to buy online [11]. Online purchase intention is an appropriate measure of intention when assessing consumer online behavior. Because there is an involvement of information sharing and purchase actions in online transactions, purchase intention will depend on many factors [12]. To find out the consumer mindset regarding online shopping behavior, digital marketers are always encouraged to find out the factors that influence consumers' online purchase intentions [13].

2.4 Attitude

According to Hashim & Musa, attitude is a complete evaluation that indicates whether or not he/she likes to take an action. Attitude towards a product leads to consumer interest and preference [14]. Research conducted by [15] and [16] show that there is a positive and significant influence on the attitude variable towards online purchase intention because of the benefits that can be obtained when shopping online makes consumers have the intention to buy. In addition, Lin through his research [17] also shows that attitude has a positive and significant effect because consumers like to shop online and feel that shopping online is a good idea. Therefore, the first hypotheses is proposed:

H1: Attitude has a positive and significant effect on online purchase intention
2.6 Subjective Norm

Social norms as subjective norms influence people's perceptions in making decisions: agree or disagree based on perceptions of what other people do. This perception is most influenced by specific people, especially those with a common identity. The examples are friends, family members, co-workers, religious organizations, and others [18][19].

Research conducted by [19] and [20] shows that there is a positive and significant influence of the subjective norm variable on online purchase intention because consumers follow the shopping trends of significant people around them, such as family and friends who like to share their online shopping experiences can influence consumers to shop online. Therefore, the second hypotheses is proposed:

H2: Subjective norm has a positive and significant effect on online purchase intention

2.3 Perceived Ease of Use

In the context of online shopping, perceived ease of use is the consumer's perception that shopping via the internet does not require a lot of effort [8]. Research conducted by [15][21] show that there is a positive and significant impact on the variable perceived ease of use on online purchase intention because a user-friendly website greatly facilitates the search, purchase, and payment process. Research by Investigation by [22] also show the influence of perceived ease of use on online purchase intention because consumers can get the information they need about their purchases. Therefore, the third hypotheses is proposed:

H3: Perceived ease of use has a positive and significant effect on online purchase intention

2.2 Perceived Usefulness

In the context of online shopping, perceived usefulness is the consumer's perception that their shopping performance will increase when products are purchased online [22]. Meanwhile, Monsuwé et al. defined perceived usefulness as the level of consumer confidence that shopping via the internet can increase productivity and performance, so it will increase the results of the consumer's shopping experience [23]. Thus, it can be said that the higher the perceived usefulness, the higher the online purchase intention of consumers [24]. Therefore, the fourth hypotheses is proposed:

H4: Perceived usefulness has a positive and significant effect on online purchase intention

2.7 Perceived Risk

Zhu et al. defined perceived risk as a mental cost in the form of future uncertainty that arises from consumer purchasing behavior. This uncertainty will have a direct impact on consumers' online purchase intention [25]. This research study includes 2 types of risk in the questionnaire questions: financial risk and security risk. Financial risk is the feeling of losing money that can occur due to high prices, online fraud, and additional fees. Security and privacy risk is the perception of losing personal data or information that will be misused without the permission of the owner. Research conducted by [26] shows that the variable perceived risk (financial and security risk) has a negative effect on purchase intention in social commerce. Therefore, the fifth hypotheses is proposed:

H5: Perceived risk has a positive and significant effect on online purchase intention

3. Methodology and Data Analysis
Quantitative approach is used in this research, where respondents were selected using judgment sampling technique based on two criteria: Indonesian millennials and generation Z between 18 and 40 years old and have purchased clothing products during COVID-19 pandemic (March 2020 – January 2021). An online questionnaire survey was conducted based on the hypothetical model. After a month of collaboration and endeavors, 189 questionnaires were collected, where 152 valid questionnaires were obtained. But, only 115 questionnaires were used for data analysis. A five-point Likert scale anchored by 1 (strongly disagree) and 5 (strongly agree) was used to evaluate measurement items for each variable. Validity test, reliability test, classic assumptions test, and hypothesis test were carried out using IBM SPSS 26.

4. Research Result and Discussion
4.1 Demographic of Respondents
The majority of respondents are single (91%) women (57%) who work as employees (51%), have a bachelor degree (79%), have an income of IDR 5,000,000 - IDR 9,999,999 (38%), have an age range of 22-25 years (64%), have experience shopping for clothing products online for 1 - 3 years (32%), and shopped for clothing products during the COVID-19 pandemic for 1 - 3 times (63%) between March 2020 and January 2021.

4.3 Hypotheses Test
The validity test and reliability test were carried out and the result show that all latent variables and valid and reliable. Before proceeding to the hypotheses test, classic assumption test is done to ensure the multiple regression model is the best linear unbiased estimators. This research tests for normality, heteroscedasticity and multicollinearity. From the test, it can be concluded this research model is normally distributed and free from heteroscedasticity and multicollinearity symptoms. Then, five hypotheses of this research are analyzed. The hypotheses result can be seen in Table 1.

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Coefficient</th>
<th>t-value</th>
<th>Sig.</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATT → PI</td>
<td>0.263</td>
<td>2.824</td>
<td>0.006</td>
<td>Accepted</td>
</tr>
<tr>
<td>SN → PI</td>
<td>0.178</td>
<td>2.471</td>
<td>0.015</td>
<td>Accepted</td>
</tr>
<tr>
<td>PEOU → PI</td>
<td>-0.212</td>
<td>-1.917</td>
<td>0.058</td>
<td>Rejected</td>
</tr>
<tr>
<td>PU → PI</td>
<td>0.351</td>
<td>5.237</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
<tr>
<td>PR → PI</td>
<td>-0.036</td>
<td>-0.773</td>
<td>0.441</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

4.4 Discussion
Based on Table 1, the first hypotheses "Attitude has a positive and significant effect on online purchase intention" is accepted. The result is in line with the results of research done by [15] and [16]. This proves that consumers have a positive evaluation of online shopping which affects consumers' intention to buy clothing products online during a pandemic. Consumers, especially young women, feel that buying clothing products online during a pandemic can provide benefits and satisfaction such as promos and cashback. The second hypotheses "Subjective norms have a positive and significant effect on online purchase intention" is accepted. The result is in line with the results of research conducted by [15], [16], [20], [27]. The closest people such as family will encourage consumers to limit activities outside the home.
including shopping, and suggest shopping activities to be carried out online to avoid the spread
of the COVID-19 virus. Thus, consumers are encouraged to shop for clothing products through
websites and/or mobile applications.

The third hypotheses "Perceived ease of use has a positive and significant effect on
online purchase intention" is rejected. This result is not in line with the results of research by
[15], [16], [22]. This happens because e-commerce platforms such as websites and mobile
applications have long been around the world, including Indonesia, and play an important role
in human life. Websites and mobile apps are currently very user-friendly in terms of user
interface (UI), easy to use and navigate, and require minimal internet knowledge or mental
effort, especially for users who come from the millennial and generation Z because they grew
up with digital technology. Thus, ease of use of websites and applications is no longer an option
for consumers, but a necessity.

The fourth hypotheses "Perceived usefulness has a positive and significant effect on
online purchase intention" is accepted. The result of this study is in line with the results of
research by [15], [24]. This research proves that the use of websites and applications can
improve consumer performance in shopping for clothing products online during the COVID-19
pandemic. This can be seen from the emergence of the COVID-19 pandemic which limits
consumer activity outside the home, making consumers feel that the existence of websites and
applications is very useful for shopping at home, keep consumers productive in finding,
comparing, and buying clothing products effectively and quickly.

The fifth hypotheses "Perceived risk has a negative and significant effect on online
purchase intention" is rejected. The result of this study is not in line with the research results
conducted by [15] and [26]. Consumers are sure and not afraid that the product to be purchased
is not worth the money especially during pandemic. In addition, the government regulations
ensures that consumers are safe from security and privacy risks. Millennial and generation Z
consumers are also young people who dare to take risks to get the best possible profit. Thus,
consumers' risk perceptions are not significant for online purchase intentions.

5. Implication and Suggestion for Future Research
5.1 Theoretical Implications

In terms of theory testing and novelty, this study attempts to test the combination of
theory of planned behavior, technology acceptance model, and perceived risk. It is important to
note that this research model is extended from the previous literature by adding security risk
into perceived risk. The measured items for questionnaires were adopted and modified from
several research. This combination theory enriches understanding of consumers’ intention to
buy clothing products online during the pandemic, to provide insight for academicians as well
as clothing entrepreneurs.

5.2 Managerial Implications

In terms of perceived usefulness, The software engineering team of clothing product
companies and marketplace platforms can make regular improvements to the website and
mobile application so that they can be used and attract the attention of potential new consumers
during the COVID-19 pandemic. Algorithms on the frontend and backend are made clean (clean
code) and as efficient as possible to speed up the process on the website and application.

In terms of attitude, digital marketers should create a new pricing strategy that is
feasible with a lower price to be affordable according to their target market. This can be used
by including an online survey that is inserted into products delivered to consumers in the form
of discount vouchers that can be used after filling out the survey.
In terms of subjective norms, digital marketers can initially focus on creating digital campaigns that can increase consumer interest in clothing products through the company’s website and mobile application. Content in the digital campaigns can include discounts and promotions for clothing products if purchased online, especially for young women who can later be forwarded by one person to another via social media.

5.3 Limitations and Suggestions for Future Research

There are always limitations to research, including this study. The COVID-19 pandemic in this study only covers the period between March 2020 until January 2021. The sample size is still considered small due to the limited research time. The future research is encouraged to explore other industries which are heavily affected by COVID-19 pandemic and add more respondents. The clothing products can also be segmented specifically e.g. casual, formal. The research model can be extended by adding COVID-19 pandemic as the moderating variable and/or other new latent variables. For example, privacy risk in this study is only limited to financial and security risk. Therefore, it is expected to add other risks.

6. Reference


The Effect of Regulatory Sandbox on The Behavior of FinTech Actors in Indonesia Using Theory of Planned Behavior Approach

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Abstract. The growth of FinTech has become a new phenomenon in Indonesia. Though, Indonesia’s Government has implemented regulation to facilitate the development of digital financial innovations known as Regulatory Sandbox. Still, the ratio of legal FinTech is very small compared to illegal FinTech. This research using quantitative methods by building 8 hypotheses through the Theory of Planned Behavior approach. The primary data is based on 107 respondent’s, resulted 6 hypotheses have a positive effect while 2 hypotheses have no effect. The findings indicate that one of the reasons why illegal FinTech is greater than legal FinTech is due to lack of interest from FinTech Actors whereas the factor that reduces this interest is the low influence of the authorities and stakeholders in making the Regulatory Sandbox a top priority. This research provides benefits for all stakeholders to make the necessary improvements to increase interest in participating in the Regulatory Sandbox.

Keywords: Financial Technology, Regulatory Sandbox, Theory of Planned Behavior, Indonesia

1. Introduction

Financial Technology, also known as FinTech, is growing so rapidly nowadays. Innovation, which is the result of technological development is utilized for facilitating economic activity. FinTech is a contributor to innovation in the industry and financial sector, driven by factors of economic sharing, regulatory aspects and aspects information Technology [1].

To support the development of FinTech, Regulators apply regulations and standardization for FinTech to obtain registered and licensed status, through the Regulatory Sandbox mechanism that regulated by Central Bank (PBI) No.19/12/PBI/2017 and Financial Services Authority (POJK) No.13/PJOK.02/2018 [2][3].

Central Bank of Indonesia (BI) reported that economic transactions through e-commerce grew significantly, reaching 162% from 2017 to 2019. Likewise, online payments via electronic money from FinTech have gone beyond transactions from traditional banks [4].

If we take a look on number of FinTech in Indonesia, for the first quarter of 2020 as reported by The Financial Services Authority (OJK), there were 161 registered FinTech entities, with an asset value of IDR 3.38 trillion and a loan value of IDR 95.4 trillion as disbursed loans, this figure increased by 17.05% or IDR 81.5 trillion over the previous period. On the other side, OJK which is incorporated with the Investment Alert Task Force has terminated 2,002 illegal
and unregistered P2P Lending FinTech Entities, 485 Illegal Investment Entities and 93 Unlicensed Pawn Businesses. It is estimated that the total loss to society due to fraudulent investment fraud has reached IDR 92 trillion over the past 10 years [5].

Though, Indonesia’s Government has implemented regulation to facilitate financial development along with digital innovations, which is known as Regulatory Sandbox. Still, the ratio of licensed and registered FinTech is still very small compared to illegal FinTech.

The benefits and contribution of this research are as follows: First, FinTech players will obtain insights how important to follow Regulatory Sandbox so that the intention to participate in the Regulatory Sandbox increases. Second, The FinTech industry will continue to grow healthily and safely with an increase in the number of registered and licensed FinTech. Third, The Public as FinTech consumer have better understanding and knowledge how to choose safe FinTech. Fourth, The government, through the Authority Bodies, will get insights in developing strategies for financial literacy and inclusion as well as to make continuous improvements and adjustments to regulations for the development to have a more competitive FinTech. Fifth, Academics will be stimulated to carry out research development related to the FinTech ecosystem, especially in its regulatory and novel aspects.

2. Literature Review

The Sandbox framework was first designed by the U.S. Consumer Financial Protection Bureau (CFPB) in 2012 through a project called Project Catalyst (CFPB 2016). Meanwhile, the term of Regulatory Sandbox was first introduced by U.K. Financial Conduct Authority (FCA) in 2015 and spread throughout the world to more than 20 countries [6].

The benefits of adopting the Regulatory Sandbox have a very positive effect on investment growth and play an important role in increasing the inflow of capital into the FinTech business ecosystem by eliminating regulatory uncertainty [7].

The government supervises FinTech to regulate its implementation in encouraging all forms of innovation by applying the principle of protection for consumers through the implementation of risk management in order to maintain effective and reliable monetary stability and financial system stability [8]. The Regulatory Sandbox mechanism details for Payment System regulated by a Regulation of Members of the Board of Governors (PADG) No. 19/15/PADG/2017, while regarding the execution process regulated by PADG No. 19/14/PADG/2017 [9][10]. For Digital Financial Innovation, the guidelines of Regulatory Sandbox mechanism regulated by Circular Letter of Financial Services Authority (SEOJK) No. 21/SEOJK.02/2019, while for registering the Digital Financial Innovation regulated through SEOJK No. 20/SEOJK.02/2019 [11][12].

This research was developed using Theory of Planned Behavior (TPB). TPB is an extension of Theory of Reason Action (TRA) which was introduced earlier by Fishbein and Ajzen which aims to know and understand individual behavior in making decisions [13]. TRA states that a person's behavior is based on Intention, while intention is influenced by 2 factors, namely Attitude and Subjective Norms. Intention indicates how much someone has the desire to try or do it as a form of behavior. Meanwhile, Subjective Norms relate to social pressure or views on someone who is felt to take action or not [14].

The development of TRA into TPB was continued by Ajzen by adding Perceived Behavioral Control as a factor that also influenced Intention and Behavior. Ajzen explained that Attitude toward the Behavior, Subjective Norms and Perceived Behavioral Control can be influenced by Beliefs [15]. The concept of TPB can be seen in Figure 1.
According to previous research using TPB, Attitude and Subjective Norms as factors influencing Intention has a positive effect on Intention [16]. While Perceived Behavioral Control also has an positive effect on the Intention [17].

Based on the TPB and supported by several previous studies [18], a conceptual framework for the behavior of FinTech actors towards the Regulatory Sandbox is formulated into variable and hypothesis constructs. There are 8 hypotheses built through this research as follows:

**Hypothesis 1.** Behavioral Beliefs regarding the Regulatory Sandbox have a positive effect on the Attitudes of FinTech Actors.

**Hypothesis 2.** Normative Beliefs regarding the Regulatory Sandbox have a positive effect on the Subjective Norms of FinTech Actors.

**Hypothesis 3.** Control Beliefs regarding the Regulatory Sandbox have a positive effect on the Perceived Behavioral Control of FinTech Actors.

**Hypothesis 4.** Attitude has a positive effect on the Intention of FinTech Actors towards the Regulatory Sandbox.

**Hypothesis 5.** Subjective Norms have a positive effect on the Intention of FinTech Actors towards the Regulatory Sandbox.

**Hypothesis 6.** Perceived Behavioral Control has a positive effect on the Intention of FinTech Actors towards the Regulatory Sandbox.

**Hypothesis 7.** Perceived Behavioral Control has a positive effect on the Behavior of FinTech Actors towards the Regulatory Sandbox.

**Hypothesis 8.** Intention has a positive effect on the Behavior of FinTech Actors towards the Regulatory Sandbox.

### 3. Methodology and Data Analysis

The research method that used in this research is a quantitative approach. The quantitative approach is used by using numerical data which is then analyzed to gain deeper understanding and knowledge [19]. While processing and analyzing data using Structural Equation Modeling (SEM) through the Partial Least Squares (PLS) approach to predict the most influential variables, which are important to provide managerial implications [20].
The primary data in this research taken from respondent’s answer on questionnaires, who were collected as research samples from FinTech practitioners, namely people who are involved in FinTech and have knowledge about regulations especially related to the implementation of the Regulatory Sandbox in Indonesia. While the sampling technique uses non-probability sampling techniques, supported through purposive sampling method [21].

The number of valid samples that meet the questionnaire screening requirements in this research are 107 respondents as research samples to be processed and analyzed. The number of samples has exceeded the minimum standard and is included in the medium size category [20][22].

Based on the TPB concept that underlies this research, the construct of the concept into a measurable variable is carried out through the operationalization of the variable [23]. Through this research, there are 8 latent variables and 27 indicators as the operationalization of the variables.

For measurements on these variables is using a Likert scale with five-point value. Likert scale is used to measure attitudes, opinions and perceptions of people about the phenomenon that occurs [21][24].

Based on 107 respondent’s answer on questionnaires. Data, then was processed for validity and reliability test using Structural Equation Modeling (SEM) with the Partial Least Squares (PLS) approach using SmartPLS application.

Validity test is performed to show the validity of a test and to make sure that test can provide an overview of the initial goal to be measured [25]. In this research, the validity test was conducted based on Convergent Validity and Discriminant Validity. Convergent validity refer to Outer Loading and Average Variance Extracted (AVE) [26]. Standard outer loading value is 0.70 or higher as mentioned by Chin [27]. Whereas the AVE value is above 0.5 [28].

For Discriminant Validity, conducted to make sure there is no overlap within constructs and there is no tendency to measure the same thing, a construct must be unique and can capture specific phenomena [26]. Measuring discriminant validity in this research is based on the Cross Loading factor with value should be above 0.60 and The Fornell-Lacker Criterion value is expected to be above 0.70 [27]. The results of the validity test show that all measurement parameters are valid.

Reliability test is performed to measure the questionnaire, it is said to have a reliable or reliable value if the respondent's answer is stable and consistent [29]. The Reliability test used in this research is based on Composite Reliability with value should above 0.70 [27] and Cronbach's alpha value, the general threshold value is 0.70 and can be reduced to 0.60 in exploratory research [20]. Reliability test results show that all measurement parameters are reliable.

For inner model analysis, it is also called structural model analysis. The R-Square value of each endogenous variable is above the value of 0.33 indicating the coefficient of determination has an indication that the model is moderate in terms of exogenous variables explaining endogenous latent variables, while for Behavior variable has value 0.53 shows that the factors that influence the Behavior have contributed as much as 53%, meaning that there are other factors as much as 47% that contribute to the Behavior. This is useful for research development to add other potential variables to increase the accuracy of research.

For the significance test through the t-value statistics, direct effect between variables in general has a t-value above 1.96 which are H1 (11.048), H3 (10.712), H2 (9.502), H8 (4.334), H4 (3.738), H6 (2.018). However, there are 2 conditions with insignificant t-value, which are H7 (1.484) and H5 (1.702).
4. Research Result and Discussion

Based on the structural analysis inner model on the significance test of the t-value and p-value, the results of the research hypothesis can be seen in the Table 1 below.

Table 1. Hypothesis Result

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Path</th>
<th>t-value</th>
<th>p-value</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Behavioral Beliefs → Attitude</td>
<td>11,048</td>
<td>0,000</td>
<td>Accepted</td>
</tr>
<tr>
<td>H2</td>
<td>Normative Beliefs → Subjective Norms</td>
<td>9,502</td>
<td>0,000</td>
<td>Accepted</td>
</tr>
<tr>
<td>H3</td>
<td>Control Beliefs → Perceived Behavioral Control</td>
<td>10,712</td>
<td>0,000</td>
<td>Accepted</td>
</tr>
<tr>
<td>H4</td>
<td>Attitude → Intention</td>
<td>3,738</td>
<td>0,000</td>
<td>Accepted</td>
</tr>
<tr>
<td>H5</td>
<td>Subjective Norms → Intention</td>
<td>1,702</td>
<td>0,089</td>
<td>Rejected</td>
</tr>
<tr>
<td>H6</td>
<td>Perceived Behavioral Control → Intention</td>
<td>2,018</td>
<td>0,044</td>
<td>Accepted</td>
</tr>
<tr>
<td>H7</td>
<td>Perceived Behavioral Control → Behavior</td>
<td>1,484</td>
<td>0,139</td>
<td>Rejected</td>
</tr>
<tr>
<td>H8</td>
<td>Intention → Behavior</td>
<td>4,334</td>
<td>0,000</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Regulatory Sandbox is believed by FinTech actors have a big role in the development of the FinTech industry in Indonesia, this is indicated by the hypothesis of all aspect related to Beliefs (H1, H2 and H3) have a positive effect.

Support from related parties who have an influence on FinTech actors is considered not to have contributed to the interests or intentions of FinTech actors to follow the Regulatory Sandbox. This is indicated by the hypothesis H5, the results have no effect (rejected), this shows that the Regulatory Sandbox has not become a strong concern as a norm that triggers FinTech actors to follow Regulatory Sandbox.

FinTech actors have an intention to do the Regulatory Sandbox is more influenced by the encouragement of Attitudes considering the gains or losses that are obtained from following the Regulatory Sandbox (H4) and the encouragement of Perceived Behavioral Control related to anything that is deemed to make it easier or difficult to do the Regulatory Sandbox (H6), both are received as having a positive effect. However, this Perceived Behavioral Control does not affect FinTech actors to actually follow the Regulatory Sandbox, this is indicated by the hypothesis H7 the results have no effect (rejected).

The behavior of FinTech actors in following the Regulatory Sandbox is more triggered by the interest of the FinTech actors themselves, shown by hypothesis H8, the results are accepted and have a positive effect. This indicates that the phenomenon of low registered FinTech is due to the lack of interest of FinTech actors to follow the Regulatory Sandbox while one of the factor that reduces this interest has shown on the result of hypothesis H5 above.

5. Implication and Suggestion for Future Research

This research provides benefits for all stakeholders to make necessary improvements for better FinTech climate for the advancement of the digital economy in Indonesia. The following are some suggestions for the development of the FinTech industry in Indonesia and for research development in the future.

More efforts are needed to increase the motivation of influential parties, both the authorities and stakeholders in making the Regulatory Sandbox a priority for FinTech actors so that
understanding and interest in the behavior of FinTech actors towards the Regulatory Sandbox can be increased, several ways that can be considered, including: First, the effective collaboration of each FinTech stakeholder, both by regulators, FinTech actors and various communication media in improving socialization and financial literacy on an ongoing basis. Second, to increase law enforcement in providing a deterrent effect for illegal FinTech that make false investments and harm the public by regulating types of punishment or treatment that are more tangible and have an impact on FinTech owner So that illegal FinTech will not come and go many times but prefer to take care of licensing legally. Third, to increase awareness of the public in campaigning the only legal FinTech that has licensed by regulator which can guarantee the security of financial transactions. Fourth, the FinTech Association should open more access and reaches more widely to all FinTech actors, whether for established FinTech or new startup, even for Small Micro Medium Enterprises or individuals who are still unfamiliar with licensing and rules of the game but have high enthusiasm for FinTech.

To complement the limitations of this research and the development of future research, the following points can be considered: First, to add other independent variables or other relevant mediating variables to increase the value of the research model construction. Second, Increasing the number of respondents on a larger scale will increase the accuracy of the research. Third, combining the theory with other relevant theoretical approaches such as acceptance theories in adopting the Regulatory Sandbox or any other theory. Fourth, combining quantitative research methods with adding qualitative methods to improve research accuracy. Fifth, based on the statistical analysis on the structural model, the results of the indirect effect significance test for several paths have a significant value, this can be the subject of research to build other hypotheses.

6. Reference

[12] Otoritas jasa Keuangan. SEOJK No. 20/SEOJK.02/2019 mengenai mekanisme


[27] Chin WW. *PLS is to LISREL as an Principal Component Analysis is to Common Factor Analysis*. 1995.


The Effect of Dynamic Capabilities on Customer Engagement Mediating by Sustainable Digital Transformation of Print Media Industry in Indonesia

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Abstract. This study aims to analyze the emerging influence of dynamic capabilities, digital market capabilities, digital leadership capabilities, and digital technology capabilities on sustainable digital transformation and audience engagement strategies. There are 95 print media industries that were collected as data. Then, this unit of analysis from 95 print media industries applies descriptive and explanatory methods. Where, it is obtained that sustainable digital transformation functions as a driver of the performance of the audience engagement strategy.

This research shows significant results for its contribution to strategic management theory, especially those related to clarity on the role of sustainable digital transformation in responding to digital disruption. Practical implications related to the results of this research are shown in managerial practices that provide advice regarding the factors that are the focus of sustainable digital transformation development, especially in the context of reinventing their core business in an effort to accelerate digitization.

Keywords: dynamic capability, engaging audience strategy, sustainable digital transformation

1 Introduction

Fundamentally, the dominance of the print media industry is getting eroded and this affects their business model [1]. This is also influenced by the behavior shown by online readers, where they focus more on digitization, [2]. For example, the rapid use of digital technology and the internet serves as a catalyst, which in recent years has transformed the print media industry such as newspaper publishing [3]. Furthermore, disruptive innovations have the potential to disrupt and fundamentally change the way businesses operate [4]. The innovations referred to here are innovations that use evolving technology so that it can change their current performance metrics, and eventually replace established competitors. In addition, different performance metrics from competing firms are offered to meet the target of disruptive innovation [5].

Three trends facing the Indonesian print media industry, this is in accordance with the statement from Nielsen (2018). First, the loss of readers and a drastic drop in revenue. Based on the results of
a survey of print media conducted by Nielsen Company, between the fourth quarter of 2018 and the third quarter of 2019 in 11 cities with a total of 17,000 respondents, it is known that the market penetration of print media is 8% or around 4.5 million people. Furthermore, under certain conditions, actually reading habits only shift from print platform to digital platform. Consumers from print media tend to be aged 20-49 years (74%), employees (32%), besides that the majority of readers come from the upper class (54%). Then related to advertising spending, it was found that in the January-September 2017 period, this was Rp. 21 trillion, when compared to the January-September 2013 period, this experienced a decrease of 13%, which is around Rp. 25 trillion. Second, it was found that the leaders did not have a structured strategy, which would be implemented in order to generate income from the online side, as the Indonesian Press Council (2019) argues. Third, based on data presented by the Association of Indonesian Press Companies (Serikat Perusahaan Pers/SPS, 2020), from January to September of 2013 there were 268 print media, consisting of newspapers, tabloids, and magazines, but the decline occurred in the January-September period of 2019, which is only 220.

The research question of this research is: can the print media industry in Indonesia be able to reconfigure digital market capabilities, digital leadership capabilities, and digital technology capabilities in the context of sustainable digital transformation to build an attractive audience strategy? The aim of this study is to examine how dynamic capability, digital market capability, digital leadership capability and digital technology capability, affect digital transformation and engaging audience strategy of print media industry to cope with digital disruption.

2 Literature Review and Hypothesis Development

The process of learning new domains can be facilitated by high-level organizational capabilities, these are seen as dynamic capabilities. New asset combinations will be created as well as meeting market needs through the building of new capabilities [6] [7]. In addition, the definition of dynamic capability is also defined by Helfat (2007) [7], which states that "the capacity of an organization to intentionally create, expand, or modify its resource base". Another opinion is also expressed by Ellonen [8], where it is stated that changes in technological capabilities in running a business as well as a changing environment, this can lead to changes both in operational capabilities and in dynamic capabilities. Furthermore, the assumption related to dynamic capabilities is expressed by Ellonen [8], the assumption of interactive mechanisms, especially those related to reconfiguration of resources and assets, is useful for developing operational capabilities, especially related to digital markets.

In running the company on a daily basis, the first level of ability that must be possessed is operational ability [9] [10]. This capability involves several activities, such as manufacturing certain products, executing activities based on a set of routines and coordinating all tasks related to required activities [8]. In addition, product innovation is directed from digital market capabilities and technology.

Service to the community requires an interactive mechanism that occurs between dynamic capabilities and development in operational capabilities, it is digital market capabilities. It is because the main antecedent comes from potential customers who are competitive and have superior performance in the company. Consisting of 4 components related to the digital market capability component [11], they include: (1) understanding customer needs and also the necessary actions in
collecting and processing customer knowledge; (2) efforts to satisfy customer needs are the needs of the company, where this can be done through offering appropriate product features; (3) Customer relationship is the focus, where the ability to identify and serve customers is carried out, it is also in building customer loyalty; and proper channels are very necessary when communicating with customers.

Hypothesis 1: The demonstrated effect of digital market capabilities on the ability to reconfigure

Based on the opinion of Ben [12], it is stated that fundamental changes in the life of a leader can occur because of a digital business strategy, even this has become a very important issue and this can occur from various types of institutions. Another factor that is also very influential is access to information, which when this access is abundant, transparency occurs in all things. It will affect the perspective of a leader, this is because in this digital era that is full of information, understanding the stakeholder groups that must be considered is greatly helped by the presence of sufficient information.

In addition, Bennis [12] also mentions that adaptive capacity is one of the important things for effective leaders. Characters that appear in adaptive capacity refer to: resilience, which is getting back up from adversity or difficulties, openness to new things, trying to try new things even though you have to sacrifice, getting new things even though you have to try hard, and finally being able to learn from failure.

Hypothesis 2: demonstrated effect of digital leadership ability on ability to reconfigure.

Digital technology capabilities include both tangible and intangible resources. It also includes related processes and knowledge. These include manufacturing techniques and knowledge, efficient manufacturing processes, production facilities, new product development, quality control procedures, both managerial and organizational skills, and predictable technological changes [10]. Further cost reduction will occur when efficiency improvements in R&D and manufacturing processes are carried out, so consistency in supply and resulting competitiveness will occur as well [13]. There are 3 main components related to digital technology, namely: (1) the ability to design and produce online products with certain features; (2) production systems and know-how, related to the ability to carry out daily processes in the maintenance of online product functions; (3), managerial skills related to the ability to define daily work processes and product development.

Hypothesis 3: The effect of ability to reconfigure on the capabilities of digital technology.

The world of marketing has undergone fundamental changes through the internet and the development of digital technology. Therefore, the role of the customer as the recipient of marketing communications is no longer passive. So that traditional communication approaches can be changed by the internet and technology, as a result interaction with customers can be encouraged more quickly, openly, and continuously. So, this is the importance of customer engagement in this digital era, and research related to this is increasing with many companies using social media platforms to connect with customers, such as involving them in content so that one customer is connected to another, for example sharing information via twitter. In addition, the company’s interactions with customers are more encouraged, for example responding to customer complaints and comments more quickly.
Customer orientation (OC) is one of the approaches in the discussion of the marketing domain. The development of the use of information technology facilities provides positive performance, which offers support for the OC approach in various purposes. In this activity the collection, storage, processing, analysis and dissemination of data becomes a very important process. This is because top management can be assisted by data that is converted into knowledge, when making decisions, which will affect strategies and policies in marketing. Furthermore, the client-oriented approach has an important role in the identification of customer preferences. This can be in the form of information related to goods or services that are available or offered. In addition, customer profile analysis is an important process in this context where data is provided by the company. According to Dilogini (2019) [14] customer behavior is defined as "a multidimensional concept that includes all decisions on actions taken both by individuals and groups that are directly related to the collection and use of goods and services to fulfill current and future desires, including decisive decisions, create an action process".

Hypothesis 4: The demonstrated influence of the Digital Market’s ability to sustainable digital transformation

According to Solis [15], there are three main elements of digital transformation identified by digital marketing analysts from the Research and Advisory Firm Altimeter Group, namely: (1) understanding the digital customer experience; (2) changes to the company's vision and leadership; (3) development of the digital transformation team. In addition, the emphasis is also placed on the role of mobile phone, where it acts as a back channel. Cell phones are also a lifestyle for them, because through a small screen is a way of interacting with the world.

This radical increase in performance through the use of this technology is called digital transformation [16]. The use of digital developments, this ranges from analytics, mobility, social media and smart tools to extending the use of traditional technologies, which serve to transform customer relationships, internal processes and executive value propositions of all industries. But the rapid development of the industry can also cause damage to various industries, so these changes must continue to be considered.

Experts encourage companies to start their digital transformation journey, this is done through digital technology [16]. This is because customers, employees and competitors continue to put pressure on them, so acceleration must be made on their digital transformation. Digital transformation is considered successful if it focuses not only on the application of new technologies, but also on how new technologies can be exploited. So that digital transformation initiatives can come from customer experience, operational processes, and business capital. In addition, the interaction function must also be known by the company, this is because it can help in uncovering the obstacles that occur in a company. Where technology is said to be successful when it can push up not only from the bottom up. So, the focus is on encouraging change. And this can be identified when employees try to push their transformative vision, especially those related to engagement, management and KPI (Key Performance Indicators).

Another opinion also states that it is organizational sharpening efforts that make digital transformation successful. This is done by utilizing strategic assets owned in new ways. Even though a company is already in an innovative digital technology environment, they still have a long way to go towards digital transformation. One of them is the role of leadership, which has a very important role, because be it traditional or new technology, the key to digital transformation is sharpening the
vision and driving changes in the way the company operates. And this is a challenge that all components must overcome.

Hypothesis 5: The effect of digital leadership on sustainable digital transformation

According to O’Hea [17], various business functions have undergone changes as a result of digital technology. These functions include the marketing function as well as other functions that include business structures, systems, processes, and especially human capabilities that are used to take advantage of business opportunities in the digital era. However, organizations sometimes experience difficulties in analyzing the opportunities and challenges triggered by the development of the internet and digitalization, resulting in a reduction in the value and benefits of investments made in the digital sector. So helping organizations understand, measure, and develop digital capabilities is fundamental to dealing with these difficulties.

For companies that have not yet gone digital, new support is needed to find competitiveness and new tools to utilize digital technology for their business [17]. Thus, an increase in business value will emerge as a result of the development of digital capabilities and the purpose of assessing digital capabilities in their contribution to organizational needs. Then digital capabilities will be inherently owned when an organization has an internet connection. There are various ways that organizations can use to achieve these capabilities, such as understanding the opportunities that exist and learning to measure, and developing their digital capabilities, which will help them be in a better position when they have to compete in the digital economy era.

The positive impact is shown in almost all departments in the organization of digital technology capabilities, but maximum results are only obtained when the transformation is carried out. This is where the role of digital capabilities in organizations in assisting the digital transformation process emerges, where they will rethink what best value is provided to customers and also create operating models that can generate advantages regarding the latest possibilities as competitive differentiation. Increasing organizational capabilities of digital technology will provide added value that results in more effective business processes, opportunities to develop organizational careers, training opportunities and needs, creation of new jobs, and cost reductions, as well as increasing levels of professionalism, productivity, competitiveness and especially profit.

Hypothesis 6: The demonstrated effect of digital technology capabilities on sustainable digital transfers.

Vivek’s [18] emphasis on customer engagement states that, there is a relationship between the intensity of individual participation on what the organization and/or organization’s activities offer. So, this shows that there is a relationship between the phenomenon of customer engagement behavior and understanding the value of co-creation, where there are 3 dimensions, namely cognitive, emotional, and behavioral [19]. Then after being identified, the level of customer involvement can be determined. Furthermore, regarding the brand, currently it does not meet customer expectations, it will be called a "negative brand attitude", which results in a decrease in buyer behavior.

Furthermore, regarding the analysis carried out on branded applications, it is shown that there are two categories of applications, namely informational and experiential. Information application content, this provides a utilitarian or functional experience, while also making it easier for customers to achieve their goals. Then, if the content of this experience contains an experience-based incentive offer, then the content can provide intrinsic joy and entertainment. Bellman [20] states that one's
motive for engaging in a mobile application is “relaxing and relieving stress”. So, seeing this emphasis, the contribution of hedonic nature has a high involvement, for example the emergence of the spirit of customer excitement. So there is a correlation between utilitarian motives and experience-based motives with functional and hedonic motivations as identified by Kim [21]. In addition, the efficiency aspect also shows functional motivation, which will make it easier to use, save time and hedonic motivation that looks fun.

Based on the opinion of Zhang [22], reciprocal interactions in the social environment will cause customer socialization, this occurs when a platform is for customers with the same interests, so they will give recommendations, as well as comments on various services. When the interaction is taking place, customers will build an online identity, besides that they will also try to form a network to achieve social benefits, for example social support, friendship and intimacy. This is because the main value comes from the support of various parties during the interaction process, so that customers feel that they receive attention and value from other parties. What is meant by sociability refers to participation, which is related to conditions in which customers provide constructive feedback and useful suggestions.

Hypothesis 7: The demonstrated effect of continuous digital transformation on the audience

3 Research Methods

Descriptive and explanatory survey methods are used in this study [23], where the unit of analysis for the print media industry in Indonesia is a member of the Indonesian Press Council (Indonesian Press Council). There are 220 print media industries in Indonesia that are used as the population, then this will be verified by the Indonesian Press Council first, both administratively and factually. Then, general leaders, or editor-in-chief or business leaders who will be the respondents of this research. The reason for selecting senior leaders is because they have the ability to evaluate innovation initiatives in improving company performance. Furthermore, regarding data collection, this was done by sending questionnaires to 220 print industry leaders, but only 95 questionnaires met the analysis requirements. Furthermore, with PLS SEM the data will be analyzed, the most powerful method in applying all data scales is Partial Least Square (PLS), because this can be recommended for a minimum of 30 samples [23]. In addition, in confirming the theory and explaining the relationship between latent variables, PLS SEM can also be used.

Furthermore, when all variables and indicators have been determined, the next thing to do is outliers, missing values, and validity and reliability tests with Smart-PLS. Each of these tests has its own function, for example to see if there are data deviations, then outlier testing is used, then when you want to see if data is missing or incomplete, missing value analysis will be used. And from all these tests, all indicators show that all indicators and dimensions fulfill the requirements.

If to see the extent to which an indicator can measure a construct validity test will be used, while knowing the consistency of the variables in the latent measurement, this is used a reliability test. So, good validity will be obtained when the latent construct: (1) loading factor load (λ) is 0.5, (2) T-Statistic > 1.96, and the Smart-PLS results will provide validity for each indicator in each variable. The evaluation results show that each indicator and dimension used in this study is valid because it meets the required requirements.
4 Findings and Result

**Measurement Model (Outer Model)**

Convergent Validity

Reflective indicators can be used to see the loading value of each construct indicator. Convergent validity can be practically assessed when the loading value is more than 0.7. Then, must be more than 0.5 is the value that must be owned by Average Variance Extraction (AVE) (Chin 1998, in Ghozali 2015; p.74). And the results of this study indicate that the loading factor value is more than 0.7, as has been presented below:

<table>
<thead>
<tr>
<th>Table 1. Cross Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RA1</strong></td>
</tr>
<tr>
<td><strong>RA2</strong></td>
</tr>
<tr>
<td><strong>RA3</strong></td>
</tr>
<tr>
<td><strong>CRs 1</strong></td>
</tr>
<tr>
<td><strong>CRs 2</strong></td>
</tr>
<tr>
<td><strong>CI1</strong></td>
</tr>
<tr>
<td><strong>CI2</strong></td>
</tr>
<tr>
<td><strong>CN1</strong></td>
</tr>
<tr>
<td><strong>CN2</strong></td>
</tr>
<tr>
<td><strong>CR1</strong></td>
</tr>
<tr>
<td><strong>CR2</strong></td>
</tr>
<tr>
<td><strong>CR3</strong></td>
</tr>
<tr>
<td><strong>CC1</strong></td>
</tr>
<tr>
<td><strong>CC2</strong></td>
</tr>
<tr>
<td><strong>STV 1</strong></td>
</tr>
<tr>
<td><strong>STV 2</strong></td>
</tr>
<tr>
<td><strong>SG1</strong></td>
</tr>
<tr>
<td><strong>SG2</strong></td>
</tr>
<tr>
<td><strong>SG3</strong></td>
</tr>
<tr>
<td><strong>DEE 1</strong></td>
</tr>
<tr>
<td><strong>DEE 2</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>----</td>
</tr>
<tr>
<td>STL</td>
</tr>
<tr>
<td>STL</td>
</tr>
<tr>
<td>CE1</td>
</tr>
<tr>
<td>CE2</td>
</tr>
<tr>
<td>CE3</td>
</tr>
<tr>
<td>OP1</td>
</tr>
<tr>
<td>OP2</td>
</tr>
<tr>
<td>OP3</td>
</tr>
<tr>
<td>BM1</td>
</tr>
<tr>
<td>BM2</td>
</tr>
<tr>
<td>FC1</td>
</tr>
<tr>
<td>FC2</td>
</tr>
<tr>
<td>RS1</td>
</tr>
<tr>
<td>RS2</td>
</tr>
<tr>
<td>MM1</td>
</tr>
<tr>
<td>MM2</td>
</tr>
<tr>
<td>MM3</td>
</tr>
<tr>
<td>Cpr1</td>
</tr>
<tr>
<td>Cpr2</td>
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<tr>
<td>Cpr3</td>
</tr>
<tr>
<td>Crf1</td>
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<td>Crf2</td>
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<tr>
<td>Cinf1</td>
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<tr>
<td>Cinf2</td>
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<tr>
<td>Cinf3</td>
</tr>
<tr>
<td>CKn1</td>
</tr>
<tr>
<td>CKn2</td>
</tr>
<tr>
<td>CKn3</td>
</tr>
</tbody>
</table>
The item is valid if the loading factor value is above 0.50 and the loading factor is higher than other variables.

Discriminant Validity

Testing discriminant validity with reflexive indicators, this is used to see the cross loading factor that exists in each variable, and this must be > 0.7. Furthermore, another method that can also be used is to compare the square root of the AVE in each construct with the correlation value between the constructs in the model. Furthermore, these results will show discriminant validity results when the AVE square value of each construct is greater than the correlation between constructs in the model (Fornell and Larcker 1981, in Ghozali 2015; p. 74).

![Fig. 1. The cross loading factors](image)

Table 2. Average Variance Extracted (AVE)

<table>
<thead>
<tr>
<th>Capability to Reconfigure</th>
<th>Samples</th>
<th>Mean</th>
<th>Deviation Standard</th>
<th>T Statistic</th>
<th>P Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Leadership Capability</td>
<td>0.647</td>
<td>0.720</td>
<td>0.049</td>
<td>14.758</td>
<td>0.000</td>
</tr>
<tr>
<td>Digital Technology Capability</td>
<td>0.704</td>
<td>0.705</td>
<td>0.042</td>
<td>16.754</td>
<td>0.000</td>
</tr>
<tr>
<td>Engaging Audience</td>
<td>0.728</td>
<td>0.726</td>
<td>0.044</td>
<td>16.443</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>0.526</td>
<td>0.526</td>
<td>0.047</td>
<td>11.168</td>
<td>0.000</td>
</tr>
</tbody>
</table>
The AVE value for all variables is > 0.5, namely CTR 0.647; DMC 0.704; DLC 0.722; DTC 0.728; SDT 0.600; EA 0.526

Reliability

There are 2 ways that can be used to measure construct reliability with reflective indicators, namely by using Cronbach's Alpha and Composite Reliability. So when the composite reliability and Cronbach's alpha values are above 0.7, the construct is called reliable [23], and the results are as follows:

<table>
<thead>
<tr>
<th></th>
<th>Sample</th>
<th>Average</th>
<th>Deviation standard</th>
<th>T Statistic</th>
<th>P Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capability to Reconfigure</td>
<td>0.901</td>
<td>0.896</td>
<td>0.031</td>
<td>28.902</td>
<td>0.000</td>
</tr>
<tr>
<td>Digital Leadership Capability</td>
<td>0.959</td>
<td>0.958</td>
<td>0.010</td>
<td>93.859</td>
<td>0.000</td>
</tr>
<tr>
<td>Digital Market Capability</td>
<td>0.955</td>
<td>0.955</td>
<td>0.009</td>
<td>107.179</td>
<td>0.000</td>
</tr>
<tr>
<td>Digital Technology Capability</td>
<td>0.955</td>
<td>0.954</td>
<td>0.010</td>
<td>95.560</td>
<td>0.000</td>
</tr>
<tr>
<td>Engaging Audience</td>
<td>0.924</td>
<td>0.922</td>
<td>0.014</td>
<td>64.596</td>
<td>0.000</td>
</tr>
<tr>
<td>Sustainable Digital Transformation</td>
<td>0.912</td>
<td>0.912</td>
<td>0.015</td>
<td>62.544</td>
<td>0.000</td>
</tr>
</tbody>
</table>

The CA value for all variables are > 0.7, namely CTR 0.901; DMC 0.955; DLC 0.959; DTC 0.955; SDT 0.912; EA 0.924

Structural Model (Inner Model)

<table>
<thead>
<tr>
<th></th>
<th>Sample</th>
<th>Average</th>
<th>Deviation Standard</th>
<th>T Statistic</th>
<th>P Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capability to Reconfigure -&gt;</td>
<td>0.828</td>
<td>0.824</td>
<td>0.044</td>
<td>18.758</td>
<td>0.000</td>
</tr>
<tr>
<td>Digital Leadership Capability</td>
<td>0.699</td>
<td>0.692</td>
<td>0.075</td>
<td>9.275</td>
<td>0.000</td>
</tr>
<tr>
<td>Capability to Reconfigure -&gt;</td>
<td>0.761</td>
<td>0.755</td>
<td>0.062</td>
<td>12.346</td>
<td>0.000</td>
</tr>
<tr>
<td>Digital Market Capability</td>
<td>0.031</td>
<td>0.034</td>
<td>0.138</td>
<td>0.222</td>
<td>0.824</td>
</tr>
<tr>
<td>Digital Leadership Capability -&gt; Sustainable Digital Transformation</td>
<td>0.007</td>
<td>-0.006</td>
<td>0.144</td>
<td>0.045</td>
<td>0.964</td>
</tr>
<tr>
<td>Digital Market Capability -&gt; Sustainable Digital Transformation</td>
<td>0.007</td>
<td>-0.006</td>
<td>0.144</td>
<td>0.045</td>
<td>0.964</td>
</tr>
</tbody>
</table>
The results showed that:

1. The significant effect is shown by Capability to Reconfigure on Digital Market Capability, with 9.275 being the T-Statistic value and 0.000 being the P-Values, so from these results it is known that the significance value is less than 0.05. Furthermore, related to the coefficient of the effect of Capability to Reconfigure on Digital Market Capability, which is 0.699, this means that it has a positive influence.

2. A significant effect is shown by Capability to Reconfigure on Digital Leadership Capability, where 18.758 is the T-Statistic value and the P-Values is 0.000, this means that the significance value is smaller than 0.05. Furthermore, 0.828 is the coefficient of influence of Capability to Reconfigure on Digital Leadership Capability, so it can be interpreted that a positive influence is shown by this.

3. Capability to Reconfigure has a significant effect on Digital Technology Capability with a T-Statistic value of 12.346 and a P-Values of 0.000 so that the significance value is less than 0.05. The coefficient of the effect of Capability to Reconfigure on Digital Technology Capabilities is 0.761, which means that there is a positive influence.

4. Does not show the effect of Digital Market Capability on Sustainable Digital Transformation, where the T-Statistic value is 0.045 and the P-Values is 0.964, so the significance value is more than 0.05

5. Does not show a significant effect shown by Digital Leadership Capability on Sustainable Digital Transformation, this is because the T-Statistic values 0.222 and 0.824 are P-Values, so that means the significance value is greater than 0.05.

6. The significant effect is shown by Digital Technology Capability on Sustainable Digital Transformation, where the T-Statistic values of 4.940 and 0.000 are P-Values, so the significance value is less than 0.05. In addition to the coefficient of influence of Digital Technology Capability on Sustainable Digital Transformation is 0.792, this means that the influence is positive.

7. A significant effect is shown by Sustainable Digital Transformation on the Engaging Audience, where 7.847 is the T-Statistic value, and the P-Values is 0.000, so the significance value is less than 0.05. The coefficient of the effect of Sustainable Digital Transformation on the Engaging Audience is 0.607, which means that there is a positive effect.

### Table 5. R square

<table>
<thead>
<tr>
<th></th>
<th>Sample</th>
<th>Average</th>
<th>Deviation Standard</th>
<th>T Statistic</th>
<th>P Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Leadership Capability</td>
<td>0.686</td>
<td>0.681</td>
<td>0.071</td>
<td>9.612</td>
<td>0.000</td>
</tr>
<tr>
<td>Digital Market Capability</td>
<td>0.489</td>
<td>0.485</td>
<td>0.101</td>
<td>4.852</td>
<td>0.000</td>
</tr>
</tbody>
</table>
The effect is shown by the Reconfigure capability variable on the digital market capability, which is 0.489 or 48.9%. Furthermore, the effect of the reconfiguration capability variable on digital leadership ability is also shown, where the value is 0.686 or 68.6%. In addition, the effect is also shown on the ability of digital technology, which is 0.579 or 57.9%.

The effect of the variable reconfiguration capability, digital market capability, digital leadership capability, and digital technology capability on sustainable digital transformation is 0.681 or 68.1%.

The effect is also shown by the variables of reconfiguration capability, digital market capability, digital leadership capability, digital technology capability, and sustainable digital transformation on audience strategy, which is 0.369 or 36.9%.

### Simultaneous Test

The influence shown by the Capability to Reconfigure, Digital Market Capability, Digital Leadership Capability, and Digital Technology Capability variables on Sustainable Digital Transformation is 0.681 or 68.1%. And it can be calculated using the /f statistic with the following formula.

\[
F = \frac{R^2}{(k-1)} \frac{1}{1-R^2/(n-k)}
\]

At (df1 = 4-1; df2 = 95-4) alpha 0.05, the F table value obtained is 2.705. This means that the value of \( f > f \) table, so in conclusion the simultaneous effect is shown by Sustainable Digital Transformation on the variables of Capability to Reconfigure, Digital Market Capability, Digital Leadership Capability, and Digital Technology Capability.

The effect shown by the Capability to Reconfigure, Digital Market Capability, Digital Leadership Capability, Digital Technology Capability, and Sustainable Digital Transformation variables on the audience engagement strategy is 0.369 or 36.9%.

This calculation can be done using the statistical \( /f \) calculation as formulated below.

\[
R^2 = 0.369 (Y2)
\]
2.473 is the table F value at (df1 = 5 - 1; df2 = 95 - 5) alpha 0.05. So the conclusion is the value of f > f table, it means that simultaneous influence is shown by the audience engagement strategy on the variables of Capability to Reconfigure, Digital Market Capability, Digital Leadership Capability, Digital Technology Capability, and Sustainable Digital Transformation.

**Validating the Overall Structural Model with Goodness of Fit Index**

Validation of the combined performance from the measurement model (outer model) and structural model (inner model) is the goal of the Goodness of Fit Index (GoF) Test, and based on these calculations, the following results are obtained:

\[
GoF = \sqrt{AVE \times R^2}
\]

GoF = \sqrt{0.655 \times 0.561}  
GoF = \sqrt{0.367}  
GoF = 0.606  
Keterangan:  
AVE = (0.647+0.722+0.704+0.728+0.526+0.600)/6 = 0.655  
R square = (0.686+0.489+0.579+0.369+0.681)/5 = 0.561

This study shows the results if 0.606 is Goodness of Fit Index (GoF) value. So, the conclusion is that the overall performance of the combined measurement model (outer model) and structural model (inner model) is good, it is because Goodness of Fit Index (GoF) value is more than 0.23.

**Predictive Relevance (Q^2) test**

The purpose of conducting predictive relevance (Q2) test is to validate the model. The results of the calculation of Q2 are as follows:

\[
Q2 = 1 - (1 - R1^2) (1 - R_i^2)
\]

Q2 = 1 - (1 - 0.686) (1 - 0.489) (1 - 0.579) (1 - 0.369) (1 - 0.681)  
Q2 = 1 - (0.314) (0.511) (0.421) (0.631) (0.319)  
Q2 = 1 - 0.014  
Q2 = 0.986

A value of 0.986 indicates a relevance predictive value (Q2), then the endogenous latent variable in this study has a relevance predictive value (Q2) greater than 0 (zero) so that the exogenous latent
variable is suitable as an explanatory variable capable of predicting endogenous variables. In other words, this model has good predictive relevance.

5 Discussion

The results of this study state that a strong influence is shown by the continuous digital transformation variable on audience engagement, it is because the T-statistics value obtained is 7.847 > T-table. While there is no effect shown by leadership capability on sustainable digital transformation, where the T-statistic score is 0.222 (below the T-table). Based on the opinion of experts, it is time for companies to start their digital transformation journey, this can be through digital technology [16]. This is because, there is already a lot of pressure coming from customers, employees and even competitors to immediately start or accelerate their digital transformation. When an opportunity from a new technology can be exploited, the digital transformation is said to be successful. Factors that influence it include past experiences, several digital transformation initiatives centered on customer experience, operational processes, and business models.

A clear vision of what the company wants to achieve is the basis for designing the customer experience. This is because the audience has an expectation that a product must match the specific needs of the customer, including the products, services and information presented [18]. Customers usually want the exact same thing they saw and used on what platform they were using at the time. So that when the touch points owned by the company are increasing, the interactions that occur are also increasingly complex with different channels and also the details of the needs to be understood.

The combination of people, processes and technology will be involved in digital operations, which is a unique way of overthrowing competitors. Real time data is needed when digital transformation is being carried out. It is because of very fast motion shown by the competitive landscape. So, when we can’t follow it, there will be many barriers to entry that are protected and will collapse later. Given the global nature of competition, companies must rethink customer experience and internal operations, which will help in the discovery of new business models.

Radical changes in what to sell, how to sell, or how to make money need to be involved when finding new business models [24]. Another thing to be prepared for when finding a new model is mapping of industry competitors and reconfiguring the value chain that offers a competitive advantage over competitors. The steps include how to offer superior value to customers, rethinking how to benefit from these offers, then about using digital technology to help customers experience these offerings smarter, cheaper and faster. Another thing that is no less important is the task of business leaders in designing, testing, and implementing new business models. All of the things done above are efforts related to strategic activities. Furthermore, vision, leadership, and governance are urgently needed in the implementation of the new business model.

6 Conclusion

Improvement, expansion and redefinition of traditional products/services through digital content can be assisted by continuous digital transformation, which serves to strengthen the value proposition offered to customers. This digital revolution has had an impact on industries in
Indonesia, one of which is the print media industry, where the power of mobility, social media, and changing customer expectations affect it. Therefore, efforts to enter the industry in consumer service need to be carried out by the print media industry, this can be done by creating digital content or digitizing products/services. This can be started by offering superior value to customers, while also having to think about what offers can generate profits. Another thing that is no less important is related to what benefits customers will get through this digital technology, and the extent to which customers feel this offering is smarter, cheaper and faster.

So from the following study, it can be concluded that if they want to become a dominant player in the future, the print media industry must be able to make improvements in the production of digital products. It can be done by responding to digital disruption through changing variables, adapting and expanding audience engagement strategies, besides that it can also be done by carrying out continuous digital transformation, digital market capabilities, capabilities for digital leadership and the capability to reconfigure existing resources/assets. sustainable development. So that the allocation of resources must be done, this is due to the development of capabilities in entering new markets and networks in digital products in an industry. The next thing that must also be studied is related to the process of creating digital products, it includes the suitability of existing values in encouraging the reconfiguration of their capabilities, audits related to digital capabilities that have been carried out on the print media industry, and identification of weaknesses that occur during digital product development. When these steps are taken, retrieving the right information from customers will greatly help the print media industry to increase business on this service.

This research is the first type of research, where the discussion in this study includes research implications related to dynamic capability theory by identifying, operating, and measuring the main variables. Suggestions for further research, exploration of other news media sectors needs to be done, for example on radio or television. Furthermore, related to the results of this study, the author basically focuses on print media, but based on the findings, the authors find that many relevant issues are used in community radio and local television news providers. One of them is related to the service function that can provide a plurality of news supply to the public. Therefore, this research is very important because it serves to compare and contrast their position in the print media, besides that it is also very interesting to conduct a more detailed comparative study in an effort to reveal the main differences and trends.

References


W. Bennis, More Praise for on Becoming a Leader. 2009.


Utilization of Digital Technology in Managing Fabric Waste into Garments

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Abstract. The textile industry is a significant contributor to foreign exchange. This can be seen from the contribution of this industry which is 10.52\% of total exports national (Ministry of Industry, 2019). As much as 2\% of total waste in Indonesia comes from cloth. The fabric waste can be processed into products of economic value. Various kinds of fabric waste products, including bags, blankets, sandals, table mats, and doormats, can compete with products from major industries. The study wants to address fabric waste as a commercialized garment. This research aims to support the 2020 Waste Free Indonesia program, especially fabric waste, in this case used clothes, by building waste management applications from a small scale to a national scale. The research was conducted by interviews, focus group discussions, and field observations of related parties, both in the central, regional, and civil society governments and industries related to the issue of waste in Indonesia. Field studies carried out in the locations of the waste level, which is the highest compared to other big cities on the island of Java. The results show mobile application for fabric waste management. The study results are expected to be a medium for the community and waste management parties, both government and private, to manage waste in the surrounding environment. Thus, this research is an innovation that provides solutions to reduce fabric waste and increase the profit of fabric waste managers.

Keywords: Waste of fabrics, green consumer, non-woven, digital content, mobile application.

1 Introduction

The textile and textile product industry is one of the mainstay sectors for Indonesia because this industry makes a large contribution to the national economy. The textile industry is a significant contributor to foreign exchange. This can be seen from the contribution of this industry which is 10.52\% of the total national exports. According to Indonesian Ministry of Industry, the textile and clothing industry achieved the highest growth during 2019 at 18.98 percent [1].
Based on the Roadmap for Making Indonesia 4.0, the textile industry is one of five manufacturing sectors with priority development in preparation for the industrial era 4.0. The big aspiration that Indonesia will realize is to make textile and apparel producers from the national scope into the top five in the world by 2030. Currently, the domestic industry needs support for raw material supply, investment, and development of market access.

In the textile industry, the garment manufacturing sector has a major concern with fabric waste. This problem requires a solution to overcome the obstacles faced by the textile industry. The main goal that will be achieved in the future is that every factory in Indonesia can reach a stage where the disposal of fabric waste is below one percent. According to Law Number 18 of 2008 concerning Waste Management, waste has become a national problem. The Indonesian government has also created a road map for a Clean Trash Indonesia 2025. Thus, waste needs to be managed comprehensively and integrated from upstream to downstream.

Waste management also needs to be supported by adequate facilities and infrastructure [2]. Waste that still has value should be treated and must be used as raw material or other valuable materials. Processing waste and using waste as secondary raw materials in the production process saves raw materials, energy and can reduce environmental pollution [3].

From the background above, the problem formulations to be examined are: (a) what is the community's need for proper fabric waste management? (b) how is an appropriate information system for fabric waste management able to provide economic value for society? (c) how to develop mobile-based applications and garment products from textile materials recycling non-woven for society?

The urgency of this study is developing a mobile-based application for fabric waste management and supporting the Life Environment of Ministry program “Clean-from-Waste Indonesia 2025”.

2 Literature Review

Studies on textile recycling can be categorized as fabric waste divided into two categories, namely pre-consumption and post-consumption waste [4]. Research related to fabric waste management in Indonesia has been conducted into an economical and commercialized product [5], [6].

Various methods of fabric waste reduction conducted by the fashion industry, including Zero-Waste [7]. In addition, various other studies have been conducted related to the management of fabric waste involving consumers [8] as the main subject [9].

A recent study of the textile industry's most recent waste management model has been developed by Rapsikevičienė, Gurauskienė & Jučienė [10]. The focus of the waste management model for the textile industry is oriented towards preventive solutions. Other researchers also continued to study the risks and management of textile waste at a number of multinational companies [11].

The implementation of waste management system has been widely done in various countries in the world. Implementation of the internet of things (IoT) based waste management system in Malaysia improves city management and provides public services through smart city applications [12]. The study developed a "Core Smart City" app called Device Agnostic Solution [12].

Other research has also used IoT in developing intelligent waste management systems in India [13]. The study Lee & Wu [14] showed that the study develops an approach by combining RFID technology and mobile applications for waste management and can raise public awareness about the importance of sorting waste for recycling and minimizing waste. The study proposes
to develop a mobile app to motivate users to record waste disposal frequency and provide incentives for users to reduce waste and sort out recycled materials [14].

The development of cloud computing also offers automation capabilities through "cyberphysical" systems that make new changes in the waste management process [15]. The previous research [15] has developed a solution called "cloud-based smart waste management (Cloud SWAM)". It discussed solutions with special containers for each type of waste (organic, plastic, bottle, and metal) equipped with sensors. It constantly monitors and updates their status to the cloud, where stakeholders connect to receive information relevant to their interests. The system acted not only in waste management but also in the best collection routes, tracing the more economical lines within the metropol. The solution uses information collected by language-related waste management systems that use genetic algorithms that assist in the selection of suitable land for landfill construction [15].

There are 3 types of waste: organic waste, recyclable waste, and industrial waste [15]. Research and implementation of intelligent waste management systems has been conducted in various developing countries, including Malaysia [12], Hongkong [14], Sri Langka [16], and Nigeria [17].

Mobile communication technology includes various types of technologies such as GSM, GPRS, wireless LAN, satellite communication, and other devices, such as smartphones, Global Positioning System (GPS), Bluetooth, and so on [18]. Some system design approaches that can be developed [18] are Dustcard Tracking/Fleet Management, Cellular Tracking System, RFID Tracking System, GPS Tracking System, Route Designing, Communication, Staff Checking, Bin Tracking, and Weight Calculation, Real Time Central/Control Office.

3. Methodology and Data Analysis

In collecting data, researchers conducted interviews, surveys, and Forum Group Discussion (FGD). Interviews were conducted with the management of a well-known textile company in Indonesia. This activity is carried out to gather information about the current process of fabric waste management. The FGD conducted with company managers and collectors as the parties receiving and collecting fabric waste.

The system is equipped with a special software development method for the Software Development Life Cycle (SDLC) in the development process. It is modified with the Agile (Scrum) model. The states in SDLC are shown on Fig. 1.
Fig. 1. Software Development Life Cycle [19]

The development research method design used follows the stages and paths adopted from the Scrum Development Model adopted from Kroenke and Boyle (2017) shown in Fig. 2.

The questionnaire was designed to explore the perceptions of consumers and fabric collectors as well as research partners, the textile company. The data that analyzed is regarding to design the model for managing fabric waste into green products or garment products that are economically valuable on a mobile basis. The observations and surveys conducted on the waste collectors and consumers who use a mobile-based digital content marketing system application after the initial implementation stage.

The final output targeted in this study is to produce a smart mobile-based application in the fabric waste management system. The target to be achieved in this research is a green product in the form of a garment product made from recycled non-woven textiles and digital content in the form of digital marketing content in the form of marketing applications for online shopping activities, online marketing, and education to the public online about green products. The implementation of this research activity will focus on the Greater Jakarta and Bandung areas, where the level of consumption of clothing products is quite high in these regions.

This research is expected to contribute to the field of environmental management science and the concept of appropriate fabric waste management based on technology. Thus, this research is a new innovation that reduces fabric waste and increases profit for clothing manufacturers.

4. Research Result and Discussion
This research is a prototype experimental research that focuses on designing, creating, and testing mobile-based digital media content marketing at the textile company. The application to be developed contained information on managing waste into green products, which the knowledge center will use for the general public. The application is a mobile-based digital content marketing system that will be used by the textile company, fabric collectors, and consumers who are part of the fabric waste management ecosystem.

The research and development of this system is carried out at a modest spinning factory on the outskirts located in Indonesia, West Java. The company is expanding its business scope to become premium non-woven products. The textile industry, which has grown rapidly for decades, has left textile waste piles in local landfills and landfills. In addition, this study also collaborates with some fabric waste collectors in West Java.
The products produced in this study are green products in the form of garment products ready to be commercialized from non-woven recycled textile materials. The following production process of the green product can be seen in Fig. 3.

Household is a community that donates wearable clothing to fabric garbage collectors. Where this wearable clothing will be recycled into new clothes with the concept of green products ready to be commercialized again so that people can buy new clothes. Garment company is a company that has experience producing textile materials from non-woven materials. The production process of the green product will be conducted in a garment factory in collaboration with experts and researchers in clinical trials of the product's feasibility and commercialization test.

The final product of this production process and garment products ready to be commercialized will be produced digital content in the form of digital marketing content in the form of marketing applications for online shopping activities, online marketing, and education to the public online this green product.

This recycled garment product has consumers with segmentation as follows:

Geographic: Consumer segmentation of non-woven garment products is based on geography can reach industrial areas outside the area that garment companies have not reached so far and consumer types other than the garment industry and household consumers.

Demographics: Segmentation of consumers by demographic is consumers with upper middle income where a portion of the income is used to buy fashion products.

Psychographic and Consumer Purchasing Behaviour: Consumer segmentation based on psychographics and purchasing behaviour is a consumer of society who has a lifestyle in selecting fashion products and fashion product purchasing behaviour is greater than the need so that there is an increase in waste of unused clothing.

Consumers do not yet have awareness about the concept of green consumerism behaviour where this is a behaviour that applies the concept of environmentally friendly in consumer
consumption activities [20]. So that by using digital media developed, consumers can more easily get information to behave green consumerism.

The selection of target consumers for a company aims to choose 1 (one) or more consumer segmentation characteristics that the company can serve according to the company's resources [21]. The consumers' segmentation of non-woven garment products is geographically based are consumers in the greater Jakarta and Bandung area, which does not yet have green consumerism behavior in purchasing fashion products to become the target of consumer education and the target of selling the company's green product.

The consumers of these products are the buyers of recycled non-woven products consisting of household consumers and business consumers. Business consumers who are small and medium enterprises and household consumers buy non-woven products. The target consumer of the product is shown in Fig. 4.

![Fig. 4. Consumer of the Product](image)

5. Implication and Suggestion for Future Research

A study of the business-to-business phenomenon conducted by Holliman & Rowley (2014) reflects the role of digital content in marketing [22]. As part of disseminating waste management information, the technology that can be used is to create a digital content marketing system. This activity can help the industry to market products produced from fabric waste. In addition, this digital content is considered to increase consumer brand awareness of garment products that are economical and environmentally friendly.

References


Challenges Faced in Creating Local Innovation: An Integrated Model of Quadruple Helix for Social Entrepreneurship

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Abstract. The local innovation is one of the determinants of success in preparing society to face today's competition. One solution that can answer these challenges is to increase the role of social entrepreneurship. The purpose of this study is to develop factors that can be considered by social entrepreneurship in creating local-based innovation models that can have a positive impact on improving people's lives. This research used a qualitative approach based on the needs of a concept or phenomenon further. This Research used in-depth discussion of the concept by conducting semi-structured interviews and observations. Interview data were obtained from seven participants who were directly involved in local innovation-based entrepreneurial activities. The result of this research was that in implementing the concept of Socio Entrepreneurship, the role of government, universities, companies, or foundations was needed as well as the role of the community itself. This study also contributed that in implementing the social entrepreneur should consider the quadruple helix model.

Keywords: Social Entrepreneurship, Local Innovation, Quadruple Helix, Sustainable Development

1. Introduction

Society is increasingly ready to face various kinds of changes because of increasingly intense competition. To be able to survive and succeed in facing competition, an innovation-based strategy is needed. Innovations that can be applied in empowering communities are based on local [1]–[6]. However, creating locally based innovation is not easy because local-based innovation requires the roles of various parties. So that in creating locally based innovations it is very appropriate to apply the quadruple helix model. The quadruple helix model is a model by integrating the various roles of local government, universities, communities, and local business people together [7]–[9]. The local-based innovation can contribute to society in doing business and entrepreneurship, especially social-based entrepreneurship [7], [9]–[12]. Social entrepreneurship has become a key area of interest in the entrepreneurship discourse. Social entrepreneurship is an approach based on complex social needs and social value creation [13]–[20]. However, there were still limited study about social entrepreneurship topic, although
this topic has received better attention from academics and practitioners [15], [18], [21]–[24]. For the innovative business idea based on social approach, social entrepreneurial has opportunity recognition and exploitation as a core requirement for competitive advantage. The business innovation that can be implemented regarding the quadruple helix model which is based locally innovation. The entrepreneurial implementation needs social and economics approach and results. Some literature mainly agree that the social impact become a core goal of social entrepreneurial activities. The various definitions about social entrepreneurship are the important thing about the social and economics approach for the successful about social entrepreneurship. The role of social entrepreneurs can contribute to improving performance and community empowerment by encouraging the creation of local innovations that provide value added to the community.

As Catalysts of Creating Local Innovation, Social entrepreneur correlated with the quadruple helix model is in cooperation with the various parties involved in cooperation in achieving the SDGs. SDGs indicators were correlated to the Human Development Index. The results of these studies are that empowerment can be successful with the efficiency of local resources, such as people, goods, maximized the process of training or awareness of society. Community care is a major influence in the maintaining of the system for sustainable empowerment. Community empowerment is closely related to the triple helix model of involving the government, industry, and the role of universities [25], [26]. However, the empowerment with the referring to the concept of the triple helix is lacking if there is no community participation. So the model which is more appropriate in community development is used a quadruple helix, with involving the community in empowering communities so the innovation can be achieved [1], [27]–[30]. This study, in addition to referring to the quadruple helix, is also considered the role of non-governmental organizations (NGOs) as non-profit organizations in the implementation of community development programs. The NGO models fill the gap between the interaction and build opportunities for each connection [31].

Based on that phenomenon, we need a model for Catalysts of Creating Local Innovation with increasing the role of social entrepreneurs. Based on the research background, the formulation of the problem is how the model of The Creating Local Innovation in Quadruple Helix Model (CLIQ) to improve social entrepreneurship based on goals and targets of the SDGs, to improve the standard of living. So, the purpose of the study was to determine the model strategy based CLIQ can improve the standard of living, to increasing the role of the social entrepreneur.

2. Literature review
Social entrepreneurship
Social entrepreneurship is a concept, which has been consolidated in recent decades in various parties like government, social observer, international organizations which concerned with economic and social issues. [8], [9]. The nature of entrepreneurship has changed from simple perception to a more modern and complex perception. Social entrepreneurship is the creation of new ventures with social goals. The main point about social entrepreneurship is how the social needs and community can collaborate with the social sector not the commercial sector [6], [32]. Recently several scholars have realized the importance of social entrepreneurship as a driver of social values, and carried out research in the field [10]. It is emerged as a new label to describe community work, organizational and public organizations, as well as companies working for social causes for profit [7], [11], [18]. This does not mean that social entrepreneurial ventures occur only in a non-profit context. Not all a non-profit is socially entrepreneurial, just as not all
profitable businesses are entrepreneurial. Social entrepreneurship can catalyze the process transformation for social community with integrating social economics needs. The social and economic needs is to ensure the sustainable entrepreneurship which an emphasis on the search for solution to deep rooted which the social problems that cause human suffering [33].

The Creating Local Innovation in Quadruple Helix Model (CLIQ)

The CLIQ is a concept in creating a locally based on innovation by referring to the model quadruple helix. The Quadruple Helix model is an improvement of the triple helix. Quadruple helix model is a development model from triple helix model [1], [24], [27], [34], [35]. Quadruple helix is a model which can collaborate and result a synergy with four parties. The four parties are government, business, universities, society, or community. The four parties must be integrated as a drivers for improve the innovation and creativity business [7], [36], [37] It is only done between the three parties, namely the government, academia, and business. The quadruple helix concept is a very appropriate model for increasing community empowerment in local-based innovation. where the community will work together with the government, business, and universities in creating local-based innovations.

3. Methodology and Data Analysis

This study used a qualitative approach based on the needs of a concept or phenomenon further about social entrepreneurship. The discussion about social entrepreneurship is still limited. The concept of creating local innovation by considering various parties, namely the quadruple helix, is still limited discussing. So that it takes an in-depth discussion of the concept by conducting semi structured interviews and observations. The study was a descriptive study in which researchers will describe the study by analyzing phenomenon, events, attitudes, thoughts of people individually, either obtained from the interview data, and documentation. Interview data were obtained from seven participants who were directly involved in local innovation-based entrepreneurial activities in Malang Community Boarding. Interviews were conducted with community leaders in the area who are directly involved in the creation of local innovations and the main actors of the local business. For reason for anonymity the community leader and social entrepreneur identified as C1, social entrepreneur identified as L1, L2, L3, L4, L5, L6.

From the results of the interview, a transcription process was carried out to get a comprehensive view of local innovation-based social entrepreneurship. After being transcribed manually, the transcription was then summarized and sent to the selected participants for cross-checking and data validation. The selected participant for cross-checking was a community leader. These follow-up checks from the participant ensure that the subjectivity of the researcher did not dominate the interpretations of the data [38]. In addition, the validation process was also carried out by observing a community leader to get a more comprehensive opinion of social entrepreneurship. A thematic approach to the organization and interpretation of data was employed in which the data were arranged under meaningful interpretation. This research was organized and analyzed inductively by looking for key phrases, terms, and practices within the data. These themes were further analyzed and matched with the existing themes identified from the literature review. Based on the thematic approach, we get the model-based on the social entrepreneurship which is integrated with the creating local innovation in the quadruple helix model, in accordance with the existing reality. The model would also be linked to the SDGs.
4. Research Result and Discussion

The summary of research results is depicted in Table 1. The finding from this study suggests that there are 7 main strategies to creating local innovation for successful social entrepreneurship. However, some barriers exist in implementing those strategies.

Table 1. The main strategies to creating local innovation

<table>
<thead>
<tr>
<th>No</th>
<th>Participants</th>
<th>C1</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
<th>L5</th>
<th>L6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Increasing income with innovation of local products</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Gain commitment from local government</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>Support from community</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>Collaboration with other business</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>5</td>
<td>Cooperation with university</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>6</td>
<td>Support to promotion all local innovation products</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>7</td>
<td>Support to creation local innovative product with effective operations and better quality</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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</tr>
</tbody>
</table>

From the opinions of the participants, there is a need for integration between various parties in order to produce better local-based innovations. As seen in Figure 1.

Figure 1: The support Factors for successful social entrepreneurship
In Figure 1, local governments, communities, university, businesses, in an integrated manner can improve the performance of social entrepreneurs in creating local-based innovations. So that entrepreneurs can support the achievement of the SDGs program.

Based on the research results, the model-based implementation of social entrepreneurship concerning the Sustainable Development Goals by using the creating local innovation in the quadruple helix model. From the model, the quadruple helix model is very appropriate, if it is used to increase local-based innovation based on the concept of social entrepreneurship. The social entrepreneurship is related to how to empower people to create innovation. This model is based on the triple helix in empowering the community. The triple helix model in empowering people felt less precise because it does not involve the wider community in creating innovation. So that model is less appropriate when applied for the concept of social entrepreneurship based on empowering communities. Community empowerment is one of the main goals of improving themselves in a developing country. The empowerment can always continually evolve through a good relationship between the parties to improve innovation in social entrepreneurship. The parties must be strongly connected, to become a solid strength and support each other. So it is appropriate if the model of social entrepreneurship refers to the principles of a quadruple helix [9], [28], [29], [35].

In the quadruple helix models, it is seen that social entrepreneurship is the axis for driving the role of government, businesses, universities, and society. So, the role of the social entrepreneur is critical for collaboration among each of these roles in empowering the community. So, it went on so that all of society can work together to build a village for the creation of a healthy environment, advanced, prosperous so that the necessary process of integration with the various parties that could contribute to the success of social entrepreneurship. The role of universities, government, business, and society must work in synergy to the success of such empowerment. The role of social entrepreneurs in empowering society can engage with the university. The university has built that will be the coordinator in increasing the role of the social entrepreneur. University strengthens cooperation with the community development program which this program is currently implemented by a lot of university. The target is carried out together with stakeholders including local government, institutions, and the public in the broad sense. The community development program becomes one of the cohesion programs tri dharma university activities in support of human resource development, to achieve the SDGs program which is currently underway. The role of local government in supporting social entrepreneur plays a very big role. The government already has regulation about the empowerment of rural communities and villages. Local government support for the boarding of the people is also quite large. The role of government today is confined to policymakers. The role of government is quite a bit in helping communities improve innovation. During this empowerment, lack of support or funding from a local municipality for the development of the empowerment of the community.

So, the role of the greatest success is there on citizen empowerment. Residents are very enthusiastic about building a better region. To see the potential for community empowerment and the people who are already independent. Although people in the community boarding already independent, still need the support of local authorities in further improving the independence of citizens. Some businesses have empowerment programs. The NGO also contribute with community empowerment program. So, the community can get a lot of benefits to increase the business. Social entrepreneurship has a major program is to alleviate poverty and public welfare ”. In the economic field, the community managed to work with. Those who
belong to the rich are willing to help the poor, in a variety of ways. For example, those who have the capital are invited to develop goats as share cropping, giving venture capital to make the blacksmith craft successfully absorbed tens of people, making the pool, producing seeds, and others.

This study identification is based on sustainable development goals (SDGs) and was associated with the study of literature, observation, and interview-based on social entrepreneurship [39]–[43]. This is consistent with the first objective of the SDGs. This is evident from the various activities held by the people for the prosperity of the community schools. If the first goal in the community boarding in Malang will be achieved, then the other destination is relatively easy to achieve. To achieve the target of SDGs, the necessary role of the leader to motivate and enhance community development activities. The role of the leader in the community boarding in Malang, very large in motivating people around. This is evident from the various activities organized by the community boarding in Malang. Activity from start to children up to the elderly have well-coordinated.

In achieving the SDGs another goal, namely, to end hunger, various productive activities were carried out at the school of the people, to try every household income with various businesses. This can be seen from various economic activities of citizens, among others: bricklaying, carpentry tools manufacture and agriculture, livestock operations catfish, fish farming. So, from a wide range of economic activities at the school proved that the community boarding in Malang has been trying to achieve all SDGs that promote sustainable economic development, open and sustainable, jobs are intact and productive and decent work for all. While on the destination SDGs relate to building durable infrastructure promotes sustainable industrialization and open and encourages innovation, it takes the role of government. The government has been instrumental in building the infrastructure. So that the quadruple helix models with SDGs have enormous relevance. It is mentioned at the 16th destination SDGs that is promoting a peaceful society and is open to development that is sustainable, providing access to justice for everyone and building effective institutions, responsible, and open at all levels. So, the role of government, universities, businesses, and the community should be based on the destination SDGs. Various activities have also been integrating the people boarding the roles of various parties by the proportions. So, the purpose of SDGs in the seventeenth point can be realized.

4. Implication and Suggestion for Future Research
The challenge in this research is how the integration of various parties in the quadruple helix model can create local-based innovations to gain a competitive advantage, especially in the disruptive era. The other challenge is how the seventeenth SDGs to be able to work well then, the needs for the roles of various parties ranging from governments, universities, and businesses also society at large, according to the model quadruplex helix. At the destination, SDGs also clearly mentioned the various targets that must be met in achieving the objectives of sustainable development. These targets can not be met without a commitment, the government roles, and together with various parties. the community boarding in Malang is committed to fulfilling sustainable development goals (SDGs). The realization of the activities of the community boarding attempted to meet the target SDGs by involving the various parties under the model quadruplex helix. The activities carried out in the community boarding in Malang, activities for children up to the age that is no longer productive, highly innovative. The activities of community empowerment at the community boarding could take place, also because of the role
of leader of the boarding were able to feed that passion and motivate citizens in empowering the community, as well the role of universities in promoting the spirit of citizens to be more motivated for developing capabilities to better improve financial capabilities are also very large. So the purpose of sustainable development by considering the model quadruplex helix on the community boarding in Malang did well. So the community boarding in Malang either already well developed or undeveloped, you should start to consider how to integrate the roles of the various parties regarding the quadruplex models helix, so it hopes will bring innovative activities to empower communities. The community boarding in Malang either already well developed or undeveloped, have to think about how preparedness SDGs, with the help of various parties. For further research, you should consider how the role of media can creating local innovation especially in the disruptive era and SDGs achievement target. As we know, the development of media now is growing rapidly. So to integrate with the media, we can propose the Penta helix model for creating local innovation and to increase the role of social entrepreneurship.

References


The Power of The Effect Implementation of Information Technology and Organizational Culture in Detecting Fraud

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Abstract. This study aims to test whether the implementation of information technology and organizational culture can detect fraud in the management of School Operational Assistance funds. This research is very important for the success of government programs in improving the quality of human resources through quality education from primary to secondary levels. This study uses purposive sampling with a total sample of 200 schools from elementary, junior high, and high school levels. Primary data is used to ensure that information is obtained from sources directly related to the management and supervision of BOS funds. The unit of analysis in this study was the schools that were late in collecting BOS fund reports in Lampung Province. The data is processed by Partial Least Square (PLS). The results of the study show that information technology can reduce indications of fraudulent practices while the ability of organizational culture which is reflected through the commitment and integrity of the leadership plays a strong role in reducing indications of fraudulent practices.

Keywords: Fraud, information system, organizational culture

1. Introduction

The 1945 Constitution mandates the allocation of education funds to be 20% of the APBN. This provision has been implemented by the government by allocating a budget of 208.1 trillion in the 2020 State Budget. Based on this allocation, the Ministry of Education and Culture describes it into various expenditures, one of which is School Operational Assistance (BOS).¹ stated that the largest expenditure on the ministry of education for BOS was 4.66% in 2019 and in 2020 it increased to 10.69%, or around Rp. 54.32 Trillion.

The high allocation of BOS triggers fraud in the management process. Indonesia Corruption Watch (ICW) revealed that during 2005-2016 there were 425 corruption cases related to the education budget with state losses reaching Rp1.3 trillion and the bribe reaching Rp 55 billion [2]. The same condition also occurred in Lampung Province, namely the corruption of BOS funds of Rp. 1.76 billion, [3] and the deduction of BOS funds for SPM students totaling Rp. 78.5 million, [4].
Based on the phenomena in the field, this research is very important because research related to fraud in the management of BOS funds is still rare, especially in Lampung Province, besides that this research also aims to help the success of government programs in improving the quality of education.

Research Question
Is the implementation of information technology and organizational culture able to encourage the Fraud Diamond Model to detect fraud in the management of BOS funds?

2. Literature Review

Agency Theory
[5] explain the relationship between agent and principal. The principal as the agent responsible for managing BOS funds is often late in sending an accountability report to the ministry of education and culture as the principal. This delay may indicate fraud in its management.

Fraud (fraud)
Fraud (fraud) is dishonesty in the form of deliberate fraud or misstatement of material fact intentionally. Lying, deliberately telling untruths, and deceiving, obtaining unfair or unfair advantages from others [6]. Activities that fall within the definition of corporate fraud typically include theft, corruption, conspiracy, embezzlement, money laundering, bribery, and extortion [7]. Financial statement fraud is intentional or reckless behavior, with acts or omissions that results in materially misleading financial statements [8]. Related to fraud, Cressey (1950) introduced the fraud triangle, which is refined into a fraud diamond by [9] that fraud generally occurs because of pressure, opportunity, rationalization, and capability.

Information Technology
Information Technology is a system consisting of a collection of two or more physical or non-physical subsystems or components that interact and work together in harmony to process data to produce useful information for decision-makers [8]. In managing BOS funds, an integrated system is needed starting from planning, implementation, and reporting. The information system is also a suggestion that can suppress the occurrence of fraud in an organization, [10]. In this research, information technology is measured by indicators, [8] people who use the system; procedures and instructions used to collect, process, and store data; software used to process data; information technology infrastructure includes computers, peripheral devices, and communication network devices; internal controls and security measures that store AIS data.

Organizational Culture
Organizational culture is a habit that exists in organizations that have existed for a long time and are hereditary until now [11]. Organizational culture is the norms, values, assumptions, beliefs, habits that are made in an organization and approved by all members of the organization as a guide or reference in the organization in carrying out its activities both for employees and for the benefit of others [12]. Organizational culture consists of values and assumptions that are shared within an organization [13]. Organizational culture is one factor in the design of accounting information systems [8]. In this research organisation culture by indicator:
innovation and risk taking, results orientation, people orientation, team orientation, aggressiveness and stability.

Conceptual Framework
Based on the premise of the theory and previous research, the framework of this research is as follows:

![Research Framework Diagram]

**Fig. 1. Research Framework**

Hypothesis Development
Effect of Information Technology Implementation on Fraud
Information technology is a system that collects, records, stores, and processes data to produce information for decision-makers [8]. The use of accounting information systems will produce quality, fast, precise, accurate, transparent, and accountable information. The implementation of information technology is believed to be able to reduce fraudulent practices [14]. Based on this description, the hypothesis,

\[ H_1: \text{Implementation of Information technology can detect a decrease in fraud in the Diamond Model.} \]

The Influence of Organizational Culture on Fraud
[15], [12], and [16] found that good organizational culture practices can reduce the level of fraud, positive effect on fraud prevention. A good organizational culture in an agency can minimize the possibility of fraud. The better the organizational culture, the lower the level of fraud [12]. From the description above, a hypothesis can be formulated,

\[ H_2: \text{Organizational Culture can detect a decrease in fraud in the Diamond Model.} \]

3. **Research Methodology**
This study uses the dependent variable of information technology implementation and organizational culture to test the accuracy of the Diamond model in detecting fraud. The test is done by regression test using Partial Least Square.

The population in this study is schools from elementary to high school levels in Lampung Province, while the sample is schools that are late in sending BOS fund accountability reports. The sampling technique is stratified random sampling. To obtain information that reflects the actual conditions, the questionnaire in this study was addressed to the competent parties as observation units, i.e. treasurers, school committees, and teacher representatives.

4. Research Result and Discussion

Data processing in this study uses PLS so it does not require a normal data distribution. The test results have also met the criteria of validity and reliability so that they can be continued to test the hypothesis. Figure 2 shows the results of hypothesis testing:

The data in the figure shows that the results of the H1 test show a value of -0.324, this value is greater than the level of significant 0.05 so it can be concluded that H1 is not supported. although it is not significant however the direction of the negative coefficient indicates the implementation of information technology can reduce the possibility of fraud. The BOS fund information system has been designed to pay attention to the needs and conditions of the users of the system so that the system can be useful and able to provide accurate data and information. The level of accuracy of information is indicated by information that can be presented in real-time so that stakeholders can monitor the utilization and management of BOS funds for making decisions regarding the effectiveness of BOS funds.

The Indications of fraud in the management of BOS funds still occur with delays in sending accountability reports from the school. This condition shows that information technology as a tool cannot fully guarantee the success of a program because there is still a link between
elements of the technology user. When users have certain goals such as personal interests that indicate fraud, no matter how well the technology has been developed, it can produce less accurate information because the input data is not valid. This condition is caused by the absence of internal control in the form of verification of activities and financial evidence. Verification is very important to ensure that the correct activities have been carried out and the proof of transactions is by the expenses. The verification process must be carried out by a higher party i.e. the principal. Based on the data collected, it illustrates that there are still schools that only fulfill administration as a form of accountability without any validation and verification of activities. This condition resulted in the implementation of BOS funds being less optimal.

Test results $H_2$ showed a value of -332, which also indicates that a good organizational culture can reduce fraud, especially relating to the management of BOS funds. The positive values of organizational culture as norms that are believed to be true by all members of the organization in the school environment can suppress the tendency of fraudulent practices. The information obtained shows that there is still a pattern of managing BOS funds that is centered on the principal so that the decision-making process and accountability are not in accordance with the provisions set by the ministry of education and culture.

School committees as representatives of students’ parents and as part of the BOS fund management structure in some schools were not formed, or they were formed but were not effective. This condition results when an indication of fraud cannot be detected from the start and the use of boss funds cannot be in accordance with the allocation.

5. Implication and Suggestion for Future Research

The management of BOS funds must be carried out from upstream to downstream. Agency theory in this study has been implemented. The school manager as the party who is given the mandate (agency) has carried out government programs as the principal so that the goal of improving the quality of education can be realized, although there are still some schools that are less optimal. Implementation of information technology is a strong factor that can reduce indications of fraud in the management of BOS funds while organizational culture will be able to find indications of fraud when the leadership has high commitment and integrity. The next research can add internal control and management commitment variables.

References


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Abstract. Post Covid-19 recovery era has not been determined yet. However, it can be predicted by taking a look at the longest time of the neighborhood countries achieved that the pandemic has been already overdue. The purpose of this paper is to provide a comprehensive review of Post Covid-19 recovery. This review covers the economics' phenomena in purchasing power, business location, unemployment, competing risks in business development, challenges, and possible solutions on using system of dynamics. A significant number of literatures from index journals were cited accordingly. Previous studies had shown that the use of financial assistant, change offline business to online business, lower in renting price, and availability of the materials were important. Then, the reshaping business in accordance with the situation may be conducted as soon as possible provided that financial assistant available, offline business cum-online, renting-price tends to zero, and the material available on time.

Keywords: Reshaping, business, post Covid-19, recovery, comprehensive.

1 Introduction

Covid-19 pandemic is on a trajectory to cause catastrophic global upheaval with the potential to alter geopolitical and socio-economic norms [1],[19]. One of the greatest challenges of the coming decades is to make sure the sustainability of urban development [2]. The pandemic of Covid-19 has not been finished yet, but the planning to anticipate is required to be available. The pandemic was giving difficulties to many people especially in the healthy matters whether physically or mentally as the first problem. The second one is regarding the livelihood of the majority people. The purpose of this paper is to provide a comprehensive review of Post Covid-19 recovery. The good mental health of somebody was the one in the top level of his or her own capabilities, and be able to overcome the hectic life, but still producing some benefits to the society [3].

2 Literature Review

The reshaping business strategy in the vicinity of Post Covid-19 is a learning in the temporal changes in the association between two variables, without choosing a reference period [4]. As emphasized by [5], it was difficult to determine a relevant and robust baseline that would
simultaneously take account of the range of natural variation and reveal impacts related to disturbances. The growth of economic activities can be counted accordingly due to might be different in the pre-Covid-19 and in the post-Covid-19 era. This percentage of growth can be calculated by the formula \[ (1) \]

\[
\text{Relative growth} (\%) = \left( \frac{\text{Business at given time}}{\text{Business at initial time}} \right) \times 100
\]

Reshaping business with artificial intelligent is one of the most popular nowadays, because it can close the gap between ambition and action [7]. The online businesses today are running by artificial intelligent, such as Alibaba, Tokopedia, Shopee, Lazada etc. They are successful. The all of sudden of the decreasing economy and massive closures to stem the COVID-19 outbreak will have long-lasting consequences for the economy of any country. After businesses and households try to adapt to working style during the outbreak, then those consequences will finally reshape the future of business and work styles. Unfortunately, the outbreak also leads some complex policies challenges, in extent the news of business failures, which will leave some sectors with greater concentration and some firms with greater market power. It will also create persistent changes in the labor force, due to stark reductions in employment and labor force participation among already underrepresented demographics [8]. Companies are feeling the market and financial shock of the Covid-19 outbreak by factories’ shutdown, labor shortages to cash flow stress, and disruptions in the supply chain [9]. The agri-food sector comprises a dynamic societal-technical innovative ecosystem and is one of the largest manufacturing industries [10; 11]. The Covid-19 outbreak has created pressure in people’s daily lives, further threatening public health [12]. Many people may be feeling stressed due to the high stressed as reported by Chinese in the context of the current COVID-19 crisis [13]. System Dynamics Model (SDM) enabled to understand of the complexity and the impact of different interventions of Covid-19 in Kenya [14]. More than 5800 of the 4.6 million small businesses in the USA were surveyed between March, 28 and April, 4, 2020 by [15] during the Covid-19 pandemic, see Figure 1: It showed the results that the pandemic had already caused massived dislocation among small businesses just a few weeks after it onset and prior to the availability of government aid in which 43% of businesses had temporary closed, where nearly all of those closures were due to Covid-19.

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**Figure 1.** Summary of closure measures across regions [15]

This table reports from [15] breakdowns by regions. Totals include 12 observations with unknown region. Note that the Closed at time column includes both temporary
and permanent closures. The measure Expected to close by December comes from a question asking about the likelihood of being open in December, where answers were given on a five-point scale. Closure is coded as a binary indicator for those marking “Extremely Unlikely,” “Somewhat Unlikely,” or “Somewhat Likely” to be open in December. The ratios of current employment versus January employment are weighted by January employment.

![Figure 2. The Closure Summary measures by firm size [5]](image)

This Figure 2 reports breakdowns by firm size [15]. Totally, There are 103 firms in this sample with unknown employment as of January. Social isolation caused by the Covid-19 pandemic has drastically affected lifestyles, from sedentary behaviors to reduced physical activity, from disrupted sleep patterns to altered dietary habits[16].

3 Methodology and Data Analysis

We collected around 20 papers from index journal as our material to review the economic and social feedback before and at the Covid-19 outbreak. Afterwards, we took the point of views that seem to be the same intention. Later on, we propose to reshaping the business by the systems of dynamics. In this paper the purpose of our survey, we used the definition of artificial intelligence from the Oxford Dictionary: “AI is the theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.” However, AI is evolving rapidly, as is the understanding and definition of the term. In this paper we propose to model the business such as follows:

Steps to model and its implementation

A. Model Design

By applying simulation method of the Systems of Dynamics as follows:

a. Creating Causal Loop Diagram (CLD)
b. Creating Stock Flow Diagram (STD)
c. Verification and model validation
d. Creating Scenario

Modeling and simulation should be applied to model the reshaping strategy business in the
post-covid-19 era. This can be a model for poor citizen and unemployment caused by the pandemic. The poor citizen and unemployment caused by pandemic as the indicators for reshaping the business, and might be taking some another supporting-variable, hence, the simulation results can assist in the development to the expectation.

B. Causal Loop Diagram

The initial step in creating simulation of the systems of dynamics was to formulate the model in accordance with the condition of the business of the beforehand and afterwards the pandemic era. The main part in the concept creating of Causal Loop Diagram (CLD) was administering the identification followed by connecting among each variable which can affect the reshaping the business based on economic system that is running in the current situation and the term and condition of the smart economy. See Figure 3 as a Causal Loop Diagram.

Fig. 3. Causal Loop Diagram for Reshaping Business in the Post Covid-19. Modified from [18]

The Figure 3. shows the complex system of reshaping business strategy in the post covid-19 era. The prediction will be started on October 2021 onward following the ease of pupil and students return to their school in Indonesia. The poverty citizen caused by PPKM (Pemberlakuan Pembatasan Kegiatan Masyarakat/Ordinance of the Limited Communities Activities) will then be connected to Human Development Index, as well as Education and the purchasing power of the communities. The labor force that were losing their job during the pandemic will regain their job opportunities and remain be unemployed or start to have a new job. However, the employment will increase the taxation revenue, and leads to government budget accumulation. The reshaping business will increase the net export, and also lead to economic growth. The government budget will affect the fixed capital. If the Government budget rise then the fixed capital will also rise. The reshaping business strategy will also deal with domestic consumption. The small medium enterprise will affect the economic growth and the domestic consumption.
As seen on Figure 4 the domestic investment lookup and foreign investment lookup will contribute a lot to the investment. The investment rate was also contribute to the percentage of investment growth, and then created the job opportunities. Afterwards, the employment can be fulfilled by Labor force. The reshaping business strategy in the Covid-19 aftermath is to regain job opportunities for the workers or labor force, and also to regain the money lost during the pandemic. Who knows the opportunities to regain the economic activities return back in the near future.

4 Research Result and Discussion

The use of Artificial Intelligent may have significant effects on the workplace environment, the feeling of new value creation, and comparative advantage. Beyond the near term, how should companies prepare for these changes? In accordance with ISO 37120 as the smart city standard, the main economic indicator within smart city are the numbers of unemployment and the poverty [17]. To develop the smart economic city, it is required the smart economics simulation model. Thereby, it will be conducted to model those factors that affected the rate of unemployment and the numbers of poverty in the region which affected by pandemic. The method was applied for developing the smart economics model was system of dynamics, the system by consideration that the model was nonlinear and dynamics. The analysis was conducted by considering the macroeconomics factors. Later, that the structure and the behaviour or parameter were determined. From that scenario then conducted a comprehensive model for longer interval time. The scenario of the best structure which the most able to reduce the average percentage of the poor citizen was variable of customers. Then, the best parameter (behaviour) which the most able to reduce the average percentage of the poor citizen was optimistic.
5 Implication and Suggestion for Future Research

After we identified that the variable of customer and the optimistic behaviour were able to contribute to the reshaping the business strategy in the post Covid-19 era. The reshaping business strategy in the post-Covid-19 is an obligation for several business sectors. However, some traditionally markets no required to change their business strategy, due to some certain reasons. To regain the customers comeback to our business, like it or not the business by online and at the same time the offline business should have been administered simultaneously. But, then the new capital for preparing the online business should be available from freshmoney belong to the owner, not from borrowing from any institution that can be a big burden later on.

6 References


Services of Financial Technology (Fintech);  
Two Stage Least Square Method

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Abstract. Fintech is a company engaged in financial services that combined with technology. The use of innovative technology makes the financial industry more efficient and improves the quality of financial services. A startup is a financial services company that uses Fintech. Several factors affect services Fintech: from the consumer side of demand, namely the price of consumer goods as a credit loan application. From the company side, supply is influenced by income from creditors and the price of goods, the interest rate on credit is reflected by the margin which is a factor that affects the price of goods/services demand. Prices will affect services Fintech. From supply and demand side, it is suspected that there is a simultaneous price relationship between supply and demand for services Fintech. The study will use a simultaneous model with the two stage least square (TSLS) method. The study used undergraduate students at the University of Lampung as respondents. The results of the study do not occur simultaneously with price variables on the demand and supply of services Fintech.

Keywords: Fintech, TSLS, Services

1 Introduction

Financial technology (fintech) is a new paradigm where information technology encourages innovation in the financial industry and develops rapidly. Fintech is one of the companies engaged in financial services combined with technology. Fintech makes the financial industry more efficient and improves the quality of financial services. From a banking point of view, the benefits of online banking will provide a level of efficiency in terms of operational costs, time, information, communication within the organization and comfortable interaction with prospective customers. According to [1], suggest that the participants of the technology ecosystem in the growth of fintech are entrepreneurs, governments, and financial institutions. Startup Fintech ecosystem is one element technology. The difference financial services of fintech using innovative technologies offered by companies, analyzed the advantages and disadvantages of these services in comparison to the services offered by traditional financial sector companies [2]. Research also claims that startup companies fintech generate financial system efficiency [3], [4]. The potential market for service users is fintech very broad, especially adults [5]. The increasing number of users who cannot use traditional banking services contributes to the development of FinTech.

In Latvian community, research evaluates how ready the Latvian community to use services fintech, and the results was that the Latvian people are not ready to use services fintech[2]. This technology enables the financial facilitation process to be more convenient, faster, and more cost-effective. Fintech has great opportunities in Indonesia and at the same time, the government has covered Fintech customers with regulatory authorities. Financial services using fintech will also experience advantages and disadvantages and risks that will be
experienced by both companies and consumer users. It is hoped services fintech that provide convenience, speed and security as well as consumer satisfaction will increase consumer interest.

Several financial service institutions have used digitization in their products by providing services online to speed up the process credit application, this is in line with the Financial Services Authority master plan No.77/POJK.01/2016.

Formulation Problem

Startups are financial services companies that use Fintech. These financial services are strongly influenced by the number of requests for services Fintech. Several factors affect the offering of services Fintech: from the consumer side, namely the price of consumer goods as a credit loan application and risk. The amount of risk given to consumers will reduce the number of services provided by financial institutions.

From the side of companies Fintech, demand is influenced by the amount of income from creditors and the price of goods needed. Financial credit financing is indicated by the credit interest rate as reflected by the margin. On the other hand, the high and low interest rates reflect the economic condition of a country [6]. Therefore, the interest rate (margin) set by the company is one of the factors that affect the price of goods/services demand foodservices Fintech.

The price of goods is a factor that affects both the demand side of the company and the company side Fintech. On the other hand, consumer demand will also affect the number of offers from companies Fintech. This study will examine the effect of price on the demand and supply of services Fintech, Cicil.co.id. This study will analyze whether there is a simultaneous relationship between the price factor and the demand and supply of services Fintech.

2 Literature Review

Fintech is also defined as technological innovation in financial services that can produce business models, applications, processes or products with material effects related to the provision of financial services. In a broader sense, fintech is seen as a new market that combines finance and technology and replaces traditional financial structures with new technology-based processes. Financial transactions through fintech include payments, investments, lending money, transfers, financial plans and comparisons of financial products. Based on the analysis of fintech development and the uniqueness of this business, the comparative advantages of fintech were identified, including highly standardized and low-cost financial services; internet-based and therefore less geographically concentrated; changing consumer behavior; lower regulation of financial services.

In the concept of demand, an increase in the price of a product (ceteris paribus) will cause a decrease in the quantity demanded of a good. Another thing that will also shift the demand curve is the influence of the prices of other goods and consumer tastes. Meanwhile, in the aspect of consumer behavior, there are a number of real individual actions (consumers) that are influenced by internal and external factors that direct consumers to assess, choose, obtain and use the desired goods and services.

Margin is the amount of gross profit received by the company acting as a producer or the difference between production costs and the market selling price. In general, financing customers make payments in installments. Claims arising from sale and purchase transactions and/or leases based on this agreement are referred to as receivables by the service provider.
company. The amount of receivables depends on the platform financing, namely the amount of financing (purchase price plus cost price) stated in the financing agreement. If the margin set by a platform is too high, the project proponent or party who needs funds will discourage their intention to apply for funding. Because after all, the project proponent would want the margin of the loan covered to be reasonable. In other words, on platforms that set high margins, the number of “goods” demanded or the number of consumers submitting submissions has decreased.

According to [7] supply is the quantity supplied positively related to the price of goods. Relationship between price and quantity. What is offered is called the law of supply with other things being equal, when the price of a good increases, so does the quantity the goods supplied will increase. The analysis of supply and demand that occurs in an industry can be used to describe the shape of the market mechanism that occurs. Through price control or other policies without any intervention from the government in a market, supply and demand will reach equilibrium to produce the market price of a good and the total quantity produced.

Financial Technology (Fintech)

Fintech can be defined as the utilization of information technology developments to improve services in the financial industry. Along with the development of technology, the types of Fintech are increasingly diverse, including financial technology innovations related to payments and transfers, financial service institutions, and Fintech start-up companies that use new technology to provide services that are faster, cheaper, and more convenient. According to Financial Services Authority, the types of Fintech in this sector include Peer-to-Peer (P2P) Lending, Crowdfunding, Supply Chain Finance, and others. All of Fintechs these provide convenience for financial consumers to buy and use financial products and services at this time.

Cicil.co.id is a start-up financing that provide mortgage services to students. The services provided to meet the needs of students with the costs incurred to obtain these items can be paid in installments thanks to the cicil.co.id service. Cicil.co.id service does not use an interest system like other start-ups financing. This start-up uses a low-value margin system. Services Fintech that provide convenience, speed and security as well as consumer satisfaction will increase the interest of service users.

3 Methodology and Data Analysis

3.1 Types and Sources of Data

Several types of Start-up -based services Fintech in Indonesia include providing Financing and Investment products, namely loan and investment services for the community. Service Fintech users in Indonesia are dominated by people aged 19-34 years (69.81%) and student status. Startup Cicil.co.id is a service Fintech which is one of the services that offers special financing services for active students. Services offered to help pay for tuition needs. Bandar Lampung is one of the cities where services are Fintech provided, Cicil.co.id. Some students from the University of Lampung are recipients of services Fintech, Cicil.co.id (forlap.ristekdikti.go.id). In this study, active students are active students studying at the University of Lampung (UNILA) with ages between 19-25 years. In this study will use the method Purposive Sampling. To obtain sample data, the method will be used Snowball Sampling.
3.2. Variable Operational Definitions:

1. **Quantity of Service Request Fintech (Qd)**
   The quantity of service request Fintech is the amount of funds borrowed by consumers or the public to service providers, namely companies or startups based on Fintech for consumption, which are expressed in Rupiah.

2. **Quantity of Service Fintech Offers (Qs)**
   The quantity of service Fintech offerings is the amount of funds channeled or lent by company’s startup to consumers for the purpose of consumption expressed in Rupiah.

3. **Price of Goods (P)**
   The price of goods is the value that must be issued to obtain the goods needed which are expressed in rupiah.

4. **Student Income (YM)**
   Student income is the amount of wealth owned or obtained by students every month which can be allocated for consumption purposes, expressed in rupiah.

5. **Profit Margin of Service Fintech Companies (MR)**
   Profit margin is the amount of profit received by the service provider startup based on the results of the agreement on the services that have been provided to consumers expressed in rupiah.

3.2. Specification of Data Analysis Model

The data analysis technique used in this research is simultaneous equation regression analysis. This analysis is to determine the relationship between demand and supply of Fintech where services there are variables that influence each other. The specifications of the model used in this study are as follows:

**Structural Regression Model Equation**

Fintech Demand Function:
\[ Q_d = \beta_0 + \beta_1 P + \beta_2 Y_M + \beta_3 M_R + \epsilon \]  \hspace{1cm} (3.1)

**Description:**
- \( Q_d \): Quantity of goods/services Fintech requested/needed by consumers
- \( P \): Price of goods needed/offered
- \( Y_M \): Student income
- \( M_R \): Margin / Interest rate set by companies Fintech based on services that have been/will be provided.
- \( \beta_1, \beta_2, \beta_3 \): Regression coefficient
- \( \beta_0 \): Constant / intercept
- \( \epsilon \): Error term
- \( i \): Data Cross Section

Demand Fintech equation:
\[ Q_s = \gamma_0 + \gamma_1 P + \epsilon_2 + \epsilon \]  \hspace{1cm} (3.2)

**Description:**
- \( Q_s \): Quantity of goods / services offered by the company Fintech
- \( P \): Price of items needed
- \( \gamma_1 \): Regression coefficient
- \( \gamma_0 \): Constant / intercept
- \( \epsilon \): Error term
- \( i \): Data Cross Section
Equation Model Simultaneous

Reduced Form Using a Formula Balancing Market

\[ Q_d = Q_s \]
\[ \beta_0 + \beta_1 P_i + \beta_2 YM_i + \beta_3 MR_i + \epsilon_{1i} = \gamma_0 + \gamma_1 P_i + \epsilon_{2i} \]

Balanced Price:

\[ P_i (\beta_1 - \gamma_1) = (\gamma_0 - \beta_0) - \beta_2 YM_i - \beta_3 MR_i + (\epsilon_{2i} - \epsilon_{1i}) \]
\[ P_i = \Pi_0 + \Pi_1 YM_i + \Pi_2 MR_i + \nu_i \]

Where:

\[ \Pi_0 = \frac{(\gamma_0 - \beta_0)}{(\beta_1 - \gamma_1)} \]
\[ \Pi_1 = -\frac{\beta_2}{(\beta_1 - \gamma_1)} \]
\[ \Pi_2 = -\frac{\beta_3}{(\beta_1 - \gamma_1)} \]
\[ \nu_i = \frac{(\epsilon_{2i} - \epsilon_{1i})}{(\beta_1 - \gamma_1)} \]

substitution results in a balance of price equation offer models simultaneous equations obtained

\[ \hat{P}_i = \Pi_0 + \Pi_1 YM_i + \Pi_2 MR_i + \nu_i \]
\[ \hat{Q}_i = \Pi_3 + \Pi_4 YM_i + \Pi_5 MR_i + \nu_i \]

Simultaneous Equation Estimation Method

The estimation of the simultaneous equation model begins with identification to determine whether the simultaneous equation model can be estimated or not. From the identification results, it can also be seen that the appropriate estimation method is used in the simultaneous equation. There are three possibilities that occur to the simultaneous equation model, namely: unidentified (unidentified), identified (identified), and (over identified over identified). The conditions required in the identification of the simultaneous equation model, namely [8]: over identified carried out, the estimation is using the two-stage least squares analysis method covering

3.3. Simultaneity

Test Hausman test is conducted to examine the simultaneity problem that occurs because several endogenous independent variables tend to be correlated with the error term. If a simultaneous problem occurs, which means there must be a method other than OLS; otherwise we can use OLS. The OLS estimator will produce a consistent and efficient estimator if there are no simultaneous equations in a model. By using the 2SLS method, we will produce a consistent and efficient estimator.

3.4. Model Specification Test.

The model specification test is based on statistical criteria through a partial significance test (test t), simultaneously (test F) and a test of the coefficient of determination (goodness of fit). The test or test was t partial significance conducted to determine whether the independent variable partially significantly affected the dependent variable. With the hypothesis:
H₀ : β₀ = 0, the independent variable has no effect on the dependent variable
H₁: βᵢ ≠ 0, independent variable affects the dependent variable

Test is carried out by comparing the test value t from the calculation results with the test value t obtained from the table Standard Normal Distribution t. The statistic test was F conducted to determine whether the independent variables jointly affect the dependent variable. The test is carried out by comparing the test value F from the calculation results with the test value F obtained from the Distribution Table F. The coefficient of determination test is to see the percentage of the total variation of the independent variables that can be explained by the regression model. Testing is done by looking at the Adjusted R-Squared

4 Research Results and Discussion

4.1. Research Results

Variable Identification Test Identification
Test using Order Condition

Based on the structural equation model and simultaneous equation (3.5) and (3.6), the variable identification test uses the order condition.

a. In the service demand function equation Fintech, we get
   K – k > M – 1 => 2 – 2 < 2 – 1 => under identified
b. In the service offering function equation Fintech, we get;
   K – k > M – 1 => 2 – 0 > 2 – 1 => over identified identification

The results through the order condition that to regress the two equations above can use the method Two Stage Least Square (TSLS/2SLS) because the identification results show that the equation in the function of offering services is Fintech too identified (over identified).

4.2. Estimation Results

Factors influencing demand and supply of services Fintech

Demand for services Fintech

From the regression results of equation (3.1) the equation for service demand Fintech. (Qd) ; Qd = β₀ + β₁ Pᵢ + β₂ YMᵢ + β₃ MRᵢ + eᵢ

following results are obtained:

The results of the estimation of the service demand equation Fintech (Qd):
Qdi = 780.380 – 0.617502 Pi – 0.111159 YMᵢ + 9.304313 MRᵢ + eᵢ
T-count = (5.2169) (-1.3698) (-0.9262) (4.1605) R²= 0.9161
F – statistic = 320.1644

Based on the regression results, that the effect of price, profit margin, and student income on the demand for services Fintech at the University of Lampung is as follows:

Price variable (P) price has a negative effect on the number of service requests Fintech but significant with confidence (α = 5%). The variable profit margin of the company (Mr) has a coefficient value of 9.3043, and the effect is significant with a confidence number (α = 1%).
Student Income Variable (YM) has a coefficient value of negative 0.1112, and the effect is significant with the confidence number (\( \alpha = 5\% \)).

The results of the analysis of the coefficient of determination (R\(^2\)) is equal to 0.9161 which indicates that the effect of the price variable (P), income students (YM) and profit margins (MR) to the quantity of service requests Fintech (Qd) amounted to 91.61%. Meanwhile, 8.39% is influenced by other variables not discussed in the study.

Fintech service offerings

From the regression results of equation (3.2) the service offering equation Fintech (Qs);

\[
Q_{si} = \gamma 0 + \gamma 1 P_{i} + \epsilon_{2i}
\]

Results Estimates service supply equation Fintech (Qs):

\[
Q_{si} = 652.291.2 +1,212196P_{i} + \epsilon_{2i}
\]

\[
\text{T-count} = (4.5703) (28.1165 )
\]

\[
R^2 = 0.8978
\]

\[
\text{F-statistic} = 780.5382
\]

Based on the regression results that Price (P) has a positive influence on the number of service Fintech offerings at the University of Lampung with a coefficient of 1.2122, and the effect is significant with a confidence number (\( \alpha = 1\% \)).

The estimation results of the coefficient of determination (R\(^2\)) of 0.8978 which indicates that the effect of the price variable (P) to the quantity of service offerings Fintech (Qs) amounted to 89.78%. Meanwhile, 10.22% is influenced by other variables that are not included in this study.

**Simultaneity**

Test The test is Hausmann used to test Simultaneity with the following stages:

Variable Regression P to YM and MR

model of simultaneous equations obtained:

\[
\hat{P}_i = \Pi_0 + \Pi_1 Y_{Mi} + \Pi_2 M_{Ri} + v_i .......................................................(3.7)
\]

\[
\hat{Q}_i = \Pi_3 + \Pi_4 Y_{Mi} + \Pi_5 M_{Ri} + w_i ......................................................(3.8)
\]

Regression equation (3.7) uses the OLS method to obtain the residual value (vi) of the predicted value price (\( \hat{P}_i \)) so that it can be made as the following equation:

\[
P_i = \hat{P}_i + v_i ............................................................................ (3.9)
\]

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>T-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>28229.31</td>
<td>33045.84</td>
<td>0.805497</td>
<td>0.4227</td>
</tr>
<tr>
<td>MR</td>
<td>4.933418</td>
<td>0.055202</td>
<td>89.370777</td>
<td>0.0000</td>
</tr>
<tr>
<td>YM</td>
<td>0.042614</td>
<td>0.027857</td>
<td>1.529767</td>
<td>0.1296</td>
</tr>
</tbody>
</table>

R\(^2\) = 0.9923

F-statistic = 5748.735

The estimation results that the effect of profit margins and student income on prices are;
positive value of 4.9334 to the price of goods in the proposed and significant. Student income variable has a coefficient value of 0.0426, a positive and insignificant effect on the price of goods. The estimation results of the coefficient of determination (R^2) of 0.9923 that shows the influence of independent variables student revenue and profit margins against the proposed price is equal to 99.23%. Meanwhile, 0.77% is influenced by other variables that are not included or discussed in this study.

The estimation results of equation (3.7) will be used for the prediction of price variables (i) and the residual value (vi) from the equation. The magnitude of these results will be used to determine whether there is a simultaneity problem between demand and supply of services Fintech by looking at the relationship that occurs between the dependent variable, namely the service quantity variable (Q) and the residual value from the regression equation (3.7).

Results of regression equation (3.9) above we can enter into the equation (3.2), in order to obtain the following equation:

\[ \hat{Q}_i = \gamma_0 + \gamma_1 \hat{P}_i + \gamma_2 \hat{\theta}_i + \epsilon_{2i} \] ...................................................(3.10)

The estimation results of the equation (3.10) can be used to determine whether there is a simultaneity problem in the equation of demand and supply of services Fintech at the University of Lampung. Simultaneity problem will occur in equation (3.2) where \( P_i \) and \( e_{2i} \) are interconnected and vice versa simultaneity problem will not arise if \( P_i \) and \( e_{2i} \) are not interconnected. (Widarjono, 2016; 262).

The results of the regression equation (3.10) that the effect of price predictions (i) and residual values (vi) to the quantity of service offerings Fintech (Qi) shows that the probability that occurs in the residual value (vi) which is equal to 0.1779 is not significant. Thus, in this case it can be said that there is no simultaneity problem between the two dependent variables, namely the price variable (P) and the service quantity variable, which means the null hypothesis (H0) is rejected.

4.3. Discussion

The demand for services Fintech that occurs among students at the University of Lampung is influenced by student income and the amount of company profit margins set by the service provider (Cicil.co.id). But the price variable has no significant effect on the number of service requests Fintech Cicil.co.id. Magnitude profit margin determined by the company Cicil.co.id at every submission using services Fintech performed by each consumer that is
approximately 20% of the price of goods submitted to the service. This results in an increase in the price of the proposed goods so that this price becomes higher than the price prevailing in the market for that type of goods. It can be said that the amount of profit margin has an indirect influence on changes in the demand for services Fintech, the margin has a significant influence on the demand for services Fintech decrease. through changes in the price of goods. Student income has a negative effect, which means that if there is an increase in student income, student interest in using these services will reduced so that the demand for services Fintech will decrease.

The offer of services Fintech carried out by the Cicil.co.id company to students at the University of Lampung, is positive, which means that the greater the total price of goods submitted using services, the Cicil.co.id's greater Fintech the quantity of services offered by the company. The results showed that there is no simultaneity problem between demand and supply of services Cicil.co.id Fintech among students at the University of Lampung. This means that the relationship that occurs between the two endogenous variables of demand and supply from the equation is not a mutually influencing relationship. The quantity of services offered by the company is strongly influenced by the quantity demanded by consumers as seen from the amount of the price submitted on the application for the service submission Fintech cicil.co.id.

5 Implication and Suggestion Future Research

Student income and the amount of profit margin set by the company as a form of pricing policy on services Fintech have a significant influence on the demand for services Fintech that occurs among students at the University of Lampung. Simultaneity test with test Hausmann results that there is no simultaneous relationship between the two dependent variables, namely the price variable (P) and the service quantity variable. The company's profit margin, which in this case is a company policy that can affect the price, the service provider company should be Fintech able to consider the amount of a low profit margin in order to increase the demand for services Fintech.

References

Analysis of the Quality of Corporate Information Disclosure: Relevance, Credibility, and Readability in the Digital Disclosure Environment  

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Abstract. This study aims to investigate individual investors' perceptions of the quality of corporate information disclosure, namely relevance, credibility, and readability. This study uses a Multidimensional Quality Model (MQM) approach by [1]. This study uses an online survey approach to 96 individual investors in Indonesia. The results of this study indicate that individual investors' assessments of relevance, credibility, and readability measures are in line with the concept of information quality in MQM. In addition, this study also shows that the disclosure of corporate information presented on the company's website (according to POJK No. 8 of 2015 and POJK No. 31 of 2015 has varying levels of relevance, credibility, and readability. Investors assess financial highlights which have highly relevance (37%) and readability (85%). Meanwhile, they chose annual financial report as the highest credibility (89%) of corporate information disclosure. This study gives both academic and practice contribution. Academically, it broadens our understanding of information disclosure quality (relevance, credibility, and readability) and provides opportunities for new avenues of research. In practice, it gives suggestions for both management and regulator in designing firm disclosure strategy.

Keywords: corporate disclosure, relevance, credibility, readability, information quality.

1 Introduction

The change in the disclosure environment from conventional to digital has significantly increased the needs of users (investors) of relevant, credible, and readable information for making an optimal investment decisions [2].

In the conventional disclosure environment, corporate information disclosure focuses more on the aspects of relevance and reliability. Information is said to be relevant if the substance of the information can be used by users in making decisions. Information is said to be reliable if the information can be verified. In a digital disclosure environment characterized by the availability of a variety of information (corporate and non-corporate information), high speed of access to information (real time access), and the availability of various digital platforms (website, facebook, twitter, instagram, youtube, and others) as media Information disclosure has changed the focus of information disclosure towards disclosure of relevant, credible, and readable information.

Empirically, many previous studies show that the relevance of accounting information disclosure decreases [3], [4]; the credibility of corporate information disclosure in the digital disclosure environment is beginning to be doubted [2], [5]; and the readability of corporate information disclosures that are increasingly difficult to understand [6], [7]. Furthermore, recent studies show that changes in digital information technology have an impact on users (investors) in acquiring and processing information in making investment decisions [2]. Advances in digital information technology have facilitated the availability of various information from both internal and external companies with varying relevance, credibility, and readability. Under these conditions, users need to be more careful in assessing relevant, credible, and readable information before making
investment decisions. The inaccuracy of investors in finding, acquiring, and processing information can have a negative impact on making investment decisions.

In general, this study aims to investigate investor perceptions of (1) the quality of corporate information disclosure available on the company's website; and (2) the effectiveness of using digital platforms as a medium for information disclosure. Specifically, research question was formulated as follows:

1. How does the investor's perception of relevance, credible, and readability?
2. How does the investor's perception of the relevance of disclosure of information for investors on the company's website?
3. How does the investor's perception of the credibility of information disclosure for investors on the company's website?
4. How does the investor's perception of the readability of information disclosure for investor on the company's website?

This study is provide significant contributions, namely: first, it can enrich the literature on corporate information disclosure, especially regarding the relevance, credibility, and readability of information disclosure. Second, the contribution of best practice for the company is to provide insight in designing an effective corporate disclosure strategy. Third, the contribution of policies to regulators, namely OJK-RI, as an evaluation material for the effectiveness of the implementation of POJK No. 8 of 2015 and POJK No. 31 of 2015.

2 Literature Review
2.1 Disclosure of Information in the Digital Disclosure Environment
The change in the disclosure environment from conventional to digital has a significant impact on information makers (companies) and users (investors). Conceptually, the complexity of the digital disclosure environment is illustrated in Figure 1.

The volume and variety of available and easily accessible external information has a significant impact on investors and information makers. In a complex digital disclosure environment, investors' need for relevant, credible, and readable information is getting higher. Therefore, companies are required to be more adaptive to user responses to the quality of information disclosure.

2.2 Regulation of Disclosure of Digital Information in Indonesia
The development of technology and social media has a significant impact not only on information providers in disclosing information, but also for users (investors, creditors, government, and the public) in finding and processing the information to make decisions. Internet-based technology has facilitated companies to disclose information through web-based financial reporting. The Financial Services Authority of the Republic of Indonesia (OJK RI) responded to the rapid advances in technology by formulating POJK No. 8 of 2015 concerning the disclosure of corporate information on the company's website and POJK No. 31 of 2015 concerning the disclosure of material facts of the company to the public.

Issuance of POJK No. 8 of 2015 aims to increase transparency and access for shareholders and other stakeholders to the latest company information. Through this regulation, issuers are required to have a company website as a medium for disclosing general information on issuers, information for investors/investors, information on corporate governance, and information on corporate responsibility. In accordance with the initial purpose of this study, this research is more focused on investors' perceptions of information disclosure for financiers/investors. The mandatory information that must be disclosed to investors/investors includes: public offering prospectus, annual financial reports, semi-annual financial reports, and summary of important financial data, each for the last five financial years period, stock information, and corporate action information.
In addition, OJK RI also issued POJK No. 31 of 2015 which aims to improve the quality of openness of issuers regarding information on corporate actions and material facts of the company. The information that must be disclosed at a minimum includes: the date of the incident, the type of information or material fact, a description of the material information, and the impact of the incident on the information. Information on disclosure of material facts must be disclosed on the company’s website no later than the second day after the information is received.

2.3 Quality of Information Disclosure
The main output of the company’s accounting activities is to produce quality accounting information, namely information that can be used as a basis for consideration in making decisions and can provide an optimal rate of return on investment for the company. Conceptually, the quality of accounting information disclosure has been formulated by the Financial Accounting Standard Board (FASB) in the Statement of Financial Accounting Concept (SFAC No. 2) or by the Indonesian Institute of Accountants presented in the Conceptual Framework for the Statement of Financial Accounting Standards on the qualitative characteristics of financial reporting that focuses on relevance and reliability. Accounting information is said to be relevant if the use of that information has an impact on decision making. Information is said to be reliable if the information can be verified. In the conventional disclosure environment, the two qualitative characteristics of information disclosure are still relevant, but not in the digital disclosure environment.

An alternative model of contemporary information disclosure quality, namely the Multidimensional Quality Model (MQM) [1] states that the quality of corporate information disclosure is determined by three things, namely the relevance of information content, credibility, and communication (readability) of information disclosure. The relevance of information content includes the substantive content of the message to be conveyed (type of information, size, theme, and volume of information). Credibility of disclosure of information, namely the ability of an information to be trusted. Communication is a method or media used by companies to communicate information so that it can be more easily read (readable) and understood (understandability). Previous studies on measuring the quality of disclosure of information focused more on the conventional disclosure environment. Previous researchers did not consider the presence of other (non-corporate) information that also influences the decision-making process.
2.4 Relevance of Disclosure of Information

[9] provides a definition of value relevance of information as the ability to explain (explanatory power) of accounting information in relation to firm value. Accounting information is said to be relevant when the availability of other (non-accounting) information is not more influential in decision making. Relevance is referred to as the capability “of making a difference in the decisions made by users in their capacity as capital providers”. Drawing on prior literature, relevance is operationalized using four items referring to predictive value, confirmatory value, timeliness.

Many researchers have operationalized predictive value as the ability of past earnings to predict future earnings [1]. Predictive value explicitly refers to information on the firm’s ability to generate future cash flows: “information about an economic phenomenon has predictive value if it has value as an input to predictive processes used by capital providers to form their own expectations about the future” [10]. We consider predictive value as most important indicator of relevance in terms of decision usefulness and measure predictive value using three items. The first item measures the extent to which annual reports provide forward-looking statements. The forward-looking statement usually describes management’s expectations for future years of the company.

2.5 Credibility of Disclosure of Information

In a digital disclosure environment, the availability of external information as either complementary or substitute information can influence individuals in making decisions. This phenomenon is explained and predicted by the Media Agenda-Setting Theory (MAST). This theory explains that mass media (online media: web site, blog site, social media: twitter, face book) as an information provider platform has the power to influence and even shape the mindset of investors who are exposed to information exposure [11]. Therefore, the credibility of information disclosure is one aspect that investors consider in making decisions.

The concept of credibility of information disclosure has been formulated in previous research [12] [13] [14] [15]. Conceptually, credibility implies believability, trust, accuracy, and objectivity [16]. Credibility of information disclosure is defined as an individual's perception of the ability of an information to be trusted. Although the level of credibility of information disclosure varies between individuals, studies show that investors are very sensitive to variations in credibility [14].

The results of meta-analysis [17] [12] [15] show that information is said to be credible if the three aspects are: the source of information (source), information content (message), and the media used contains an element of credibility. The credibility of the source of information is measured by assessing that the individual or organization that issued the information is that the individual/organization has competence (expertise) and has a reliable track record, as issued by an authorized individual/organization, submitted on the official website of the individual/organization. The credibility of the information message can be demonstrated by the relevance and accuracy of the information conveyed. Media design credibility focuses more on the structural attributes inherent in web pages, such as information design.

In this research, the credibility of information disclosure is measured using the credibility of the information source [1], [17]. Disclosure of stock analyst information is said to have high credibility if the information comes from a competent (expert) source (individual or organization), has a good track record, and is published on the official website of the individual/analyst organization. On the other hand, disclosure of stock analyst information is said to have low credibility if the information comes from an incompetent (expert) source (individual or organization), has a poor track record, and is not published on the official website of the individual/analyst organization.

2.6 Readability of Information Disclosure

Conceptually, readability of information disclosure is defined as the ease with which individuals/users can process and understand comprehensive narrative/text disclosures [18]. Another concept defines readability as the ability of an information to be more easily read and understood by users [19].

Readability of information disclosure is one of the determinants in measuring the quality of disclosure [20][21]. The issue of financial statement readability has long been a topic of discussion.
among financial statement preparers, regulators, and users of financial information in the United States. Furthermore, they expressed concern over the disclosure of corporate financial reporting which is considered to be not timely, excessive, difficult to read, difficult to understand, less specific, and more boilerplate from time to time [22], [23]. This phenomenon was successfully confirmed by [20][24] that in the last two decades the level of readability of financial information disclosures is very low and difficult to understand.

The level of readability of web-based financial reporting is measured using the readability characteristics according to SEC’s A Plain English Handbook year of 2010. The readability characteristics measured included semantic and visual aspects. Semantic characteristics with high readability were measured based on: the use of short sentences, passive voice, no redundant words, writing in positive simple synonyms, and easy-to-read sentence layout. Visual characteristics with high readability are measured based on: clear title hierarchy, selection of easy-to-read typography, graphic design for quantitative data, and choosing color combinations that are easy to read by the eye. Semantic and visual characteristics at low readability were measured otherwise. In detail, the readability measure according to SEC’s A Plain English Handbook.

3 Methodology and Data Analysis
3.1 Types of Research
This research is an exploratory study of investors' perceptions of the quality of information (relevance, credibility, and readability) of corporate information disclosure. Researchers used an online-based survey method using google form and whatsapp group media. Research respondents are individual investors. The questionnaire instrument was developed from research [1][25] [26].

3.2 Research Respondents
The respondents of this research are individual investors who are members of the Whats App Group community of the Republic of Investors (142 people) and the Telegram Stock Zone (4347 people with 92 active members).

3.3 Research Variables
The variable of this research is the quality of information disclosure (relevance, credibility, and readability). The research instrument was developed from [1], [17].

3.4 Analysis Tools
To answer the research questions, this study used a descriptive statistical approach SPSS 13. Previously, this study measured the level of validity and reliability of the data using Cronbach Alpha.

4 Research Result and Discussion
4.1 Demographics of Respondents
This study succeeded in obtaining a response rate of 41% or 96 people from 234 individual investors who were sent an online survey. Table 4.1 shows the descriptive statistics of demography respondents based on gender, age, educational background, and investment experience.

<table>
<thead>
<tr>
<th>Demography Characteristics</th>
<th>Frequencies</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Male</td>
<td>63</td>
<td>66%</td>
</tr>
<tr>
<td>- Female</td>
<td>33</td>
<td>34%</td>
</tr>
<tr>
<td>Age:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- 20 -30</td>
<td>18</td>
<td>20%</td>
</tr>
<tr>
<td>- 31 – 40</td>
<td>38</td>
<td>39%</td>
</tr>
<tr>
<td>- &gt; 41</td>
<td>40</td>
<td>41%</td>
</tr>
<tr>
<td>Investment Experience:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- &lt; 2 years</td>
<td>50</td>
<td>53%</td>
</tr>
<tr>
<td>- &gt; 2 years</td>
<td>46</td>
<td>47%</td>
</tr>
<tr>
<td>N observation</td>
<td>96</td>
<td>100%</td>
</tr>
</tbody>
</table>
Based on validity and reliability test of information disclosure quality instruments, this research instrument are valid and reliable. Using factor analysis, it shows that the instrument has good validity with factor loading values > 0.7; relevance (>0.81), credible (0.77), and readability (0.72). While reliability test using Cronbach alpha shows that three variables are reliable: 0.936 (relevance), 0.872 (credible), and 0.755 (readability).

Based on the results of an online survey that was responded to by 96 individual investors, the following results were obtained as follow.

4.2 Investors' perception of the quality of corporate information disclosure
Investors were asked to identify the characteristics of the quality of corporate information disclosure. It consist of relevance, credible, and readability of the information disclosure. The characteristic used by individual investor in Indonesia are displayed in Table 4.2.

<p>| Table 4.2. Investor Perception on the Quality of Corporate Information Disclosure |
|---------------------------------|------------------|----------------|</p>
<table>
<thead>
<tr>
<th>No</th>
<th>Investor Perception</th>
<th>Percentage of Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Relevance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Predictive value</td>
<td>92%</td>
</tr>
<tr>
<td></td>
<td>b. Confirmatory value</td>
<td>77%</td>
</tr>
<tr>
<td></td>
<td>c. Timeliness</td>
<td>87%</td>
</tr>
<tr>
<td>2</td>
<td>Credibility</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Competency source of information</td>
<td>90%</td>
</tr>
<tr>
<td></td>
<td>b. Issued by authorized individual/organization</td>
<td>70%</td>
</tr>
<tr>
<td></td>
<td>c. Display on official website of firms</td>
<td>81%</td>
</tr>
<tr>
<td>3</td>
<td>Readability</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. the use of short sentences</td>
<td>88%</td>
</tr>
<tr>
<td></td>
<td>b. No redundant words</td>
<td>53%</td>
</tr>
<tr>
<td></td>
<td>c. Easy-to-read sentence layout</td>
<td>60%</td>
</tr>
<tr>
<td></td>
<td>d. Clear title hierarchy</td>
<td>79%</td>
</tr>
<tr>
<td></td>
<td>e. Easy to read typography</td>
<td>62%</td>
</tr>
<tr>
<td></td>
<td>f. Graphic design for quantitative data</td>
<td>90%</td>
</tr>
<tr>
<td></td>
<td>g. Color combination</td>
<td>68%</td>
</tr>
</tbody>
</table>

As shown in Table 2, investors give an assessment of three measures of the quality of information disclosure. Investors agree that the relevance of information disclosure can be measured by three indicators, namely predictive value, confirmatory value, and timeliness. Of the three measures, the ability of information to predict future values has a higher weight, which is 92% compared to the other two criteria, timeliness (87%) and confirmatory value (77%).

Furthermore, investors assess that the credibility of information disclosure can be measured by three indicators, namely the source of information, authorized individual/organization issuers, and it is on the official website of firms. The survey results show that disclosure of corporate information published by individuals/organizations that have good competence or track record gets a higher weight, namely 90%.

Individual investors also consider that the readability of information disclosure is reflected by six semantic and visual aspects. For the semantic aspect, investors give the highest weight to the use of graphs for quantitative data, followed by concise sentences (88%), clear title hierarchy (79%), color combination (68%), easy to read typography (62%), and the last no redundant words (53%).

4.3 Investors' perception of the relevance of corporate information disclosure
Investors were asked to identify how relevant the information presented on the company's website is for making investment decisions. The corporate information disclosure rating deemed relevant by investors is presented in Table 4.3.
Table 4.3. The Relevance of Corporate Information Disclosure

<table>
<thead>
<tr>
<th>Rank</th>
<th>Information Type</th>
<th>Percentage of Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Financial Highlight</td>
<td>37%</td>
</tr>
<tr>
<td>2</td>
<td>Semi-Annual Financial Statement</td>
<td>21%</td>
</tr>
<tr>
<td>3</td>
<td>Stock Information</td>
<td>15%</td>
</tr>
<tr>
<td>4</td>
<td>Corporate Action Information</td>
<td>11%</td>
</tr>
<tr>
<td>5</td>
<td>Annual Financial Report</td>
<td>8%</td>
</tr>
<tr>
<td>6</td>
<td>General Meeting of Shareholders Information</td>
<td>5%</td>
</tr>
<tr>
<td>7</td>
<td>Public Offering Prospectus</td>
<td>3%</td>
</tr>
</tbody>
</table>

According to Table 4.3, it shows that investors give higher weight to quantitative information than to qualitative information. Financial highlights are assessed as quantitative information that has the highest relevance (37%) compared to semi-annual financial statements (21%), and annual financial reports (11%). Meanwhile, the relevance of qualitative information includes stock information (15%), corporate action information (8%), general meeting of shareholders (5%), and public offering prospectus (3%).

4.4 Investors' perception of the credibility of information disclosure for investors

Investors were asked to identify how credible the information presented on the company's website is for making investment decisions.

Table 4.4. The Credibility of Corporate Information Disclosure

<table>
<thead>
<tr>
<th>No</th>
<th>Information Type</th>
<th>Percentage of Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Financial Highlight</td>
<td>75%</td>
</tr>
<tr>
<td>2</td>
<td>Semi-Annual Financial Statement</td>
<td>87%</td>
</tr>
<tr>
<td>3</td>
<td>Stock Information</td>
<td>77%</td>
</tr>
<tr>
<td>4</td>
<td>Corporate Action Information</td>
<td>73%</td>
</tr>
<tr>
<td>5</td>
<td>Annual Financial Report</td>
<td>89%</td>
</tr>
<tr>
<td>6</td>
<td>General Meeting of Shareholders Information</td>
<td>77%</td>
</tr>
<tr>
<td>7</td>
<td>Public Offering Prospectus</td>
<td>65%</td>
</tr>
</tbody>
</table>

As shown on Table 4.4, the information which published on the firm official website is rated as credible by investors. Investors consider that the disclosure of financial information audited by the auditor is more credible than the disclosure of non-financial information, namely 89% for annual financial statements and 87% for semi-annual financial statements. Meanwhile, the disclosure of financial highlight information that is not audited by the auditor is assessed at 75%.

Furthermore, Investors were asked to identify how credible the media of information disclosure presented on the company's social media. As shown on Table 4.4 the disclosure of corporate information through the official firm website has the highest credibility value of 81%. The second and third positions are followed by official firm youtube (80%) and what app group from stock analyst (77%). Meanwhile, the information that publishes on other social media such as Instagram, Facebook, and online media is considered to have lower credibility, namely 66%, 62%, and 60%.

Table 4.4. Frequently Used of Disclosure Media

<table>
<thead>
<tr>
<th>Rank</th>
<th>Information Type</th>
<th>Percentage of Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Official Firm Website</td>
<td>81%</td>
</tr>
<tr>
<td>2</td>
<td>Official Firm Youtube</td>
<td>80%</td>
</tr>
<tr>
<td>3</td>
<td>Stock Analyst Whats App Group</td>
<td>77%</td>
</tr>
<tr>
<td>4</td>
<td>Twitter</td>
<td>73%</td>
</tr>
<tr>
<td>5</td>
<td>Stock Analyst Telegram</td>
<td>71%</td>
</tr>
<tr>
<td>6</td>
<td>Instagram</td>
<td>66%</td>
</tr>
<tr>
<td>7</td>
<td>Official Firm Facebook</td>
<td>62%</td>
</tr>
<tr>
<td>8</td>
<td>Online Media</td>
<td>60%</td>
</tr>
</tbody>
</table>

4.5 Investors' perception of the readability of information disclosure for investors

Finally, investors were asked to identify how readability the information presented on the company's website is for making investment decisions.
As shown on Table 4.5, it knows that the present of financial highlight has a higher level of readability (85%) than semi-annual financial statements (74%) and annual financial reports (58%). This is because the presentation of financial highlights fulfills the semantic and visual aspects that are easy to read and understand by investors.

5 Implication and Suggestion for Future Research

The results of this study indicate that this assessment confirms [1] through a Multidimensional Quality Model (MQM) that the quality of corporate information disclosure can be measured by relevance, credibility, and readability. This has implications for companies as providers of corporate information to consider aspects of relevance, credibility, and readability in disclosing corporate information.

Furthermore, the results of this research also show that the implementation of POJK No. 8 of 2015 and POJK No. 31 of 2015 is able to reflect the quality of disclosure and transparency of corporate information disclosure, especially information for investors. However, there are several things that need to be paid attention to by the government, in this case OJK RI, namely: (1) focusing on presenting information that has a high relevance value for decision making purposes, (2) developing technical guidelines for corporate disclosure by considering the relevance, credibility and readability of information.

This study has limitations, namely the assessment given by investors may be subjective. Therefore, it needs to be developed in further research, namely measuring aspects of the quality of information disclosure: relevance, credibility, and readability in corporate information disclosure on the company's website using a quantitative approach, such as content analysis.

6 Reference


Information and Communication Technology and Its Relation to the Economy in Sumatra

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Abstract. The Covid-19 pandemic still haunts every province in Indonesia and changes the pattern of population activity. Work activities, learning, meetings, gathering, and commerce are online. Unfortunately, the carrying capacity of technology related to this new adaptation is still not sufficient and evenly distributed in every province in Indonesia. The observation area is ten provinces in Sumatera. The approach used is descriptive with the help of graphs, scatter diagrams, correlations, and empirical studies. The results found are that the development of ICT among provinces in Sumatra is not evenly distributed, the development of ICT in most provinces in Sumatra is below the Indonesian average, and there is a correlation between the development of ICT and per capita income.

Keywords: Communication, Information, Sumatra, Technology.

1. Introduction

Covid-19 was detected in 2019 and began to harm Indonesia in early 2020. The pandemic has an impact on the economy in many countries as well as Indonesia [1]. Indonesia's income growth experienced a decline in 2020 in almost all provinces. The negative impact was also experienced by ten provinces in Sumatra, their income decreased in 2020. One of the reasons was the regulations issued to limit the movement and activities of the community to reduce the spread of Covid-19.

Learning activities, work, meetings, and gatherings go online, as well as trading activities. E-commerce also experienced an increase during the pandemic with shoppers dominated by Generation Z, however, physical stores are still chosen by buyers because the goods sold are of high value [3]. Joining e-commerce channels or trading online are options that have helped medium and large enterprises during the pandemic. This effort is not followed by small and micro enterprises, due to low technology mastery, wrong perceptions about online selling methods, and the concern that delivery costs will cancel purchases [4].

Adaptations that occur during a pandemic require technological support, including the internet. The highest internet penetration in Indonesia for the period 2019-2020 (Q2) is Java (56.4%) and then Sumatra (22.1%) [5]. These values indicate a fairly wide gap between regions in the West. Because of this, Sumatra was designate as the research area.

2. Literature Review

The basic theory comes from the Cobb-Douglas production function, then used by Solow [6] in the growth model. Technological progress (A) is assumed to be given, so the impact of technology is observed with the augmented Solow growth model [7]. Technology in this study is associated with information and communication activities. Information and communication technology has a positive
effect on economic growth [7]–[9]. ICT not only has a positive impact but is also found to harm economic growth [10]. ICT also has an effect on the economy with the magnitude of the impact depending on the location and condition of the observation area [11], [12], as well as equitable access to ICT [13].

3. **Methodology and Data Analysis**

The research area is Sumatra with ten provinces, Aceh, North Sumatra, West Sumatra, Riau, Jambi, South Sumatra, Bengkulu, Lampung, Bangka Belitung Islands, and Riau Islands. Sumatra is observed because it is located in the Western Region of Indonesia, is close to Java and Singapore as growth centers, and is the second-largest contributor to the Indonesian economy. The research period is from 2017 to 2019 because of the availability of ICT development Index data issued by the Central Statistics Agency (BPS) for the provincial level.

The data used in this study is the ICT Development Index (IP_TIK) issued by BPS [14]. This data consists of three sub-indexes and several indicators with details as follows.

1. **Access and Infrastructure** measures ICT readiness through fixed telephone subscribers per 100 population, cellular telephone subscribers per 100 population, international internet bandwidth per user, percentage of households with computers, and percentage of households with internet access.
2. **Usage** describes the intensity of ICT through the percentage of individuals who use the internet, fixed broadband internet subscribers per 100 population, and active mobile broadband internet subscribers per 100 population.
3. **Skill** is the human ability to use ICT as measured by the average length of schooling, secondary gross enrollment rate, and gross enrollment rate.

The data used to refer to Kurniawati [15], Rath [7], Bahrini [10], and Maneejuk [11], based on their research that ICT has a positive or negative effect on the economy. ICT indicators are generally calculated separately, not in the ICT index, although some use the ICT index in their analysis. This paper uses the ICT index because not all ICT indicators in the empirical reference are available. The purpose of writing is answered using descriptive analysis with graphs, scatter diagrams, and correlations.

4. **Research Result and Discussion**

Technological advances in information and communication have brought human civilization to a new level. Access to information and communication becomes easier because it is always at hand. This progress allows people to continue their activities despite restrictions on mobility. Virtual face-to-face is now common for learning activities, meetings, and weddings.

An Interconnected Network or internet is one of the systems that support the advancement of information and communication. Its users continue to grow in Indonesia, with a large number still concentrated in the Java region. Sumatra during the observation period was always in second place. This can be seen in Figure 1.
Internet users by the island in Indonesia during the year of observation still showed inequality. Most users are always in Java, followed by Sumatra. Users in Sumatra until the 2020 observation year continued to show an increase. One reason is the increase in population.

![Internet User Contribution by Island 2017, 2018, and 2019 (Percent)](image)

The population is increasing as well as the number of internet users. Of the ten provinces in Sumatra, West Sumatra has the highest number of internet users out of the total population. The opposite thing happened in Lampung Province, the users in this region were the fewest compared to the total population. However, the percentage of internet users in Lampung has increased, unlike Jambi and Bengkulu, which have decreased.

Internet usage activities are highly dependent on many things, some of which are directly related to the availability and quality of information and communication technology infrastructure in each region. The condition of information and communication technology in every province of Indonesia was published by the Central Statistics Agency in 2017, under the name ICT development index.

**Table 1. ICT Development Index, Access and Infrastructure, Usage, and Skill in Sumatera 2017-2019**

<table>
<thead>
<tr>
<th>Province</th>
<th>ICT Development Index</th>
<th>Access and Infrastructure</th>
<th>Usage</th>
<th>Skill</th>
</tr>
</thead>
<tbody>
<tr>
<td>----------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>Aceh</td>
<td>4.49</td>
<td>4.69</td>
<td>4.89</td>
<td>5.27</td>
</tr>
<tr>
<td>SumUt</td>
<td>4.65</td>
<td>4.94</td>
<td>5.19</td>
<td>5.44</td>
</tr>
<tr>
<td>SumBar</td>
<td>5.00</td>
<td>5.12</td>
<td>5.24</td>
<td>5.52</td>
</tr>
<tr>
<td>Riau</td>
<td>5.08</td>
<td>5.25</td>
<td>5.33</td>
<td>5.74</td>
</tr>
<tr>
<td>Jambi</td>
<td>4.66</td>
<td>4.91</td>
<td>5.16</td>
<td>5.49</td>
</tr>
<tr>
<td>SumSel</td>
<td>4.63</td>
<td>4.81</td>
<td>4.90</td>
<td>5.20</td>
</tr>
<tr>
<td>Bengkulu</td>
<td>4.78</td>
<td>4.88</td>
<td>5.20</td>
<td>5.50</td>
</tr>
<tr>
<td>Lampung</td>
<td>4.20</td>
<td>4.50</td>
<td>4.82</td>
<td>5.15</td>
</tr>
<tr>
<td>BaBel</td>
<td>4.70</td>
<td>4.89</td>
<td>5.24</td>
<td>5.54</td>
</tr>
<tr>
<td>KepRi</td>
<td>5.89</td>
<td>6.14</td>
<td>6.39</td>
<td>6.46</td>
</tr>
<tr>
<td>Indonesia</td>
<td>4.96</td>
<td>5.07</td>
<td>5.32</td>
<td>5.59</td>
</tr>
</tbody>
</table>

Source: APJII [5] [16]
Note: 2019 period is 2019 to 2020 at 2nd quarter (Q2)

**Table 1. ICT Development Index, Access and Infrastructure, Usage, and Skill in Sumatera 2017-2019**

Source: BPS [14][17][18]
Note: High 7.26-10.00; Medium 5.01-7.25; Low 2.51-5.00; and Very Low 0.00-2.50.
The average value of the ICT Development Index in ten provinces in Sumatra is below the index value of Indonesia, and the majority are in the low category for 2017. This condition changed in 2020, they were already in the medium category. Of the three sub-indexes that make up ICT, the usage value is the smallest and is in low categories during the year of observation. The increasing number of internet users is not followed by the number of fixed and mobile broadband subscribers. This condition is thought to be related to the uneven distribution of ICT infrastructure.

The development of ICT infrastructure in Indonesia is slower than in some other countries in ASEAN, the condition is exacerbated by the inequality of ICT access between regions in Indonesia [19]. Various efforts have been made, including the construction of BTS (Base Transceiver Station) for 3T areas (outermost, underdeveloped, and leading) and the Palapa Ring for equitable broadband access in Indonesia. Satellite carrying capacity is also needed to increase Indonesia's internet speed, if infrastructure development goes well, Indonesia's internet speed in 2035 will reach 30 MB/second [20].

The various values of the ICT development index in the provinces in Sumatra provide information that there is diversity in development achievements, especially for the indicators used in calculating the sub-index. The distribution of various ICT conditions turns out to have a pattern similar to the distribution of economic conditions, this can be seen in Figure 3.

The scatter diagram for the GDRP/capita and ICT development index shows a grouping pattern with the same category. Seven provinces with low ICT development index scores also have low GDRP/capita.

**Fig. 3.** ICT Scatter Diagram with GDRP/capita in 2017-2019 in Sumatra

Note: ICT and GDRP/kapita in 2019 does not correlated.
scores. Riau and Riau Islands which have a high ICT development index also have a high GDRP/capita value. Only West Sumatra has the opposite value, high ICT development index but a low GDRP/capita. Economic growth is positively influenced by ICT for countries in Asia [15], Arab [8], European Union [9]. ICT has proven to have a positive effect in Indonesia [7]. The role of ICT in Sub-Saharan Africa has also proven to be positive in increasing per capita income, thus helping efforts to reduce poverty rates [13].

ICT as a variable is proven to affect income/capita or economic growth because it is studied together with macroeconomic variables, in other words, ICT does not work alone. Despite having a positive impact on the economy, ICT can exacerbate inequality. An increase in the number of internet users and fixed broadband subscriptions can increase income inequality. On the other hand, an increase in mobile cellular telephone subscriptions and fixed telephone line subscriptions will reduce income inequality in ASEAN-5 [21]. Technological changes may have different impacts on different regions of Europe. The impact depends on the size of the country, the stage of development, and the degree of income inequality, it can be positive or negative [22].

5. Implication and Suggestion for Future Research

The Covid-19 pandemic has changed many people's habits, business activities, work, study, shopping, and entertainment can now be done anywhere from mobile phones to computers using the internet. This condition is a way out when mobility is limited to prevent disease transmission, so special attention is needed to provide equitable internet access throughout Sumatra. The increasing number of users because the need has not been followed by good ICT development, the ICT index of the provinces in Sumatra is still in the medium category with the sub-index still being in the low to medium category.

An Economic recovery that relies on ICT will be successful if followed by accelerated distribution of quality and availability of ICT infrastructure. Unfortunately, accelerating the even distribution of ICT requires a large amount of capital, so it is necessary to think of a solution while the process is running. Things that can be considered are to take advantage of the nature of gotong-royong which has become the nation's roots. Gotong-royong is done to help those in need but has various limitations. This form of effort needs to be investigated further, it is not enough to use economic and demographic indicators but also to use social capital indicators because ICT and social capital affect the community's economy [23] and hypothetically can reduce poverty [24].

6. Reference


Family Business Evidence from Countries of Two Continents: Survival Strategy of Coronavirus Pandemic

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Abstract. The COVID-19 pandemic is forcing many businesses to close their businesses, driving major changes in various industry sectors, for example retailers and brands face various short-term challenges related to health and safety, supply chain, workforce, cash flow, consumer demand, sales and marketing [1]. In reality, several other types of business areas, including as tourism and hospitality, were virtually completely immobilized as a result of the disaster. Start-ups must also adjust by refraining from hiring. This situation is also having an impact on the family business. A family business is one in which the majority of the ownership and management is handled by the family or descendants of the family. This paper discusses a family business's survival plan during a Coronavirus pandemic affecting two continents. This article finds out that the COVID-19 pandemic has made all companies move to activate various innovations, both in terms of digital services and direct services.

Keywords: Survival Strategy, Family Business, Pandemic, Covid-19

1 Introduction

The appearance of the corona virus, which originated in Wuhan, shook the public at the start of 2020. After that, the virus spread to a number of countries, including Indonesia. President Joko Widodo declared that the first instances were discovered on March 2, 2020 in Depok, when two persons tested positive for the SARS Cov-2 or COVID-19 virus. Positive instances in Indonesia began to show up in a variety of different cities. Following VWHO's declaration of a pandemic on March 12, 2020, different governments throughout the world began implementing lockdowns to break the virus's chain of transmission.

A family business is one in which the majority of the ownership and management is handled by the family or descendants of the family. One or more family units will have a considerable effect on the direction and policies of a family business. This influence can be exerted through ownership and, in many cases, participation in administration by family members [2]. family business is defined as a combination of ownership and management, with three types of family businesses: (1) owned and managed by the family, (2) owned by the family but not self-managed by the family, and (3) managed by the family but not owned by the family.

In the business world, family businesses are a phenomena in and of themselves. According to (Susanto et al., [3]), family businesses not only employ a huge number of people, but they also contribute significantly to state revenue. Conflicts will emerge as a result of problems with the management system and the family structure when establishing a family business. However, when
the family company structure is correctly implemented, the family business can fulfill its objectives and ensure its long-term viability. According to (Bövers & Hoon, [4]), one of the problems for the sustainability of family businesses is surviving in a continually changing environment.

Entrepreneurs frequently contemplate forming a subsidiary, one of which is in the food and beverage industry, while forming a family business. Entrepreneurs take this into account since they see a significant and ongoing market potential opportunity. Food is a basic human necessity that must be addressed. This demonstrates that people must eat and finish their meals at the same time every day, and the incidence repeats again. Repeated consumption has a great market potential, resulting in high demand.

Leadership, ownership, and management principles are three major challenges that frequently occur in family businesses, both in the first and second generations (Simanjuntak, [5]). Many businesses are being forced to close due to the COVID-19 pandemic, which is causing major changes in various industries. For example, retailers and brands are facing a variety of short-term challenges related to health and safety, supply chain, workforce, cash flow, consumer demand, sales and marketing (Donthu, [1]). In reality, several other types of business areas, including as tourism and hospitality, were virtually completely immobilized as a result of the disaster. Start-ups must also adjust by refraining from hiring. Online-related enterprises such as online entertainment, online communication, and marketplaces, on the other hand, have enjoyed tremendous development.

However, the COVID-19 pandemic is causing huge changes in several sectors around the world today. The COVID-19 pandemic resulted in lockdowns that forced the closure of vital enterprises, causing a global recession and weakening the global food chain. COVID-19’s rapid growth has caused the government to take a number of steps to contain it, one of which being the designation of COVID-19 as a non-natural national disaster by Presidential Decree 12 of 2020.

Because global pandemics are the rarest sort of pandemic in human history, managing business crises arising from global health pandemics is more difficult than managing crises arising from traditional financial crises or local pandemic crises. The food and beverage business is expected to transition well; agriculture is the most concerning aspect. As a result of COVID-19’s shutdown of several vital services (such as airlines, food services, supply chains, and export and import markets), there is a severe lack of critical information to guide priority decision-making for businesses where the uncertainty is likely to be detrimental (Galanakis et al., [6]; Qingbin et al., [7]).

2 Literature Review

Marketing is a business or individual activity that involves introducing products or services to the public through various media such as newspaper advertisements, magazines, tabloids, brochures, the internet, and so on. Products and services can be purchased by customers. Marketing, according to Kotler [8], is a social and management process by which individuals and groups achieve what they need and want by creating, providing, and exchanging valuable things with others. Marketing is defined by William J. Stanton [9] as a whole system of commercial activities aimed at planning, pricing, promoting, and distributing want-satisfying goods and services to both present and potential customers.

The importance of family businesses in a country's economy cannot be overstated. However, there are hurdles in the family business to ensure the company's long-term sustainability. A family company, according to Shanker and Astrachan [10], is one that is owned by family, whether in terms
of share ownership, strategic directive control over the company, the company's founder or acquirer, family members involved in the company for one generation or more, or even the company's broad view of the family's basic objectives. In the business world, family businesses are phenomena in and of themselves. According to (Susanto et al., [3]), family businesses not only employ a huge number of people, but they also contribute significantly to state revenue.

Conflicts will emerge as a result of problems with the management system and the family structure when establishing a family business. However, when the family company structure is correctly implemented, the family business can fulfill its objectives and ensure its long-term viability. According to (Bövers & Hoon, [11]), one of the problems for the sustainability of family businesses is surviving in a continually changing environment. Entrepreneurs frequently contemplate forming a subsidiary, one of which is in the food and beverage industry, while forming a family business. Entrepreneurs take this into account since they see a significant and ongoing market potential opportunity. Food is a basic human necessity that must be addressed. This demonstrates that people must eat and finish their meals on a daily basis, as evidenced by the fact that it happened again and again. Repeated consumption has a great market potential, resulting in high demand.

3 Discussion
3.1. Survivability of Family Business

From a broad perspective, the corporation employs a marketing strategy to ensure that the program is still acceptable by the community. For example, PT Bakrie Telecom Tbk implements flexibility in adding service features for corporate customers for Call Center services, and the company also continues to develop IT Solution Services, such as developing CCTV ATM monitoring technology with the company's technology partners who are in the pre-implementation stage in two A leading banks, managing Digital Terrestrial Broadcasting Infrastructure in the TV broadcasting industry whose existence is a nascent industry. Bakrie Telecom prioritizes all efforts to address operational needs in order to be ready to rise when the pandemic time is over in order to preserve the performance of its business activities.

The pandemic has a huge impact on social life, consumer habits, and the global economy, according to (Ameen et al., 2021). Consumption patterns have evolved in unexpected and novel ways, such as widespread panic buying and consumption shifts. Indofood Corporations are impacted in this context. PT Indofood Sukses Makmur Tbk (INDF) and PT Indofood CBP Sukses Makmur Tbk (ICBP), both part of the Salim Group, have a number of initiatives in place to boost sales throughout the epidemic. The key is to increase digital media marketing and sales by releasing a lot of new products on online game applications. PT Indofood Sukses Makmur Tbk (INDF), the food and beverage company of the Indofood CBP Salim Group, has a number of plans in place to increase sales throughout the pandemic. The key is to increase digital media marketing and sales by releasing a lot of new products on online game applications.

One strategy to survive in the midst of the Covid-19 pandemic in the supermarket industry is to launch the Matahari Official Shop, which is an exclusive collaboration with Shopee, an e-commerce company with a consumer reach throughout Indonesia. additional resources to meet demand through Matahari.com, the company's online store, which has grown in popularity as a result of the pandemic. In addition, the company offers shop and talk services, which is the company's social
commercial initiative, as well as investing in relevant channels and reopening locations in non-PSBB areas while putting customer and employee safety first.

The world, including Indonesia, will be attacked by a large variant of the Coronavirus illness (COVID-19) pandemic in the start of 2020. Astra, on the other hand, is attempting to adjust to the conditions while maintaining the cornerstone of his firm. Astra developed numerous commercial strategies, including Daihatsu's launch of the New Ayla and New Sirion for millennials. Daihatsu has remained committed to launching its new products, the New Astra Daihatsu Ayla and the New Daihatsu Sirion, despite significant hurdles that have arisen since the beginning of 2020. Astra also supports the #stayathome campaign through the BMW mobile service program. Astra has launched a mobile service that allows consumers to maintain their cars at any time and from any location, on March 17, 2020.

In addition, PT. HM Sampoerna continues to develop in the cigarette market, eventually launching the first Machine-made Kretek Cigarette (SKM) product in Indonesia under the Sampoerna A brand. investment and expansion In March 2019, PT. HM. Sampoerna will launch IQOS Club Indonesia as a limited market test platform to investigate the market potential and behavior of adult smokers in Indonesia when it comes to IQOS (e-cigarettes). IQOS is still the top e-cigarette company in Indonesia as of 2021.

Based on the preceding description, it is clear that PT Gudang Garam, tbk had a drop in turnover, but the income at PT Gudang Garam, tbk gained a breath of fresh air in the next semester. This is inextricably linked to PT Gudang Garam, tbk's attention and comprehension. The attention process describes how a consumer selects from a wide set of information while ignoring the rest. The process of interpreting attention and understanding begins once customers are exposed to marketing content, whether by accident or via their own intentional action. In this section, we'll talk about attention, its levels, and the elements that drive it, as well as some marketing methods that can influence consumer attention. Generating consumer attention, or generating attention, means that a message must be able to generate attention in both the form and the medium in which it is delivered.

PT Gudang Garam also use the Knowledge in Memory technique for comprehension. Consumers' capacity to comprehend marketing content is largely determined by their ability to recall information. The degree to which intelligible meaning is formed is determined by the precise knowledge, meanings, and beliefs that are activated in a given scenario of understanding. Consumer knowledge is frequently discussed by marketing researchers in terms of competence or familiarity.

4 Conclusion

In the business world of Indonesia, family business (family business) is a distinct phenomenon. The formation of a family business will be fraught with conflict due to issues with the management system and the family structure. However, both family businesses and all sectors are currently experiencing a downturn. Because of the COVID-19 pandemic, the entire globe is changing. The COVID-19 epidemic prompted a lockdown, which forced vital businesses to close abruptly, triggering a global recession and exposing flaws in the global food system.

The pandemic of COVID-19 has prompted all businesses to implement numerous innovations, both in terms of digital and direct services. Adaptive values to numerous challenges that exist throughout this COVID-19 Pandemic are something that must be learned.
Reference


The Effect of Perceived Price, Delivery Quality and Perceived Value on Purchase Intentions Mediated by Consumer Satisfaction (Study on E-commerce In Indonesia During Covid 19 Pandemic)

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{nuzulinasnabilaa@gmail.com¹,aida.fakultasekonomi@gmail.com²,sipapaujiah2010@yahoo.com³}
Lampung University¹, Lampung University², Lampung University³

Abstract. The purpose of this research activity is to determine the effect of perceived price and delivery quality on repurchase intentions through perceived value and satisfaction as mediating variables in Indonesian e-commerce during the Covid-19 pandemic. The technique used in selecting and determining the sample is non-probability sampling. Sample 166 respondents who have made online purchases during the Covid-19 pandemic on e-commerce websites in Indonesia. The data analysis in this study uses SEM PLS to measure the direct or indirect effect of price perception, delivery of quality, the perceived value, and consumer satisfaction in forming repeat purchase intentions. The results show that perceived price and perceived value have a significant impact on satisfaction and delivery quality has no positive impact on satisfaction, but delivery quality increases when mediated by perceived value. Satisfaction also affects repurchase intention.

Keywords: The perceived price, delivery of quality, the perceived value, satisfaction, and repeat purchase intentions.

Introduction

E-Commerce During the Covid-19 pandemic, about 90 percent of internet users in Indonesia have made online shopping transactions. Seeing the high number of e-commerce transactions during the pandemic, online businesses are encouraged to provide good service and attractive offers for consumers. Focusing on the number of consumers, the seller must also gain customer trust, thereby encouraging repurchase intention.

The definition of a repurchase intention is the method of shopping for products or services from the constant enterprise. [1]. The motive for repurchase is relies heavily on a unique shopping experience. Customers develop more repeat purchase intention when consumer found value useful and hedonistic and are satisfied with purchases from the same seller before. [2]. Buyers maximize worth whereas sellers attempt to maximize customer satisfaction. The results studies [3] found that repurchase intentions are directly and indirectly influenced by perceived value which includes perceived price and also product delivery quality. Price is what is sacrificed or made clear to get a product [4]. Target price is the product's actual price, while perceived price is "the seller's perceived price level (target price) above the consumer's reference price".[5]. A reasonable perceived price has a positive effect on customer satisfaction, the consumer is more interested in getting a reasonable price
perception, which means that a value is based on what customers want in a transaction [6].

According to [7] found that fast delivery of products, returns, and refunds are important for consumers. Consumer satisfaction in e-commerce is highly dependent on timely and reliable product delivery.

Refers [8] defines perceived value as a comparison between what consumers sacrifice (perceived sacrifices) and what consumers get (perceived benefits) when buying products or services. Consumer sacrifices also take various forms, such as money, time, and effort put into buying a product.

Consumer satisfaction is considered very important in measuring the success of a business because the goal of entrepreneurs, in general, is to satisfy the needs and desires of consumers. Consumers will feel satisfied when a product or service meets their expectations. Therefore, satisfaction can mediate consumers' repurchase intentions [9].

Based on the factors described, this research can be classified into two factors namely intrinsic and extrinsic factors. Various studies have been conducted on these factors, but there are still few studies that focus on the delivery quality, which is currently in the COVID19 pandemic situation that e-commerce entrepreneurs need to interact with each other. Compete and innovate to provide high value and satisfaction to consumers. Therefore, it is important to research perceived price and quality of delivery to increase perceived value and customer satisfaction, to form an intention to repurchase.

**Literature review and hypothesis development**

**Perceived Price.** According to [10] suggests that the perception of the perceived price of the product in online purchases is that consumers believe in the quality of the products offered, based on the prices offered, the manufacturers make reasonable discounts on the prices of the offer products they market, compared to competitive prices, so consumers are satisfied with the price. The product and consumers will pay close attention to information from manufacturers about the price of the product to be purchased. Perceived pricing is subjective when customers see the unfairness of others' prices for similar products or compare perceptions of others' prices for similar products. An appropriate perceived price has a positive impact on customer satisfaction, customers are more interested in getting a reasonable perceived price, which means that the value is based on what customers want in transactions [6]. Based on the explanation above, the formulation of the hypothesis are as follows:

**Hypothesis 1:** The perceived price affects perceived value.
**Hypothesis 2:** The perceived price affects satisfaction customers.

**Delivery Quality.** [11] regarding how delivery affects satisfaction, it was found that: (1). Delivery choices directly impact key customer ratings, including repeat purchases and, (2). Retailers invest in delivery options and anticipate changing customer expectations where current delivery options will become the norm in the future. Consumers also expect fast deliver, changes for orders, cancellations, product returns, and refunds [12]. Referring to [7] found that timely product delivery, product returns, and refunds are very important when consumers are dissatisfied. E-commerce consumer satisfaction largely depends on the timely delivery of reliable products and services. [13]. Delivery of
quality is increasingly recognized as an important factor influencing variable perceived value, satisfaction, and repurchase intentions [14]. Based on the reason above, the formulation of the hypothesis such as:

**Hypothesis 3:** Delivery quality affects perceived value.

**Hypothesis 4:** Delivery quality affects the satisfaction of the customer.

**Perceived Value.** The consumer's perception of value is a very useful framework in a variety of situations and provides a wide range of insights. This suggests that to understand how the company's offering resonates in the minds of consumers, the seller must assess the total customer value and total customer cost associated with each competitor's offering. The aggrieved seller has two alternatives, increasing the customer's overall profit or reducing the overall cost. The first requires strengthening or increasing the economic, functional, and psychological benefits of the product, service, staff, and image of the offer. The second requires reducing consumption costs, the way is to reduce prices or operation and maintenance costs, simplify the ordering and delivery process, or absorb part of the buyer's risk by offering guarantees. [9].

Referring to [15] it appears that the perceived value is not only linked to the perceived price, but also to the perceived quality of the product and the intention to repurchase. There is an ongoing debate as to whether or not value and satisfaction represent the same thing. Referring to previous research perceived of value also satisfaction can be measured as two distinct. [16].

**Hypothesis 5:** The Perceived value affects satisfaction on the customer.

**Hypothesis 6:** The perceived value affects repurchase intention to customer

**Satisfaction.** Customer satisfaction is the customer's perception of the performance of a product or service relative to their expectations. If the performance or experience is not as expected, the customer is dissatisfied. If it meets expectations, the customer is satisfied. High satisfaction leads to high customer loyalty, so companies need to ensure they meet and exceed customer expectations. [9]. Researchers have been proven that satisfaction is the most important variable factor in repeat purchases when shopping online. [17].

**Hypothesis7:** Customer satisfaction affects repurchase intention

**Repurchase Intention.** The process of purchasing individual goods or services from the same company on behalf of repurchase intent [1], and the reasons for repurchasing are based primarily on previous purchase experiences. Customers will develop a strong motivation to repeat purchase intent when they find value (both useful and hedonistic) and are satisfied with purchases before from the same vendor [2]. Competitive advantage in the marketplace must have customer retention to get profits. [18]. Online sellers need to be aware of consumers' repeat purchase intentions as they only need a few purchases from one customer to be profitable throughout the process. Customer lifecycle it also takes more time to work with new customers online than it does to keep them. Therefore, repeat purchases are essential for e-commerce success.
Research Model

Figure 1. Research Model

Methodology and Data Analysis

Population and Research Sample. The population of this study is all consumers who bought products online on e-commerce websites in Indonesia during the COVID19 pandemic. The sample is part of the population revealed that research using regression analysis and SEM methods must have a minimum number of samples five times the number of questions in the questionnaire. So the total number of questionnaires in this study used 166 consumer respondents who shop online in e-commerce. The technique used to select and determine the sample is non-probability sampling. Non-probability sampling is a sampling technique that does not provide equal chance that every element or member of the population will be selected as a sample. The researcher used a purposive sampling technique with the following response criteria such as:

- Consumers with a minimum age of 17 years 34 years (based on a survey conducted by the Association of Internet Service Providers of Indonesia said the composition of most Internet users is 17-34 years old)
- Online shopping experience on online shopping sites e-commerce in Indonesia (purchase period is during the COVID19 pandemic)
- Have a device with an internet network to access the site (mobile/computer/laptop)

Data Analysis Techniques.

In this study, the SEM method of partial least squares (PLS) was used. SEM PLS can also analyze reflective and formative measurement patterns as well as latent variables. PLS-SEM can work efficiently with small samples and complex models. Furthermore, the spread of data assumptions in PLS-SEM is relatively wider, and formative and reflective measurement models of latent variables can also be analyzed with an indicator without encountering identification problems[19]. Analysis stages when using SEM Partial Least Square. According to [20], suggesting several stages that are passed to evaluate the model structurally, the first by conducting a multicollinearity test, followed by analyzing the relationships in the model and estimating the predictive ability of the model. The first stage after testing validity and reliability is to ensure the degree of collinearity.
Research Result and Discussion

Pre-Test (Pre-Test). At the beginning of this study, a pretest was conducted for 30 respondents. It can be seen that all research indicators (18 indicators) meet the validity test criteria, this is indicated by the factor load value which has a value of 0.5. After testing the validity, then testing the reliability of the constructs that will be used in the study. All instruments in this study are also reliable with a value of 0.4.

PLS Test Results
In this main study, re-testing was carried out for the accuracy and consistency of data on 166 respondents who used e-commerce in their purchases. Next, test the hypothesis. In this test, further data processing uses the PLS analysis method for testing hypotheses 1 to 7.

Partial Least Squares. Testing the results of the study using partial least squares test hypotheses 1 to 7 using the WarpPLS 7.0 program. The results obtained by the general result can be seen in Table 1, the model has a good fit, where the P-value for the average path coefficient (APC) and the average R-squared (ARS) are P>0.001, which means less than <0.05. Also, the resulting average variance inflation factor (AVIF) is 1.648, which means <5. This shows that there is no multicollinearity problem between independent (exogenous) variables. The number of iterations to get is six estimates.

Table 1. General SEM Analysis Result

<table>
<thead>
<tr>
<th>Model fit and quality indices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average path coefficient (APC)=0.339, P&lt;0.001</td>
</tr>
<tr>
<td>Average R-squared (ARS)=0.404, P&lt;0.001</td>
</tr>
<tr>
<td>Average adjusted R-squared (AARS)=0.392, P&lt;0.001</td>
</tr>
<tr>
<td>Average block VIF (AVIF)=1.648</td>
</tr>
<tr>
<td>Average full collinearity VIF (AFVIF)=1.893</td>
</tr>
<tr>
<td>Tenenhaus GoF (GoF)=0.422</td>
</tr>
<tr>
<td>Sympon's paradox ratio (SPR)=1.000</td>
</tr>
<tr>
<td>R-squared contribution ratio (RSCR)=1.000</td>
</tr>
<tr>
<td>Statistical suppression ratio (SSR)=1.000</td>
</tr>
<tr>
<td>Nonlinear bivariate causality direction ratio (NLBCDR)=1.000</td>
</tr>
<tr>
<td>Outer model analysis algorithm: PLS regression</td>
</tr>
<tr>
<td>Default inner model analysis algorithm: Warp3</td>
</tr>
<tr>
<td>Multiple inner model analysis algorithms used? No</td>
</tr>
<tr>
<td>Resampling method used in the analysis: Stable</td>
</tr>
<tr>
<td>Number of data resamples used: 100</td>
</tr>
<tr>
<td>Number of cases (rows) in model data: 100</td>
</tr>
<tr>
<td>Number of latent variables in the model: 5</td>
</tr>
<tr>
<td>Number of indicators used in the model: 18</td>
</tr>
<tr>
<td>Number of iterations to obtain estimates: 6</td>
</tr>
</tbody>
</table>
Path Coefficient.

The path coefficient and p-values show that price perception has a significant impact on value perception with a p-value < 0.001 and a path coefficient value of 0.326, price perception has a significant impact on satisfaction with a P-value <0.001 and path coefficient value of 0.251, significant impact of delivery quality on perceived value with P-value of 0.001 (<0.05) and path coefficient value of 0.57. Delivery quality has no significant impact on satisfaction at a P-value of 0.15 (<0.05) and a path coefficient value of 0.081, the perceived value has a significant impact on satisfaction at a P-value of <0.001 and a path coefficient value of 0.521, the perceived value has a significant impact on repurchase intent with a P value <0.039 (<0.05) and a path coefficient value of 0.13. Satisfaction has a significant impact on repeat purchase intentions with a P-value < 0.001 and a path coefficients value of 0.673. The results of the WarpPLS 7.0 path coefficients are shown in the table below.

Table 2. Path Coefficient

<table>
<thead>
<tr>
<th>Perceived Value</th>
<th>Delivery Quality</th>
<th>The Perceived Value</th>
<th>Satisfaction on customer</th>
<th>Repurchase Intention</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.326</td>
<td>0.567</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction</td>
<td>0.251</td>
<td>0.081</td>
<td>0.521</td>
<td></td>
</tr>
<tr>
<td>Repurchase Intention</td>
<td>0.13</td>
<td>0.673</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3. P-value

<table>
<thead>
<tr>
<th>Perceived Value</th>
<th>Delivery Of Quality</th>
<th>Perceived of Value</th>
<th>Satisfaction Customers</th>
<th>Repurchase Intention to customer</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction</td>
<td>&lt;0.001</td>
<td>0.146</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Repurchase Intention</td>
<td>0.039</td>
<td></td>
<td>&lt;0.001</td>
<td></td>
</tr>
</tbody>
</table>
**Hypothesis Test Result.**

*Table 3.* hypothesis test results using Wrap PIs 7.0

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>P-Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1 Perceived price affects perceived value</td>
<td>P&lt;0.001</td>
<td>Data Supports H1</td>
</tr>
<tr>
<td>H2 Perceived price affects satisfaction customers</td>
<td>P&lt;0.001</td>
<td>Data Supports H2</td>
</tr>
<tr>
<td>H3 Delivery quality affects perceived value</td>
<td>P&lt;0.001</td>
<td>Data Supports H3</td>
</tr>
<tr>
<td>H4 Delivery quality affects satisfaction customer</td>
<td>P&lt;0.15</td>
<td>Data Not Support H4</td>
</tr>
<tr>
<td>H5 The perceived value affects the satisfaction of the customer.</td>
<td>P&lt;0.001</td>
<td>Data Supports H5</td>
</tr>
<tr>
<td>H6 The perceived value affects repurchase intention</td>
<td>P&lt;0.04</td>
<td>Data Supports H6</td>
</tr>
<tr>
<td>H7 Customer satisfaction affects repurchase intention</td>
<td>P&lt;0.001</td>
<td>Data Supports H7</td>
</tr>
</tbody>
</table>

**Discussions**
The data support hypotheses H1, H2, H3, H5, H6, and H7, while H4 with a p-value <0.15 (<0.05) does not support that delivery quality has no positive effect on satisfaction and a value coefficient of 0.08. This study shows that when delivery quality is mediated by perceived value, this affects satisfaction, it can be seen that there is a p-value <0.001. So in this study, the quality of delivery, if it exceeds the perceived value, quality of delivery will increase.

**Conclusion**
Online shopping during the COVID-19 pandemic increased due to a ban on offline shopping which had an impact on e-commerce. Seen in this study shows that the factors that form repurchase intention are influenced by perceived value, perceived price, delivery quality, and satisfaction. It’s just that the quality of delivery does not directly affect satisfaction. But if it is mediated by the perceived value variable, the quality of delivery affects satisfaction. This study means that the quality of delivery will increase if it passes through the perceived value to achieve consumer satisfaction shopping in e-commerce.

**Implication and suggestion future research**
This research still has some limitations and barriers, so it needs to be improved for future research. Here are some suggestions that are possible for e-commerce companies or to be applied to further research, namely further research is expected to be carried out by adding questionnaire indicators to add questions and increase shopping samples in e-commerce. Practitioners who have online stores must also pay attention to the quality of existing deliveries so that later they can have a direct effect on consumer satisfaction when shopping online in e-commerce.
References


2003.


Behavioral Intentions and E-WOM (Electronic Word of Mouth) in Indonesia E-commerce

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Abstract. The e-commerce industry is one of the most promising and growing industries in Indonesia, this can be seen from the increasing number of e-commerce users, high CAGR, and GMV. However, Indonesia faces lots of problems such as a high level of dissatisfaction with online experience, poor logistics networks, low access to financial services, slow internet connection, poor cybersecurity, and complaints submitted by customers. This study aims to study the effect of access, transaction, and possession convenience on online convenience, online convenience on online customer satisfaction, and online customer satisfaction on behavioral intentions and E-WOM. The research model of this study is modified from the previous research. This research uses WarpPLS 7.0 to test the relationship between variables. The results of this research show that all hypotheses are accepted with customers tend to do positive E-WOM and have positive intentions. This can also be another reference for future research.

Keywords: Online convenience, online customer satisfaction, behavioral intentions, E-WOM

1 Introduction

The E-commerce industry has many potentials to be developed in the future that is not limited to age, gender, or location. Eshopworld data showed that Indonesia entered the top five in terms of the number of online buyers with Indonesia in fourth place (107 million) and CAGR growth rate in 2018 – 2022 in third place (16.6%) [1]. Indonesia also had a high e-commerce adoption rate of 88% compared to 74% as the average rate worldwide and m-commerce adoption rate in January 2020 by 80% compared to 52% as the average rate worldwide [2]. It was found that Indonesia had the fastest e-commerce growth in the world in 2018 by 78% together with the increase of internet users [3] and had the largest contribution to GMV (Gross Merchandise Value) for about $21 billion in 2019 (e-commerce) in Southeast Asia [4].

On the other hand, Indonesia’s online commerce also faces lots of problems and challenges such as poor logistics networks and poor logistics infrastructure, people who have access to financial services plus credit card and debit card ownership rates are low, poor cybersecurity, the ownership rate of online payment and ordering systems of MSMEs is low due to a lack of knowledge and time to learn about online commerce, poor human resources, and lack of start-ups [5]. There were also many complaints submitted by customers to YLKI (The Indonesian Customer Institution Foundation) regarding Indonesia’s e-commerce problems that they felt for example goods that are not received, refunds, inappropriate product specifications, transaction systems, fraud cases, account hijacking cases, and others [6]. User experience on the website, time taken to deliver items, payment process, product selection, product quality, return policy, customer service, and price of items were also things that customers dislike in Indonesia [7].
Access convenience is considered important because it is closely related to the easiness of accessing a service or website and experience it directly [23]. The advantage in terms of ease of access is that consumers can access any products or stores, making them comfortable in shopping online because it requires less time and energy and avoiding long queues or crowds [24]. Previous research conducted showed that access convenience affects online convenience [23][25]. Therefore the first hypothesis is:
H1: Access convenience has a positive and significant effect on online convenience.

Security in transactions must be considered so consumers feel comfortable and the availability of various payment methods to make it easier [9]. Clear information must be informed regarding the success or failure of a transaction and ordered products to increase convenience and reduce doubt/fear [13]. Previous research conducted showed that transaction convenience has a positive and significant effect on online convenience [23][25]. Therefore the second hypothesis is:
H2: Transaction convenience has a positive and significant effect on online convenience.

Providing information to consumers about the delivery and the received products could increase the level of engagement with consumers [9]. This must be considered because shopping online provides various advantages compared to traditional methods where consumers have to go to the store. The product must also arrive at the time promised [13] so that a comfortable feeling arises. Previous research conducted showed that possession convenience has a positive and significant effect on online convenience [23][25]. Therefore the third hypothesis is:
H3: Possession convenience has a positive and significant effect on online convenience.

One of the most important factors in customer satisfaction is convenience in online stores [26]. By reducing the effort and time needed, consumers can feel comfortable and satisfied, this leads to competitive advantages over other companies [23]. The services provided must be comfortable and easy for consumers to feel the benefits of these services that can lead to satisfaction [27]. Previous research conducted showed that convenience has a positive and significant effect on customer satisfaction [23][28][29]. Therefore the fourth hypothesis is:
H4: Online convenience has a positive and significant effect on online customer satisfaction.

Higher customer satisfaction can create an emotional connection which can also result in consumers spending more on a brand [30]. After using a product or service, consumers give an assessment of what they received with what they expected. If they are satisfied, they will tend to re-use the product or service even recommending it to others [31]. Previous research conducted showed that customer satisfaction has a positive and significant effect on behavioral intentions [23][32][33]. Therefore the fifth hypothesis is:
H5: Online customer satisfaction has a positive and significant effect on behavioral intentions.

Companies must consider customer satisfaction due to the development of the internet which can be a channel for consumers to share their experiences, (positive or negative) [30]. Satisfied consumers will encourage themselves to share their experiences [34] about the company and its products or services as a form of appreciation to the company or the brand. Previous research conducted showed that customer satisfaction has a positive and significant effect on E-WOM [23][34][35]. Therefore the sixth hypothesis is:
H6: Online customer satisfaction has a positive and significant effect on E-WOM.

2.9 Research Model

The research model is modified from the previous research [23] due to the differences in countries. There is a complete difference between the level of education in Portugal and Indonesia (higher in Portugal), this could be related to determining which e-commerce will be used based on some criteria (more critical). People in Portugal tend to be more loyal and only make purchases based on their needs [36]. It is different from people in Indonesia who are easily
attracted to promotions and disloyalty. Even they also shop at e-commerce from other countries to find cheaper prices [37]. It can be seen that people in Indonesia do not prioritize the e-commerce they used, while people in Portugal can be loyal to e-commerce if it has its own value. Because of these, search convenience, evaluation convenience, attentiveness convenience, and post-possesson convenience are considered less relevant for this research that will be done in Indonesia. The research model can be seen in figure 1.

Fig 1. Research Model (Modified from [23])

3 Methodology and Data Analysis

This research collected data by distributing the questionnaire to respondents. 138 respondents were collected as a sample using judgment sampling. The criteria for respondents are the respondent who has used e-commerce to shop online before in Indonesia. Likert scale is used to measure all of the variables ranging from 1 (strongly disagree) to 5 (strongly agree). The tests are carried out using WarpPLS 7.0.

4 Research Result and Discussion

4.1 Research Results

From the respondents collected, it shows that the majority of respondents are 18–24 years old and the e-commerce that is mainly used is Shopee and Tokopedia. The analysis of validity was carried out and showed that all of the indicators have factor loading > 0.7, AVE > 0.5, and have good discriminant validity value. The analysis of the reliability and the fitness of the model was also carried out and showed that all of the variables are reliable and the model is fit.

An analysis of the hypothesis was also carried out and the results are all of the hypotheses are accepted with a P-value < 0.05 and the value of r-squared for online convenience is 0.57, 0.38 for online customer satisfaction, 0.32 for behavioral intentions, and 0.31 for E-WOM.

4.2 Discussion

4.2.1 The Effect of Access Convenience on Online Convenience

The strength of the relationship between access convenience and online convenience is 0.383 with a P-value of <0.001, therefore the first hypothesis is accepted. E-commerce has the ability to provide access while also allowing consumers to shop easily regardless of time, location, gender, or age, and access to various products. This research was also carried out when the COVID-19 pandemic occur which means that there is also a mass shift from consumers to shop from e-commerce therefore e-commerce must be able to provide access to shopping online. Some respondents also agreed that it is easy and convenient enough to access e-commerce, a simple yet tidy homepage is needed to make a positive impression for customers.

4.3.2 The Effect of Transaction Convenience on Online Convenience

The strength of the relationship between transaction convenience and online convenience is 0.404 with a P-value of <0.001, therefore the second hypothesis is accepted. With the ease of transactions, it can make consumers feel comfortable and can complete payments for their purchases quicker. The availability of payment methods must also be varied to enable
consumers to choose payment methods according to their preferences. Some respondents also think that the transaction process in e-commerce is already convenient and easy enough.

4.2.3 The Effect of Possession Convenience on Online Convenience

The strength of the relationship between possession convenience and online convenience is 0.123 with a P-value of 0.045, therefore the third hypothesis is accepted. The logistics network and infrastructure in Indonesia face lots of problems due to its geographical conditions. On the other hand, Indonesia continues to develop and improve this by building proper facilities and infrastructure such as road access and ports to support the logistics sector. Some respondents also felt that they have experienced some problems such as late delivery, damaged goods, and order status on e-commerce that is not being updated. E-commerce must collaborate with logistics/courier companies to reduce time and effort in obtaining a customer’s desired products.

4.2.4 The Effect of Online Convenience on Online Customer Satisfaction

The strength of the relationship between online convenience and online customer satisfaction is 0.618 with a P-value of <0.001, therefore the fourth hypothesis is accepted. By creating a positive experience when shopping in e-commerce, it could lead to a higher level of online customer satisfaction which also means that e-commerce has an advantage over others. Some respondents also felt that it is convenient enough to shop in e-commerce, which could lead to higher satisfaction that could result in positive behavior in the future.

4.2.5 The Effect of Online Customer Satisfaction on Behavioral Intentions

The strength of the relationship between online customer satisfaction and behavioral intentions is 0.563 with a P-value of <0.001, therefore the fifth hypothesis is accepted. Higher satisfaction can make customers do a certain positive behavior in the future as a form of appreciation to the e-commerce for a product or service that has been given. Some respondents also stated that if they are satisfied with e-commerce, it can make them use the e-commerce more often or repeated purchases, and others.

4.2.6 The Effect of Online Customer Satisfaction on E-WOM (Electronic Word of Mouth)

The strength of the relationship between online customer satisfaction and E-WOM is 0.559 with a P-value of <0.001, therefore the sixth hypothesis is accepted. Online review is the most influential factor when deciding to purchase. Reviews provided by consumers can be in the form of images or videos to make it more convincing and generally satisfied consumers express them more detail while also include emotional elements. If customers are satisfied with what they felt, the tendency to provide good ratings or reviews will also appear.

5 Implication, and Suggestions for Future Research

There are several managerial implications for e-commerce in Indonesia, in terms of possession convenience to improve online convenience, e-commerce should provide clear and complete delivery status notification by collaborating with logistics companies and providing a live tracking feature, a chat feature with the courier, or access to the logistic website. In terms of online customer satisfaction to improve behavioral intentions, a lottery system or online stamp can be done, plus e-commerce must pay attention to special days such as customers’ birthdays or events by giving coupons/discounts. In terms of online customer satisfaction to improve E-WOM, a review feature to assess the service of the seller such as politeness, assistance, and others. Rewards for sharing on social media can also be given.

In terms of access convenience to improve online convenience, a content delivery network (CDN) can be used to increase the speed of loading pages or using web hosting and cloud computing. In terms of transaction convenience to improve online convenience, add more e-wallet options, implement cashless payment for COD, and provide a detailed electronic receipt. Lastly, in terms of online convenience to improve online customer satisfaction, provide
originality checks for the products sold, a recommendation for a good product posting, product comparison feature, and live chat feature improvements by using AI chatbot.

This research has several limitations such as a small number of respondents and the majority of the respondents are 18 – 24 years old, further research could spread the questionnaire to various ages which could also affect the assessment of each variable and their relationship. It is recommended that further research can add more variables related to online convenience based on the research location or others.

6 Reference


Role of Entrepreneurship Education, Pragmatic Thinking, and Entrepreneurial Self-Efficacy on Triggering Students' Entrepreneurship Intention: Testing Moderation and Mediation Effects

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Abstract. The study aims to contextualize and examine the intervening role of Entrepreneurial Self-Efficacy (ESE) beliefs in the relationship between entrepreneurship education (EE) and entrepreneurial intentions (EI) of Hospitality and Tourism (H&T) students. Based on extensive research in social cognitive and human capital theory, we argue that the relationship between EE and EI among students is mediated by their respective ESE and not directly but has a moderate effect on pragmatic Thinking (PT). We survey 165 students who have completed an entrepreneurship course at a prestigious and highly ranked H&T institute in India. The empirical study findings indicate that advocating for a rigorous entrepreneurship curriculum increases ESE and considerably increases EI among H&T students.

Keywords: Entrepreneurial SE, entrepreneurship education, pragmatic thinking, entrepreneurship intention

1. Introduction

Does EE foster student entrepreneurial intent? If so, how does it do so? This is since while existing scientific literature in entrepreneurship provides insights into the EE-EI relationship [1], [2], the indication radiates from previous studies on the nature and extent of the EE-EI correlation is still largely undefined. These topics have become more important for researchers. As an antecedent to student EI, several researchers have found little evidential basis for EE [3], [4]. Other research demonstrates a favourable and statistically significant connection between EE and EI [5]–[7] The mixed findings of studies on the EE-EI relationship suggest that students need more
than a cursory understanding of EE to elicit positive EI. As a result, educational institutions must revisit fundamental foundations. However, research on the EE-EI relationship has yielded mixed results. Our study is based on an empirical meta-analysis by [1] that justified a positive significant EE-EI correlation and support that students' satisfaction with a well-designed and operationalized EE programme is high.

Furthermore, we investigate the 'underlying processes' that explain the EE–EI connections using the intervening variable of ESE and PT as a proxy for the relationship. There are various reasons why we choose to concentrate on H&T EE, EI, ESE and PT in our conceptual framework.

The systematic review of entrepreneurship studies in H&T [8] identifies several individuals and environmental variables that promote H&T entrepreneurship. It is considering that entrepreneurship has shown to be a powerful driver of new and original concepts, economic progress, and employment creation within the H&T sector [8], [9] few of the factors that have shown positive EI in H&T professionals are personal characteristics (e.g.,[10] socioeconomic variables [11] and Institutional environmental influences that directly impact H&T motivating factors [12], socio-cultural [13]. However, poorly planned, and operationalized EE programmes would negatively affect students' entrepreneurial and EI orientations [14].

This research aims to investigate the intervening function of ESE in the H&T, EE-EI connection. Specifically, despite the expected beneficial effects of high-tech education on students' emotional intelligence, scholars contend that the hypothesized positive correlation between these two concepts may not be direct but instead could be mediated by cognitive factors [15], [16]. Self-Efficacy (SE) is conceived as an individual's self-belief in their skills to do the job effectively [17]. It is heavily influenced by social cognitive theory [17]. ESE is defined as the extension of SE (i.e., innovative and acquiring knowledge) perceptions to the areas of establishing a business enterprise or other related entrepreneurial findings [9], [18], [19]. As a result, this research hypothesizes that positive student perceptions of the EE programme operationalized by their institution would promote ESE among students, which will, in turn, increase EI in students.

Lastly, we focus on Pragmatic Thinking (PT), as education occupies a fundamental place within a pragmatic paradigm. Because being Pragmatism seeks to translate relevant information about real-world problems into action, individuals must continually learn new knowledge and abilities to deal better with their circumstances. The purpose of education is to develop new competencies appropriate for everyday situations frequently, or "instead of repeating existing habits, better habits will be developed, and so the future adult society will be an improvement of its own" [20]. Education begins with determining why and what one should learn and the purpose of applying the knowledge [21].

The pragmatic approach to education is staunchly opposed to transmission-style instruction. Proper education occurs via growth and expansion from intellectual inquiries into the environment [22]. The instruction focused not on the subject itself but on training students to employ correct procedures and think and act independently in response to their uncovered discoveries.

2. Literature Review

2.1 Entrepreneurial Education

The word 'entrepreneur' sparsely came into existence in the 1980s in higher education [23]. Since then, entrepreneurship education has seen many transformations from simply learning through
classrooms to practising entrepreneurship as part of the course curriculum. As emphasized by [24], EE aims to make the students gain multiple skills, passion, values, and competencies that help them organize and establish their own business. Also, EE can assist students in handling problems with much ease [25]. In its broader perspective, EE synthesizes students' creativity, divergent thinking, and imagination, encouraging their conceptual skills and thinking abilities to foresee the change as an opportunity [23].

However, preliminary literature emphasizes the role of personality and psychological characteristics to be an entrepreneur [26]. Still, the temporal flow of literature strongly reports the part EE plays in processing entrepreneurship-related facets required by an individual [27]. Activities to create PT [28], [29], industry ties [30], the concept of venture creation [31], course creativity [32] had been an area of focus in the latest field of knowledge in building intentions towards entrepreneurship but required deeper investigation and systematic approach to be included in the teaching methodology.

A recent body of literature that acknowledges EE significance in educational institutions emphasizes that the formal education system must be supplemented with institutional support [16], [33]–[35]. Following this, curricular and extracurricular activities to impart PT as components of EE became popular and remained focal in research after that. As mentioned by [35], curricular activities include courses enrolment, teaching pedagogy used, course curriculum and number of practical classes etc., to name a few. In contrast, extracurricular activities comprise all facilities extended at the institutional level, including entrepreneurship cells, incubators, industrial visits, business simulators, etc.

2.2 Entrepreneurship Education and Entrepreneurship Intention

A positive link between EE and EI is documented widely in the literature on entrepreneurship [1]. EE was proven to be a good precursor of entrepreneurship in a study [5] on Iranian individuals exposed to an entrepreneurship training course. It was discovered in this study that a variety of factors, including institutional (such as employee engagement and Training), societal (such as status and social norms), an individual (such as fears of being undesirable and SE beliefs), influences EI. As a result, robustly designed EE programmes are expected to expose students to the necessary entrepreneurial knowledge, skill sets, and proficiencies through conventional and creative educational practices [36]. A similar vein of research was conducted by [6], who drew heavily on the theory of Planned Behaviour. Consequently, the following theory is put forth:

Hypothesis 1: The H&T EE will have a positive and substantial impact on students' EI.

2.3 Entrepreneurship education and entrepreneurship SE

ESE is formed when SE beliefs are extended to creating a new business endeavour or other relevant entrepreneurial objectives [18]. To the assertive, entrepreneurship is a voluntary endeavour. Due to their high-risk propensity, locus of control, creativity, inventiveness, and limited rationality, entrepreneurs oppose and try to invalidate the impacts of unpredictable and complex business settings. After all, ESE is anticipated to act as a significant influence in the success of entrepreneurs in implementing their concepts [37]. Therefore, it has been discovered that ESE has a substantial impact on a wide range of entrepreneurial intentions, including but not restricted to entrepreneurship-related emotions (EI), behaviour (entrepreneurial behaviour), effectiveness (entrepreneurial quality), and firm-level results [38]. Aware of the significance of ESE, available
environmental fellowship in the realm of entrepreneurship situations variables such as work experience, development and skills, mentors, personality factors, innate knowledge, political and national environment, and ecosystem as key antecedents to ESE [38]. So, we propose the following theory.

**Hypothesis 2:** Entrepreneurship education positively and significantly related to entrepreneurship SE.

### 2.4 Entrepreneurial SE and Entrepreneurial intention

The concept of SE is understood regarding the social cognitive theory, which establishes links between SE and behaviour, especially with its feature of inducing perseverance among individuals under challenging times [17]. An individual having sufficient SE would possess sound decision-making capabilities [39]. Persons who possess high efficacy are ready to face challenges and should show more increased endurance during such times [40]. Besides, such individuals preferably take obstructions as learning steppingstones rather than mere failures [41].

One of the first attempts to assess EI was made by Shapero in 1982, with his Entrepreneurial Event (1982) and Ajzen's theory of planned behaviour (TPB), (1987). These are two of the most influential attempts to evaluate entrepreneurship goals. Even though they are mostly consistent, the TPB model places a greater emphasis on the individual's environmental role to be an entrepreneur, whilst the former emphasizes the individual's proactiveness [42]. The TPB was founded on the premise that three aspects (a) a person's attitude (b) societal norms (c) and perceived behaviour control) are responsible for driving entrepreneurship ambitions to act eventually.

[43] found that increasing students' EI also increased their level of EE, thereby fully mediating the relationship between formalized EE perceived learning outcomes and EI. Furthermore, [44] investigated the impacts of EE on students' EI in visegrád countries and concluded that the program's impact was limited to the one country included out of four. Furthermore, the findings from this study imply that there is an indirect association between the constructs of EE and EI. In other words, the results indicate that ESE is partially responsible for bridging the link between two. Therefore, it is proposed that:

**Hypothesis 3:** Students' ESE positively impacts EI.

**Hypothesis 4:** ESE mediate positively in relationship between EE and EI.

### 2.5 Entrepreneurship education and Pragmatic Thinking

Education is becoming increasingly important in today's world. The university education system is being stretched to meet the growing demand for entrepreneur students with a college diploma or equivalent are more likely to be innovative, use modern business practices, and build businesses around cutting-edge technology [45]. Academic education provides students with the opportunity to observe the most recent advancements in their chosen area, enabling them to understand better how to integrate these developments into a company in the future [46]. Several studies emphasize the critical nature of involving students in real-world business initiatives to instil the necessary job skills and attitudes. The interpretative and functionalist paradigms of social sciences discussed by [47] answer EE's issues with PT.

Peirce (1939–1914), James (1842–1910), and Dewey (1859–1914) founded the American Pragmatist philosophy. Their pragmatism theory is often regarded as the most significant contribution of American Thinking to contemporary philosophy [48]. As Mounce puts it, the founders of Pragmatism were "against those kinds of scientism that emerged in the nineteenth
century and were variously characterized as Scientific Rationalism, Materialism, or Positivism" (1997, 2). Nonetheless, in the latter half of the twentieth century, scientism and positivism started to control present study in general, as business education institutions sought "academic legitimacy" through "the acceptance of current theories based on experimentalism and data analysis" [49], [50]. Given scientism's prevalence in current management and entrepreneurship studies, it's intriguing that we should discover reasons to doubt scientism's supremacy inside philosophical thinking.

Pragmatism assumes that not fully developed or 'correct' theory of any aspect of life exists. The complexity of reality prevents complete comprehension of any part of it. As a result, knowledge about entrepreneurship, or any other aspect of the social realm, must be developed to guide characters as they face the reality of the universe. According to [51], Pragmatism's guiding premise is that truth is a growth in the capacity to act concerning an environment, not an accurate "picture of reality in cognition." James describes theories as "mental adaptations to reality, rather than discoveries about the universe," quoted by [52]). Dewey stated plainly that "the purpose of knowledge is not to reflect the world but to deal with it" ([48], 177).

A pragmatic realism focuses on neither deep-level generating mechanisms nor surface-level narratives. The organization promotes social ideas to improve human behaviour. According to pragmatic social science, scientific research into the social world produces narratives about how "institutional logics" work. These accounts are not meant to lead to a scientific conclusion. A group's goal is to help people "gain experience" in social situations to handle challenges better. The experiences define the situation. To learn about any human influence requires immersion in the world where it occurs. We urgently need more ethnography until we better grasp "how things work" in reality. [29].

Therefore, we proposed the following:

**Hypothesis 5: PT positively moderate relationship between EE and ESE**

### 3. Method and Data Analysis

Once the research concept and hypothesis have been clearly defined, the research design is the first stage in organizing and arranging the research process. Concerning research design, the best research strategy is required to achieve the most accurate possible outcomes [53]. The study employs a descriptive design to understand participants' perceptions of the current state of EE on HT undergraduates' EI. This method seeks to pinpoint specific events, people, and situations. Moreover, the researcher does not manipulate or control the variables in this study; they are only observed.

Secondly, a paradigm can be defined as a cluster of shared convictions and assumptions which include several issues like methods, methodology, epistemology, and ontology within a community of research [54]. There are two types of research paradigms: positivism and interpretivism. The current study adopts a positivism research paradigm since a questionnaire approach is employed to collect the data relevant to the study. Moreover, this paradigm is more suitable for the study because the researcher works on observable reality and develops generalizations. Also, positivism is associated with the facts and deals with the pure data rather than being influenced by manipulations and biases [55].

The current study involves the collection of primary data using a questionnaire approach. Moreover, since a questionnaire is engaged in data collection, a quantitative research approach is adopted. The path to quantitative analysis is connected to the empirical principles [56] The relation between variables is defined by several scientific techniques within this research process. In addition, the
elements are combined, listed, and translated into measurable aspects in the quantitative analysis method.

Moreover, a questionnaire survey is conducted among Hospitality-Tourism Undergraduates to understand their perception of the impact of EE on PT, SE, and finally, entrepreneurial intention. The current study used purposive non-probability sampling to understand 165 HT undergraduates' perceptions of the study context. Purposive sampling selects units based on the researcher's judgement. Thus, this sampling technique is suitable for the current study because it helps the researcher draw generalizations from the sample [57].

Entreprenurship Education: For this study, the questions on EE are inspired and contextualized from the work of [58], [59]. We included seven items to measure student perceptions on the institutional dimensions of EE.

Entrepreneurial SE: For this study, the questions on ESE are inspired and contextualized from the work of [18], [19], [60]. We included twelve items to measure student perceptions on ESE.

Entrepreneurial Intentions – The construct of EI was assessed using four items. For this study, the questions on EI were inspired and contextualized from the work of [19], [61].

Pragmatic Thinking - The construct of PT was assessed using seven items. For this study, the questions for PT were contextualized from the studies of [62], [63].

Data analysis

The data was analyzed for testing the outliers, and the data were found normal; and therefore, parametric tests could be employed to assess the study hypotheses—skewness and Kurtosis values for all items varied between -2 and +2. [64] This study's multicollinearity is not a problem because no bivariate correlation between two constructs was more than 0.80. [65] Additionally, considering the likelihood of response bias, we implemented various procedural safeguards to successfully limit the risk of standard method bias [66]. One component (i.e., the first factor) originating from the unrotated factor solution explained around 28% of the variation, indicating that common-method bias was not an issue in this study. Three items from SE construct were dropped from the analysis due to their cross-loadings on other factors.

Firstly, demographic characteristics of the respondents were checked. Specifically, 89 (53.9%) of the respondents were males while the rest 76 (46.1%) were females. The median age of the respondents was 20 years. Only 24 (14.54%) of the respondents have some prior work experience. To assess the proposed model's psychometric qualities, confirmatory factor analysis (CFA) using maximum likelihood estimation was used. In general, the CFA results indicate that the measurement model is well fitted (Cmin/df=1.766; GFI=0.903; AGFI=0.906; CFI=0.911; IFI=0.918; and RMSEA=0.068).

Consistent to [67] guidelines, all items loaded significantly on their respective constructs with factor loadings larger than 0.7. Additionally, all constructs' composite reliability (CR) ranged from 0.910 to 0.934, exceeding the cutoff value of 0.7, showing that the constructs are internally consistent [68]. The average variance extracted (AVE) values for each construct above the 0.5 cutoff value [68] indicating convergent validity. Table 1 reveals that each construct's AVE value exceeds the squared multiple correlations of all other constructs, showing discriminant validity [67]).

<table>
<thead>
<tr>
<th>CR</th>
<th>AVE</th>
<th>EE</th>
<th>SE</th>
<th>PT</th>
<th>EI</th>
</tr>
</thead>
</table>

Table 1: Discriminant validity and Reliability indicators
To analyze the data and test the study's propositions, we used Andrew F. Hayes' Process 3.3 and SPSS 24.0 [69]). We used a 5000-sample bootstrapping procedure to examine the role of ESE on the relationship between EE and students' EI.

First, we identified a positive and statistically significant path coefficient for 'c' ($\beta = 0.473$ at $p < 0.001$) between the EE and EI without the mediator. In the direct effect model, EE explained 29.2 percent of the variation in students' EI. These findings confirm hypothesis H1. Additionally, the path coefficient between the EE and ESI constructs was found to be positive and statistically significant. EE accounted for 23.1 percent of the variance in ESE in the direct effect model ($\beta = 0.481$ at $p<0.001$), supporting hypothesis H2. In addition, the path coefficient 'b' between the constructs of ESE and EI was shown to be positive and statistically significant (i.e., $\beta = 0.398$ at $p< 0.001$), thereby confirming H3.

Following a three-step approach, we tested the mediation model. First, the indirect effect of EE on students' EI was evaluated as the product of path coefficients relating EE-ESE and ESE-EI (ab = (0.481 x 0.398) = 0.191), the result of which was found positively statistically significant. Second, ESE was also found to have a positive influence on EI. Third, a favourable direct effect of EE on EI was reported in the presence of mediator ($c' = 0.3104$, $p<0.001$, LLCI = 0.2416; ULCI = 0.4426), accounting for 38.31% of the variation in EI. These statistics, in particular, demonstrate ESE partially mediates the positive association between EE and the EI of students. Consequently, H4 is partially supported. The empirical findings from the mediation analysis used in this study are summarized in Table 2.

### Table 2: Mediation Analysis

<table>
<thead>
<tr>
<th>Hypothesis sign</th>
<th>Hypothesized path</th>
<th>Direct effects</th>
<th>Direct effects with the mediator</th>
<th>Indirect effects</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H4</td>
<td>Entrepreneurial education ---$\rightarrow$ Entrepreneurial SE $\rightarrow$ Entrepreneurial intention</td>
<td>.473*** (.051)</td>
<td>.310*** (.058)</td>
<td>.191***</td>
<td>Partial Mediation (Supported)</td>
</tr>
</tbody>
</table>

Note: Bootstrapping of 5000 samples at 95% C.I. Entries are standardized estimates (standard errors). ***= p<.001

**Moderation analyses**

Multigroup analysis was employed to examine the moderating effect of PT on the relationship between EE and ESE ([70]). A median split method was used to divide the respondents into two groups: one with high pragmatic thinking and the other low. Following [71] guidelines to carry out
multi-group analysis, firstly, the study stated an unrestricted baseline model for freely estimated parameters to evaluate the configural invariance. The results displayed an appropriate model fit: $\chi^2_{(154)} = 202.114$, CFI = 0.921, IFI = 0.902, TLI = 0.911, RMSEA = 0.062. To assess metric invariance, all factor loadings were made equal across groups with higher and lower PT groups. The chi-square difference between both models was reported to be statistically significant ($\Delta \chi^2 = 28.341$ ($\Delta df = 18$), $p > 0.05$), thereby indicating full metric invariance.

<table>
<thead>
<tr>
<th>Paths</th>
<th>Standard estimate</th>
<th>Chi-square difference</th>
</tr>
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<tbody>
<tr>
<td>High (n=94)</td>
<td>Low (n=71)</td>
<td></td>
</tr>
<tr>
<td>H5 EE $\rightarrow$ ESE</td>
<td>0.33*</td>
<td>0.12**</td>
</tr>
</tbody>
</table>

Table 3: Comparison of two groups’ parameter estimates

The chi-square difference ($\Delta \chi^2 = 19.593$ ($\Delta df = 12$), $p < 0.05$) between the unconstrained ($\chi^2 = 172.832$, $df = 140$) and restricted ($\chi^2 = 192.425$, $df = 152$) models was significant. This study showed that the relationships between variables differed significantly between the low and high pragmatic thinking groups. The standardized path coefficient for the group with a high level of PT scores ($\beta=0.33$, $p<0.01$) was substantially greater than that for the group with a low level of PT ($\beta=0.12$, $p<0.05$), thereby supporting H5. Table 3 provides the information on the moderating effects.

4. Research Result and Discussions

The study's findings indicate that EE is critical for the development of PT in HT students and affects the ESE among H&T students. Additionally, it was discovered that ESE increases EI in students studying H&T, whereas PT does not increase EI among students.

According to the study, by increasing ESE through EE approaches, EI and motivation can be improved.

Course components such as role models, business planning methods, feedback systems, and student-centred instruction can increase entrepreneurial inclinations among hospitality and tourism students.

Higher education institutions should focus on transforming students' individual attitudes through entrepreneurial and business incubation programmes to foster entrepreneurial innovation and economic development.

5. Implication and Future research

This research topic contributes to understanding the effect of EE in the development of ESE on H&T students moderately affected by PT. Additionally, the study sought to determine the extent to which PT and ESE will ultimately induce EI in H&T pupils. This research is significant for curriculum developers, entrepreneurs, teachers, undergraduates, and the economy, as it strives to improve H&T students' performance. It will lay a solid foundation for influencing comparative research that must be conducted to advance and address numerous concerns and challenges linked with the incorporation of the domain of EE. It will highlight inconsistencies in present methods and techniques that must be reconsidered. The product of this extensive investigation will make a significant contribution to scientific understanding and will also be of tremendous benefit to future scholars.
In terms of future research, the study's findings can be evaluated in other contexts. Numerous combinations of numerous characteristics, including personality, family history, demographics, and perceived impediments, could be investigated to predict EI. Additionally, the EI of upper secondary students can be measured, which can bring significant benefits, particularly at the state or regional level. The role and influence of regulatory agencies, policy execution, and incentive structures may also be examined in the context of EI.

References


E-government as Good Governance in Building Post-Covid 19 Technological Innovations

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Abstract. Coronavirus Disease 19 has turned into a worldwide pandemic, Indonesia and the whole world is experiencing it. In a short time, it has spread to all parts of the world. E-government is an effort and process carried out by the government to implement computers, computer networks, and information technology in government and public services. Good governance will create clean and transparent government services to achieve common goals. In implementing e-government in Indonesia, the obstacles faced include 1) the absence of national standards 2) Inadequate facilities and infrastructure, 3) limited talented human resources, low public understanding of e-government services, and 4) many local governments identify the e-government implementation only by creating a local website. But in pandemic implementation of e-government increase.

Keywords: Covid19, e-government, good governance, digital innovation.

1. Introduction

Coronavirus Disease 19 has become a global pandemic in Indonesia and the whole world experiencing it. In a short time has spread to all hemispheres. As of August 12, 2021, approximately 204 million people from 223 countries have been hospitalized or self-isolating. This epidemic also caused more than 4 million people to die worldwide (World Health Organization data source). Meanwhile, until now in Indonesia, there are approximately 3.7 million confirmed positive cases, and about 113 thousand people have died from this virus (www.covid19.go.id accessed August 13, 2021). This pandemic forces us to maintain social distance, work from home, a study from home, and spend more time at home to suppress the spread of Covid19.

Information technology and communication (ICT) can promise efficiency, speed of information delivery, affordability, and transparency, not least for the government, especially during this pandemic. In addition, the current local government needs to realize good governance. To learn good governance by using information technology and communication, the government implements it into a system known as e-government. Through the implementation of e-government, the improvement of public services can be realized. As stated by[1], the government bureaucracy can develop the implementation of information technology and communication (ICT) in government activities, among others, to be a place of interaction with the public.

Following the Circular Letter of the Minister of State Apparatus Empowerment and Bureaucratic Reform of the Republic of Indonesia, Number 19 of 2020 concerning Adjustment of the Work Procedure of the State Civil Apparatus in Efforts to Prevent the Spread of Covid 19 in the Government Environment and the issuance of a circular letter of the Minister of State Apparatus Empowerment and Bureaucratic Reform, Republic of...
Indonesia Number 34 of 2020, among others that public services within the government can continue to run effectively. Public services by applying the principles of good governance must not stop during the COVID-19 pandemic. Digital bureaucratic services are a solution for optimizing public services during the COVID-19 pandemic. This is what underlies e-government research as good governance in building technological innovation in the post-pandemic period. This study aims to provide an overview of the importance of implementing e-government during the pandemic and after the pandemic ends and to find out what innovations need to be improved so that e-government in Indonesia can be implemented effectively.

2. Literature review

2.1. E-government

Information and communication technologies (ICTs) are used to transform traditional governance into more accessible, transparent, effective, and accountable is the implementation of e-government. The adoption of e-government technologies helps improve the efficiency and effectiveness of public service delivery of public organizations. It allows the government to use available resources to their best advantage, promote community development and sustainable development[2]. For e-government to be a realistic promise and carry valuable prospects to help achieve the goals of good governance, development and democracy must be components of comprehensive national strategy, signaling a willingness by the leadership to adjust to new advances and to conquer different hindrances, including political, instruction, innovation, and framework. Financial development, engaged bodies electorate, transformed establishments, and more productivity and viability in arrangement making and organization are potential benefits of the successful implementation of e-government initiatives[3].

During the current pandemic, other governments spent more than triple their supported financial plans on local area policing, cleaning and upkeep administrations. Their incomes from conventional sources, like the public vehicle, traffic fines, deferred duties, and rents from committee properties, experience the ill effects of this: self-confinement and monetary lockdown[4]. The execution of e-government in Indonesia is still most of the way and still far underneath the ideal and wanted norm. The exceptional lack isn't just in the neighborhood setting yet in addition in the worldwide setting. Quantitative accomplishments show huge advancement, yet it isn't adequate as far as quality because of inadequacies in HR, foundation, and guidelines. Consequently, it is important to refine the idea and technique of carrying out e-government from different sides. The presence of rules and principles for e-government advancement should be made so that there is no definition and which means of e-government exclusively by the coordinators, to be specific nearby governments[5].

2.2. Good Governance

Good governance is an issue that arises in public administration management; this is reflected from the intense demands from the community to state administrators, both in the public authority, the agent chamber, and the legal executive, to complete great administration. This interest doesn't just come from the Indonesian public yet additionally the worldwide local area[6]. Good governance is a conceptual understanding of the underlying principles. Starting from these principles, the benchmarks for the performance of a government are community participation, the rule of law, transparency of stakeholder concerns, based on the principles of equality, effectiveness and efficiency, accountability,
and strategic mission[7]. To implement good governance, the government must have a good public communication approach to know the actual data and what steps the public should take systematically. Good cooperation between the government and the people can also produce good results to overcome the COVID-19 pandemic[8].

The principal systems of good administration are straightforwardness, responsibility, proficiency, adequacy, and productivity, and viability. For this situation, advanced administration assists policy management with expanding straightforwardness and responsibility, while organization permits the public authority to work proficiently and successfully[9]. In international development, good governance measures how open organizations lead public undertakings and well oversee public assets. The administration is "the course of dynamic and the cycle by which choices are carried out or not executed". Administration in this setting can apply to corporate, global, public, or neighborhood administration and collaborations between different areas of society[10].

2.3. Information Technology (IT) Innovation

The more IT administration instruments are executed, the more adult the use of good administration standards, as well as the other way around. IT can advance great administration in three fundamental manners: expanding straightforwardness, data, and responsibility work with a precise dynamic and public cooperation and work on the productive conveyance of public labor and products. In this way, giving fitting IT systems and IT administration instruments significantly expands the straightforwardness of dynamic outcomes and indistinct cycles to all partners before carrying out the IT structure[11].

In technology, policymakers and financial backers in regards to IT prospect markets ought to consider international occasions and themes with regards to IT instability anticipating, hazard the board, and portfolio designation in their application[12]. The low usage of new ICT can likewise be a result of the diminished consolation or backing given by formal establishments, which has prompted a huge hole in the uniform pervasiveness of ICT essentials the nation over, for example, web availability and prepared staff[13]. Innovation can be valuable in decreasing the seriousness of the effect of the Covid pandemic on individuals, associations, and society. Nonetheless, utilizing innovation to battle the pandemic security, protection, inclination, morals, and computerized[14].

Developing technological innovation needs connectivity, and talented human resources and government support are needed[13]. Adoption of local IT correlated with measures of work-at-home eligibility. However, regional IT adoption and working from home independently protect the economy from local mobility shocks[15].

3. Methodology and data analysis

The type of this research is a literature review, which means a research methodology that aims to collect and extract the essence of previous studies and analyze several overviews of experts written in the text[16]. The research method is a series of steps or systematic procedures used to find the truth in scientific work, in this case, journal writing, to produce a quality journal that meets research requirements[17]. In this study, the approach used is descriptive qualitative. Our data was obtained by collecting previous research and sources relevant to this research problem. The study focuses on the implementation of e-government in Indonesia. Processing and analyzing data does not use numbers, symbols, or mathematical variables but with in-depth analysis of the research.
4. Research Results and Discussion

4.1. The development of e-governance in Indonesia

The execution of e-governance in Indonesia started with Official Guidance No. 3 of 2003. It means that it has been 18 years since the issuance of presidential instruction. However, in reality, not all regencies/cities in Indonesia implement e-government. The execution of e-government in Indonesia is as yet supposed to be low because there are as yet a few impediments in the execution cycle of the 548 provincial, city, and district governments using e-government, only four regions have been running. Namely, two regional governments in East Java and two regional governments in Central Java, meaning that 0.72% are still implementing e-government and 99.28% are still implementing e-government. Have not utilized e-government[18]. There is no national standard of regulation that regulates the implementation of e-government so that local/municipal governments still interpret themselves regarding the performance of e-government, facilities, and infrastructure, limited competent human resources, low public understanding of e-government services, and many local governments identify e-government implementation as merely creating a local government website (web presence).

E-government is the utilization of data innovation that can further develop relations between the public authority and different gatherings. There are at least four classifications of relationships in the new form of the use of information and communication technology there are 1). Government to Citizens (G-to-C), 2). Government to Business (G-to-B), 3). Government to Government (G-to-G) and 4). Government to Employees (G-to-E)[19]. For e-government services to run effectively, innovation related to technology must be improved, both in content or networks easily accessible by the public.

After the Coronavirus pandemic, the utilization of e-government in Indonesia has expanded. According to[20], Indonesia climbed 35 ranks on the e-participation index in 2020, from the previous rank of 92 in 2018. The implementation of e-government after covid includes 1) sharing information through the Covid-19 portal developed through the Website for the National Cluster COVID-19 Tasks, 2). E-health is a Virtual doctor-developed through Artificial Intelligence for the detection of Covid-19, 3). E-business such as online shopping and delivery of goods, 4). Contact tracing, tracking, and tracing through PeduliLinkungan (Care & Protect) application, 5). Social distancing and virus tracking were developed through the social distancing robot medical assistant ITS Airlangga (RAISA) and the last 6). Carry out work and study activities through E-learning, learning from home.

4.2. Barriers faced in the implementation of e-government

The obstacles faced in the process must found a solution so that e-government can run immediately so that public services continue to run effectively. In technological innovation, adequate facilities and infrastructure are needed, such as connectivity and human resources. In any case, insufficient assets, not administration mentalities, and framework qualities are the principal issue of the end-product of preparation[21]. As far as e-government execution, its focal point/IS reception should be transformed from the typical IT/IS. An establishment approach is an institutional methodology that accentuating instinctive development in government and the worries and needs of government employees and residents[22]. Study[23] finds that e-government execution endeavors in Oman are as yet in their beginning phases, and the nation faces a few difficulties in such a manner. Among the most noticeable components recognized as the principle challenges for e-government, execution is the absence of procedure, administration, lawful and administrative structures, and foundation-related issues.
Although the COVID-19 pandemic is global, the handling is still local, and this is because state regulations, governance mechanisms, links to science-based decision-making, local governance, and people's behavior are different in each country[24]. For example, research conducted in Nepal, the implementation of e-government be affected by low education rates, low per capita pay, helpless framework, absence of HR, political unsteadiness, absence of administration and responsibility/coordination, restricted monetary assets, and absence of mindfulness preparing[25]. With higher IT adoption. IT can significantly protect local economies during the COVID-19 pandemic[26].

The execution of e-government in Indonesia is impacted by an unmistakable image of the presentation of e-government because of the shortfall of clear normalization and socialization. The scarcity of adequate human resources, information technology services that are not evenly distributed, still not even distribution of community literacy is related to the use of e-gov because the majority of the population is in the lower-middle-class line[5]. According to[27], Indonesia’s barriers to e-government include e-leadership, information network infrastructure, information management, business environment, and community and human resources. Obstacles or challenges in implementing e-government in Indonesia to meet the industrial revolution 4.0. The culture of sharing information does not yet exist, the culture of documenting is not uncommon, the scarcity of reliable human resources in the IT field, infrastructure that is inadequate and expensive, limited access to information[28].

E-government is an effort and process carried out by the government to implement computers, computer networks, and information technology to run government and public service and measure efficiency dan effectiveness. Designers and partners should guarantee that the data gave through e-government data administrations are exact, finished, predictable, right, and reliable[29]. In implementing e-government, local governments experience several obstacles. During the pandemic, where social interaction makes public services limited. Therefore, the Minister of State Apparatus Empowerment and Bureaucratic Reform circular was issued, one of the objectives of which is to ensure that public services in government agencies can continue to run effectively. Data show the efforts made by the government were maximal, during the pandemic the implementation of e-government in Indonesia experienced a significant increase. This can be seen from the results of a survey conducted by the Department of Economic and Social Affairs in Asia including Indonesia. This survey aims to find out Digital Government Initiatives in response to the COVID-19 Pandemic. Which experienced an increase in ranking both in the implementation of e-government and e-participants from the survey conducted the previous year. This shows the seriousness of the government in implementing the implementation of e-government.

5. Implications and Suggestions for Research

Public institutions, especially the government, are expected to start making e-government development plans within their scope of work. So that they can increase the quality and amount of administrations to the public based on information technology and support a clean and transparent government process by providing services that enable the public to access information and government policies, e-government can also shape improvements to government organizations (bureaucracies), including improving time management for discipline and employee productivity and financial management in integrated government.

Realizing the snags identified with the execution of e-government in Indonesia, it is hoped that it can be used as a reference for improvement in formulating a technology
innovation strategy after this pandemic. It is considering that e-government services are not limited to only website implementation but also information technology to interact with the public, providing information for business, government services with other governments, the government, and its employees. If the implementation is effective and sustainable, it will be able to support economic development because technology helps the government to be able to create a healthy business by implementing e-government.

For further research, it can be analyzed whether the implementation of e-government in Indonesia is effective enough by using the performance measurement method.

6. Reference


Utilizing Micro, Small and Medium Enterprises Business Applications and Communication in Digital Technology in The Time of Covid 19

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Abstract. The study to analyze about impact of the era pandemic on micro and macro a company business in Indonesia. In general this study using descriptive qualitative method. The business world is changing since pandemic era seen by turnover from micro, small and medium enterprises has decreased significantly. Some of the most affected the business word are accommodation, tourism, food and beverage providers, big party or retail trade, motorcycle repair, transportation and trade. Most small, medium and micro-businesses are unable to thrive and many people end up going bankrupt. Therefore, micro, small and medium enterprises actors have changed their sales strategy through a digital plan. Digital solutions are based on the use of marketplaces (middlemen) and the use of social networks as marketing techniques. Therefore, the plan to develop digital micro, small and medium enterprises can be an alternative to saving business actors during the Covid-19 pandemic.

Keywords: Covid pandemic, digital micro, small and medium enterprises, and Communication.

1 Introduction

The spread of the corona virus in Indonesia was first detected around the beginning of 2020. This virus does not take long because 34 provinces have been affected by the outbreak, such as East Java, DKI Jakarta, and South Sulawesi, which are the most exposed provinces. Preventive efforts were immediately carried out by the government to all people like to avoiding a crowd, stay at home, washing hand as often as possible. one of the efforts that had the greatest impact was implemented Large-Scale Social Restrictions (PSBB) with the Implementation of Restrictions on Community Activities (PPKM). The MSME sector was also badly affected with it. According the data of Ministry of Cooperatives showing that 1,785 cooperatives and 163,713 Micro, Small & Medium Enterprises (MSMEs) were influenced by this pandemic [1].

Food and beverage is the most affected sector based on data from the Ministry of Cooperatives & MSMEs. According to MSME entrepreneurs, there was a decline in sales, a reduction in capital and the distribution process was disrupted. As many as 39.9% of MSMEs must dare to take decisions to reduce the amount of inventory or even reduce production when the Government implements PKKM, while 16.1% of MSMEs also reluctantly have to reduce the number of employees due to their declining capital capabilities. In Indonesia, MSMEs have a fairly important role, including in terms of opening up job opportunities and MSMEs can also be a forum for low-income people to be able to carry out productive economic activities. In facing the Industrial 4.0 era in Indonesia, the role of MSMEs is very important in increasing GDP (Gross Domestic Income) before this pandemic occurs. However, after this pandemic occurred, MSMEs were also affected. The micro, small and medium enterprises sector which was shaken during the COVID-19 pandemic, apart from food & beverage, were also affected by the creative and agricultural industries.

The use of digital platforms by business actors in Indonesia is increasing rapidly, as evidenced by 42% of business actors who use online media in conducting transactions. Online media is considered a forum for entrepreneurship development and the key to business sustainability [2]. McKinsey data shows that there was a 26% increase in sales through e-commerce with a total of 3.1 million transactions per day [3]. This pandemic period encourages
business actors to take advantage of digital platforms and online media to increase their income, it can be further seen that the business actors who have managed to survive are those who are always ready to adapt to changes such as changes in selling using digital systems.

However, micro business actors also have obstacles, namely obstacles in providing production goods, obstacles in preparing competitiveness with large companies that also use digital systems. To develop digital SMEs, several things must be considered, such as production quality, production capacity or quantity and understanding of digitalization. These things need to be considered so that MSMEs can last a long time. Furthermore, it is no less important about the concept of customer loyalty which in fact millennials can be used as a means to increase income by involving them as resellers of our business so that they can influence other customers to buy our products. The Ministry of Communication and Informatics (KOMINFO), which is an arm of the government, has just issued the Digital Micro, Small and Medium Business Training Program as evidence of support in the development of MSMEs so that business actors can switch to a digital system in doing business because in 2021 the Coordinating Ministry The Maritime and Investment Sector hopes to have 30 million micro, small and medium enterprises in line with a total of 60 million micro business units. Small and medium enterprises that can enter the digital ecosystem even though based on existing records, only about 11 million to 12 million micro, small and medium enterprises use digital platforms to sell, so there are still other opportunities to take advantage of digital platforms to sell. The most important part is the restoration of digital infrastructure because this section is an important part in developing micro, small and medium enterprises in addition to other support in the form of the Job Creation Law which is considered to be in favor of micro, small and medium enterprises. Restoration of digital infrastructure must be carried out immediately considering that in the future people will have to love local products more [4].

All aspects are affected including the use of information and communication technology. The PKKM regulations given by the government make everyone uncomfortable because they are not used to dealing with the changes that occur, they are still awkward using technology in daily activities which must have obstacles in the process, are not used to going to school using technology, are not used to working with technology, we are not used to it. selling with technology and others, but all must be willing to do it so we must be willing to embrace existing technology to face this pandemic era.

2 Literature Review

COVID-19 is a global epidemic, starting from the city of Wuhan, Hubei Province, China, which was affected and then spreading throughout the world. Further developments of Covid-19 will not only harm the regions and countries affected by Covid-19 but will also have an impact on other regions and countries due to interrelated economic value chains. [5] stated that this virus is not only detrimental to health factors but also to the economies of countries in the world, including Indonesia. Several journals and reports openly state that the lockdown policy will directly reduce or even stop various community activities, students and workers, stop the production process, stop all transportation flows, investment activity slowed down and there was a decline in the financial, banking and export-import sectors by 2% from the position of 6% before this pandemic occurred. In other words, the world economy is slowing down and all of this is affecting the business world.

Digital transformation must be encouraged as an effort to save the micro, small and medium business sector at a time like this which has indirectly created diversity in entrepreneurship using digital systems. Trading using digital systems is a business system that mostly uses advanced technology starting from input, process to output or it can be interpreted that all types of businesses that use websites, online media and applications are included in the digital entrepreneurship category. It can be interpreted that digital entrepreneurship has a positive contribution to strengthening the Indonesian economy as seen from the increasingly strengthening role of technology in the global business world. Digital technology has changed the entire character or nature of the entrepreneurship model from conventional to modern (digital-based) [6], moreover, the existence of online media will open up new business opportunities for the community to develop a digital entrepreneurship model. In general, the
term "technology" is defined as the convenience obtained from the application of knowledge in running an industry such as creating tools, developing skills, solving problems and others while the term "entrepreneur" is defined as a person or group who creates a business independently to get opportunities which exists. This phenomenon further strengthens that there will be many opportunities for people to start entrepreneurship, especially business actors. This can be seen from the convenience & comfort offered. However, behind the convenience offered by business people who choose digital entrepreneurship, they must have creative and innovative ideas and be willing to cooperate with many parties such as digital entrepreneurs or content creators, training institutions, stakeholders, and authorities. Based on the research of Chayapa & Cheng Lu [7] there are factors that can be considered in making indirect or online purchases such as

1. Convenience, a situation where people feel comfortable and safe in shopping because they do not need to come directly to the shopping center.
2. Complete information. This factor makes it easier for some people to get information quickly and easily, coupled with the many platforms that provide various features that review products and their quality.
3. Capacity of goods and services, a condition where the public can easily find out information on the amount of goods available at any time.
4. Cost and Time Efficiency. This factor makes it easy for the public to obtain information about the best prices in other stores.

In other words, online shopping is an example of the application of the use of digital systems in entrepreneurship so as to build a new ecosystem for micro, small and medium enterprises. This system is also convincing for micro, small and medium businesses to continue to use technology in selling because consumers can shop anytime and anywhere. This opportunity, if exploited by micro, small and medium enterprises, can be an opportunity to compete in the international arena.

3 Methodology and Data Analysis

This research uses descriptive qualitative method and secondary data. The selection of secondary data is because it can be easily obtained while descriptive qualitative is a method where researchers describe the conditions observed in the field more specifically, transparently, and in depth.

4 Research Result and Discussion

SME Industry and Covid-19

The slowing pace of the global economy is already visible. Many business actors choose to leave the business or temporarily close their business due to declining income. Micro, small and medium business actors experienced a drastic decrease in income due to the implementation of PKKM by the authority to suppress growth of this virus without realizing that all ongoing business activities will have an effect and will ultimately affect the economy. Economic activity will decrease because consumers reduce direct activity in buying and selling transactions. This also has an impact on buying and selling in the manufacturing and tourism industries. The tourism industry has also experienced a decline. Ida Bagus Agung Partha Adnyana, chairman of the Bali Tourism Board (BTB), Indonesia Tourism Industry Association (GIPI), said that there were 40,000 inns that failed to earn a profit of IDR 1 trillion every month [8]. Based on P2E LIPI data, the tourism industry has decreased starting from micro-enterprises reached 27%, small businesses reached 1.77%, and medium-sized enterprises reached 27%. 0.07%. The wood and rattan furniture industry has also been affected by the Covid-19 virus, each with various percentages starting from micro businesses at 17.03%, small businesses at 1.77% and medium businesses at 0.01%. Meanwhile, the home industry also experienced a decline of between 0.5% and 0.8% [9]. In fact, it must be realized that the economic progress of a country is very dependent on the strength of micro, small and medium enterprises when facing this prolonged crisis.
Although it is known that digital entrepreneurship is resilient in the face of the economic crisis, it turns out that according to the General Chairperson of the Indonesian Micro, Small and Medium Enterprises Association (Akumindo) Ikhsan Ingrabatun, there are sectors that do not benefit from digital transactions because sales of these products rely on face-to-face physical transactions or meetings directly between entrepreneurs and consumers. The sector in question is the non-culinary zone sector which refers to foreign tourists, it is estimated that the turnover of micro, small and medium enterprises has sunk by 30-35% since Covid-19. This pandemic has caused a slump in all sectors, both the formal and informal sectors, it has been recorded that more than 1.5 million workers have become unemployed due to being laid off

**Business Can Survive**

The businesses who can survive this pandemic are business actors who are already connected to the digital ecosystem that utilize the marketplace in Indonesia, actors who can create and adapt their business with innovative products such as bag sellers and retailers clothing that also sells cloth masks or hand sanitizers, while other industries that have survived the COVID-19 pandemic are industries related to meeting basic needs such as electricity, clean water, agriculture, plantations, fisheries, automotive, and banking. Basically most of the industrial sectors take advantage of sales through digital marketing.

**Digital Economy Ecosystem**

Micro, small and medium enterprises have various challenges in the use of the entrepreneurial ratio which has only reached 3.5% so that the increasing quality of MSMEs is an important thing that must be considered to create a strong Indonesian economy, as it is known that MSMEs have an important role in it. If you look at past experiences during the economic crisis in Indonesia, MSMEs became one of the pillars of the Indonesian economy and during the pandemic it must be admitted that the MSME sector was relatively sluggish so that the actors had to have digital transformation tactics in order to survive. [10] stated that only 45% of MSMEs were only able to survive for three months and the rest were unable to survive during this Covid-19 pandemic.

Therefore, the Ministry of Cooperatives & Small and Medium Enterprises (Kemenkop UKM) invites young innovators to support the MSME digitization program through the MSME Digital Hero event as a way to develop digital MSMEs. This program is useful for MSME actors to survive during this pandemic, helping them to gain profits by using the support of the digital ecosystem because so far there have only been around 10-11 million MSMEs using the system. Below are four strategies for disseminating the use of SME digitization by the Kemenkop UKM such as;

**First**, improving the ability of human resources, the quality of human resources is important in the use of digitization so that MSME actors will no longer be constrained by knowledge in using digitalization systems and online media [2]. **Second**, improve financial literacy skills for MSME actors to manage their business units, including making books or financial reports. It is noted that there are still many MSME financial reports which are considered to be less in accordance with the established standards [11]. Third, broad market access that utilizes the role of the Government Goods/Services Procurement Policy Agency (LKPP) so that MSME actors can become producers. Fourth, love local MSME products. MSME actors can create a creative and valuable product using a digital platform which in the end can become a selling point to easily penetrate the international (export) market. Handling in times like this, mitigation & recovery solutions are needed by encouraging the number of requests and encouraging digital platforms to expand partnerships, which is no less important is collaboration in utilizing innovation & technology from the beginning of the process until the product is well received by consumers [12]. All these must continue to be implemented by the Ministry of Cooperatives & SMEs during the current Covid-19 pandemic.

Another strategy that is no less important is to encourage parties such as stakeholders, corporations, universities and others to be able to cooperate with MSMEs so that they can immediately carry out digital transformation so that it will give birth to young creators who will enliven MSMEs in Indonesia.
The Urgency of Creative Content

Creative content is an important thing that must exist in the development of digital-based SMEs to be able to compete in the digital era. Several studies state that creative content can have a big effect on attracting consumers’ attention [13]. Business actors must create creative content in marketing their products digitally so that the resulting products can be accepted by the market so that their business can continue to run in times like this.

Creating creative content is not easy, it takes skill in stringing words, cleverness in packaging and marketing products so that the products & services offered have attractive value for consumers besides having expertise in photography techniques can make merchandise look more attractive when distributed on online media. It was found in several studies that video and photography techniques have a higher appeal [14]. Business actors must be given training in creating creative content such as making good branding, logos and packaging to attract consumers to make purchases online or offline [15].

5 Implication and Suggestion for Future Research

Government regulations for PKKM in suppressing the spread of COVID-19 have had a major impact on micro, small and medium enterprises, many businesses were forced to close, many unemployed due to being laid off because the company did not have sufficient income to pay salaries. Not only that, the imposition of restrictions on community activities has an impact on the manufacturing industry and the tourism industry which has experienced a decline. This situation is very sad, considering the many industries that are affected. Whereas the economic progress of a country is very dependent on the strength of MSMEs to survive in the face of a crisis.

Although it is known that digital entrepreneurship provides benefits for only micro, small and medium enterprises, this does not apply to non-culinary industries such as the tourism industry which has fallen by 3035% since Covid-19 because not all product sales can be successful through digital techniques, there are industries who still have to rely on face-to-face or physical sales between entrepreneurs and consumers.

Micro, small, and medium enterprises who can survive in the midst of the COVID-19 climate are business actors who are already connected to the digital ecosystem that utilize the marketplace in Indonesia, actors who can create and adapt their business with innovative products such as bag and clothing sellers who also penetrated by selling cloth masks or hand sanitizers, while other industries that survived the COVID-19 pandemic were industries related to meeting basic needs such as electricity, clean water, agriculture, plantations, fisheries, automotive, and banking. Basically most of the industrial sectors take advantage of sales through digital marketing.

In selling using digital marketing, creative content is needed to attract high consumer attention. Creative content is an important thing that must exist in the development of digital-based SMEs in order to compete in the digital era. In using social media as a transaction tool, content is a mandatory thing that must exist in order to attract consumers and achieve big profits in the pandemic era so that MSME business actors have to compete in creating creative content that is different from others to get a competitive advantage. All business actors must continue to innovate in utilizing digital marketing techniques to deal with this long pandemic.

References


[10] BPS, "Micro, small and medium enterprises have various challenges in the use of the entrepreneurial ratio which has only reached 3.5% so that the increasing quality of MSMEs is an important thing that must be considered to create a strong Indonesian economy, as," BPS, 22 SEPTEMBER 2020. [Online]. Available: https://www.bps.go.id/publication/2020/04/29/e9011b3155d45d70823c141f/statistik-indonesia-2020.html.


Technology Makes Hustle Culture Still Happened in Pandemic Covid 19

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Abstract. The companies rely on continuous technological developments to meet market and work technology needs, produce goods and services more efficiently, and save time and costs based on modern technology. The development of the internet has changed the way employees work locally and globally during the covid-19 pandemic. Technology brings new access to employees to be a hustler. Hustle culture is a neologism for workaholism, associated with excessive dedication to one’s work to exclude every other aspect of one’s life to create an unhealthy work-life balance. The results show that there are positive and significant effects between technology and hustle culture. This illustrates that technology can increase the potential of hustle culture.

Keywords: Hustle Culture, Technologies, Employees, Covid 19 Outbreaking

1 Introduction

Today, the world is faced with a pandemic of the covid-19 virus. Many companies rely on continuous technological developments to meet market and work technology needs, produce goods and services more efficiently, and save time and costs based on modern technology. The development of the internet has changed the way employees work locally and globally during the covid-19 pandemic. According to [1] the internet has made it easier to obtain information, interact, promote, and recruit employees to work well. One of the uses of technology in the form of the internet during a pandemic is work from home

Hughes, 2004 in [2] argues that engineers, scientists, and managers often believe that they can use technology to shape the world as they wish. They often think that technology is easy to control, and this assumption should be seriously questioned. Internet-centrism refers to the idea that our society believes that the internet is one of the most stable and coherent forces. Technology is intrinsically uncertain and limited.

WFH is part of the telecommuting concept, which is not new in the field of work and government, even known since the 1970s to overcome traffic jams caused by commuting from home to work every day.
Technology is an important factor in the running of communication in a job during the covid-19 pandemic. Working virtual is certainly different from working face to face in the way they communicate. Work virtually using technology and information to communicate with each other and face the challenges of discussing online decision making with multiple perspectives from each team member delivered online. [3]

Technology has made workers exceed the time constraints they have at work. According [4] Sometimes workers are too busy working, so they forget the time to rest

2 Literature Review

According to [2], Technology is a creative process that involves human ingenuity”. This definition’s emphasis on creativity avoids the meaning of infinity that might erroneously include “technology” and highlights the critical role of humans and, therefore, their responsibility for using complex technological systems. Whereas [5] considers technology as a resource and emphasizes the dynamic nature of the flow of knowledge that must occur between commercial and specialized functions within a company,

Hustle culture is a neologism for work-holism, associated with excessive dedication to one’s work to exclude every other aspect of one’s life to create an unhealthy work-life balance. [4]. According [6] From the outside, the hustle culture looks like a high-energy motivational movement that comes with expected rewards. For most people, working long hours is usually associated with climbing the corporate ladder faster, making millions in the shortest possible time, or earning passive income from working hard all the time. It is believed that anyone can succeed and achieve anything they want in life if they work hard enough. But this can only happen if you devote 100% of yourself to work, lack sleep, and motivate yourself to get through the pain despite all the strength to work.

[7] Making the idea that a 40-hour workweek is just a formality, and employees are now subject to extreme work where they work more than 60 hours per week while managing professional demands. Especially about globalization. According to Elon Musk, founder, CEO, CTO and chief designer of SpaceX, in [8] Explaining that being successful requires working from around 80 hours to over 100 hours per week. That’s why many want to compete for non-stop work. They believe that by working continuously, they will be successful at a young age. In addition, many also challenge themselves and convince people that hard work is the single most important thing in achieving success [9].

[6] There are several reasons why someone can be called a hustle culture

1. Work beyond the specified hour limit
2. Bragging about not getting enough sleep and working a lot
3. Claiming to be tired but forcing yourself to overcome it
4. Mention how many cups of coffee they drink to stay awake so they can continue to work
5. Believe that rest is a waste of time.
6. Overall, this culture is characterized by an obsessive work ethic and constant productivity.
7. Hustlers are people who do not like free time. For these people, work-life balance does not exist because they think “Sleep is only for the weak”

A study published in Occupational Medicine in 2017 showed that longer working hours were associated with poorer mental health status and increased symptoms of anxiety and depression. Long weekly hours were also associated with reduced sleep time and increased sleep disturbances. These results underscore the importance of maintaining regular weekly working hours and avoiding excessive overtime to reduce the risk of anxiety, depression, and sleep disturbances.

3 Methodology and Data Analysis

The research method is a series of systematic procedures that need to be observed when carrying out research so that the results of the research can be accounted for. The research method used in this study is the quantitative correlational method which aims to detect the extent to which variations in a factor are related to variations in one or more other factors based on the correlation coefficient [10]. The correlation variable that will be tested is the role of technology in Hustle culture during the COVID-19 pandemic for state-owned companies employees in Lampung

Sample and Sampling Technique

The population of this study is state-owned companies employees in Lampung. The sample of this study amounted to 215 people. The technique used in this study was non-probability sampling, where each individual in the population did not have the same opportunity to be chosen as the research sample. The technique used was purposive sampling. The researcher used certain characteristics in this study [10]

4 Research Result and Discussion

Validity

Measurement of validity is using factor analysis with SPSS, Kaiser-Meyer-Olkin (KMO) and Measure of Sampling Adequacy (MSA) ≥ 0.5 Considered valid and research can be further researched [11].
Table 1. Table of test Validity results

<table>
<thead>
<tr>
<th></th>
<th>Technology</th>
<th>Hustle culture</th>
</tr>
</thead>
<tbody>
<tr>
<td>KMO</td>
<td>0.533</td>
<td>0.687</td>
</tr>
<tr>
<td>Approx Chi Square</td>
<td>90.509</td>
<td>1015.961</td>
</tr>
<tr>
<td>Df</td>
<td>3</td>
<td>253</td>
</tr>
<tr>
<td>Sig</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

According validity test indicates that the Kaiser- Meyer- Olkin (KMO) of Technology (X1), Hustle culture (Y) indicators, demonstrate the value > 0.5. which mean that all indicators used is valid and can be processed for to next steps.

Reliability

A reliability test is a test to measure a questionnaire which is an indicator of a variable. A questionnaire is reliable if the answer to the question is consistent over time. Reliability measurements in this study were carried out by means of the one-shot test or only one measurement. Measurements were only conducted once, then the results will be compared with other statements or reliability were measured with the Cronbach’s alpha statistical test. A variable is realistic if Cronbach’s alpha value is > 0.60. [11]

Table 2. Table of test Reliability results

<table>
<thead>
<tr>
<th></th>
<th>Cronbach’s Alpha</th>
<th>Cronbach’s Alpha Based on Standardized Items</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>0.600</td>
<td>0.599</td>
<td>3</td>
</tr>
<tr>
<td>Hustle Culture</td>
<td>0.761</td>
<td>0.761</td>
<td>23</td>
</tr>
</tbody>
</table>

The result of the reliability test show that all Technology (X1), Hustle culture (Y) variables were reliable because they have crossed the limit of the reliability coefficient (0.6) thus the items in each of these variable concepts were used as a measuring instrument.

Model Assessment Test

1. Coefficient of Determination (R2)

The coefficient of determination is used to measure the ability of the independent variable to describe the dependent variable. The coefficient of determination is between zero and one. If the value is getting closer to one, it means the ability of the model to explain the dependent variable is higher. The analysis is carried out using regression analysis in SPSS 22.0 software obtained the following results:

Table 3. Coefficient of Determination

Model Summary
These results show that during the COVID-19 pandemic, technology contributed 33.1% to hustle culture and the rest was influenced by other variables.

2. T Test

The t-test shows how far the influence of one independent variable individually explains variables. The t-test intends to examine the effect of independent variable on the dependent variable. The result of the t-test can be seen as follows:

<table>
<thead>
<tr>
<th>Coefficients^a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>X</td>
</tr>
</tbody>
</table>

a. Dependent Variable: \( Y \)

\[
Y = \alpha + bX \\
Y = 62.158 + 0.576X
\]

Based on Table 4, the sig value of the technology regression coefficient is 0.000 smaller than the significant value of 0.05, and The coefficient value of the equation is 0.576. This proves the positive influence between technology and hustle culture, which means that if technology development increases, the intensity of hustle culture will increase. It means that technology has significantly affected hustle culture. So the hypothesis states that technology has a positive effect on hustle culture is accepted.

4 Implication and Suggestion for the future

Perception of the hustle culture varies by industry as well workload. However, further research should investigate this in more depth - especially in terms of education, health and technology sectors. From our data points, it appears that the tendency that the more employees value other aspects of their lives than work, the less likely this is for their work to be verbally appreciated or for...
their superiors to encourage mental health days. Further research on various types of supervisor support and its impact on employee satisfaction and mental health can provide insight into the authenticity of an employee’s pursuits to stay committed to the company. Discovering a hustle culture be of great value to employees who work in many positions in various industries.

Without us realizing it, technology has affected the company’s work system. For example, if we used to use a typewriter, then send the file via courier or telegram. Now, switch to using a computer. Communications and other documents may be sent electronically (e-mail) due to Internet services. Technology has now become a basic need for companies in running a business.

Based on the results of the research, the effect of technology can be increasing of hustle culture a significant effect to hustle culture. This research also proves that technology can bring about a new era of hustle culture during the COVID-19 pandemic.

Research for the future

1. There are limitations to research using a questionnaire, that is, sometimes the answers given by respondents do not indicate the real situation.
2. The object in this study is only limited to employees of state-owned companies in Lampung, for further research it is recommended to also look at other sectors
3. There are many variable which can affect on Hustle culture

References


Project-Based Learning in Teaching Entrepreneurship:
A Review of the Literature

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Abstract. Entrepreneurship teaching has an important role that contributes to the creation of new businesses. However, what kind of teaching method can make this happen? This paper conducts a literature study on project-based learning research in the teaching of entrepreneurship for 20 years (2000-2021). By using systematic review, this paper collects over 200 articles indexed on Scopus. The findings show three types of project-based learning in teaching entrepreneurship: project-based learning focusing on business development, project-based learning focusing on product development, and project-based learning focusing on business consulting. How it is applied and its effect in the teaching of entrepreneurship is further discussed. Suggestions for implementing project-based learning in the teaching of entrepreneurship in the future are also present.

Keywords: Entrepreneurship Teaching, Project Based Learning, Business Development, Product Development, Business Consultancy

1 Introduction

Entrepreneurship education facilitates individual learning and acquires knowledge, abilities, and values to resolve broader difficulties [1]. Therefore, teaching entrepreneurship plays an important role, such as project-based learning (PBL). PBL is a means for instilling thinking competence and creating a flexible learning environment. Improve the ability of outstanding students [2]. PBL has the potential to support learners gain the skills and knowledge needed in today's industry. One of the main criticisms of PBL is that instructors cannot cover as much content as in traditional lectures [3].

On the other hand, to engage effectively in PBL, students must take responsibility for their learning and actively build knowledge and make meaning [4]. PBL is effective student-centered teaching identified by student independence, constructive inquiry, goal setting, collaboration, communication, and consideration in real-world practice [5]. Various research results show that students prefer mixed learning methods over traditional learning methods. When using the traditional method, more than half of the students asked for an explanation to understand the subject better. Most of the students stated that they were more prepared to face the test using the PBL method. PBL in entrepreneurship learning is an effective learning method that requires meaningful student effort. Thus, it is suggested that the subject syllabus be modified not for students [6].

Thus, teaching entrepreneurship cannot be well performed by using traditional methods but requires more appropriate methods, such as project-based learning. This paper
conducts a systematic review to answer the following research question: How is project-based learning implemented in teaching entrepreneurship?

2 Method

This paper conducts a literature study on project-based learning research in entrepreneurship teaching. This paper conducts a systematic review of the literature with the following stages. First, this paper reviews articles over the last two decades using the publish or perish software. The cited articles are indexed articles on Scopus for 20 years (2000-2021). The search using the keywords „project-based learning“ and „entrepreneurship“ and the software found 200 articles. In the second stage, the first screening was carried out on article titles because not all articles showed the same focus on project-based learning and entrepreneurship. The results of the first screening found only 22 articles that had appropriate titles. The third stage, the second screening, was done by reading the abstract, and it showed that only eight articles were most relevant to project-based learning and entrepreneurship (Table 1). At the final stage, the synthesis is conducted and displays the results.

<table>
<thead>
<tr>
<th>PBL Type</th>
<th>Description</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business development</td>
<td>Creation of Enterprise</td>
<td>[28]</td>
</tr>
<tr>
<td></td>
<td>Innovation and Entrepreneurship Project</td>
<td>[21]</td>
</tr>
<tr>
<td></td>
<td>Pharmaceutical management</td>
<td>[14]</td>
</tr>
<tr>
<td>Product development</td>
<td>Assembly activities</td>
<td>[17]</td>
</tr>
<tr>
<td></td>
<td>Game-development workshop</td>
<td>[29]</td>
</tr>
<tr>
<td></td>
<td>Ethno-STEM in the making of batik products</td>
<td>[8]</td>
</tr>
<tr>
<td>Business Consultancy</td>
<td>Consulting with industrial clients</td>
<td>[15]</td>
</tr>
</tbody>
</table>

3 Result and Discussion

Project-Based Learning (PBL) entrepreneurship articles reviewed in the past two decades show that entrepreneurship PBL in universities is diverse. Table 1 shows that entrepreneurship PBL implemented in entrepreneurship teaching consists of business development, product development, and business consulting.

Project Base Learning Focuses on Business Development

The type of PBL that focuses on business development (Figure 1) is carried out in the following stages. First, the lecturer proposes the theme of the project to be developed, for example, Creation of a Technology-Based Enterprise [28], an integrated project of innovation and entrepreneurship [21], or pharmaceutical management [14]. Thus, PBL directs students to focus on establishing a business. The second stage is group development. The development of groups is important to establish interaction in the work team, coordinate the volume of work, the time to be spent, discuss information about the project organization, the level of involvement, and help the level of students’ understanding of the material. At this stage, the group can be given a particular class/space or moodle platform if using online learning [21]. The third stage is competence. Competence is divided into two technical competence and
general competence [14]. Technical competence relates to abilities or skills that link organizational functions with projects, such as business feasibility studies, site selection and layout, strategic business planning, staffing, and financial management. General competencies are the working in a team, organizational tidiness and professionalism, and present projects. The next stage is student assessment. At this stage, an assessment of student performance, perception of appropriate assessment, student satisfaction, and student loyalty is carried out. The final stage is the PBL evaluation. This evaluation is important to assess whether PBL is running effectively and the project can be successfully implemented.

![Diagram of PBL Process](image)

**Fig. 1.** Type of PBL that focuses on business development

Shahiwal's (2017) findings are interesting that moment used up teaching and nurturing entrepreneurial tendencies, and administering needed resources might be a helpful tool to students. Therefore, academics can afford to advance the pharmacist profession's status, financial stability and development of pharmacies, and patient care quality [30].

From the viewpoint of lecturers tied in the PBL, it is argued that multidisciplinary PBL provides students with a beneficial skill. Particularly in dealing with real-world problems, their innovations can be performed in partner industries. In addition, student learning satisfaction also increases. The most challenging soft skills are team and project management. The core of the whole process is team coordination. If it does not run correctly, it can disrupt the entire process of PBL [21]. In addition to team coordination, lecturer coordination is also an essential requirement for the success of the PBL experience and student perceptions and academic results [28].

**Project Base Learning Focuses on Product Development**

PBL focuses on product development focuses on creating products, for example, assembling (such as 3D printers, remote control cars, laser tag systems) [17], game development [29], and designing Batik motifs [8], or develop specific software [11]. In product-based PBL, there are several stages (Figure 2). The initial stage is to design the materials and methods that will be used. Game development, for example, is necessary to modify the curriculum design to ensure students learn appropriate materials and are competitive in the job market, given the rapidly changing gaming field. For example, in the making Batik, lecturers use material design
by including ethnoscience in the Organic Chemistry and Entrepreneurship course. This PBL uses the Ethno-Stem method, i.e., traditional essential oil distillation at Cepogo, Boyolali, Indonesia.

The next stage is to develop a team if needed because PBL focuses on creating or developing products. Then proceed to the stage of product introduction and product work. In the final stage, students reflect on their work. Game Development and Entrepreneurship facilitate the cognitive learning process through student-centered learning and challenging them to learn through experience. The expert creates the appropriate educational scaffolding. Materials from all the courses are integrated to allow students to see the merits of the theoretical concepts covered and relate to game development [31]. PBL is an innovative action in learning. It makes students face real projects that can take place in a real work environment. The student must manage the whole project and develop a model to tackle the project. Students learn how to do the planning, search and selection resource, improvement, and carrying problems. Solving these problems helps them perform better when handling project development in companies and institutions [17].

![Fig. 2. Type of PBL that focuses on Product Development](image)

In education, finding the right stakeholders who are able and willing to invest the necessary resources is the challenge. This stakeholder will collaborate with students. From the lecturer's view, the challenge is to prepare students to work in real-world contexts. It is mainly the case when the student's technical skills are not aligned with the skills required in the tools used by professionals [11].

**Project-Based Learning Focuses on Business Consulting**

Project-Based Learning focuses on consulting with the industry. The implementation of this type of PBL consists of several stages (Figure 3). First, prepare the topic of the project to be carried out. Next, prepare clients from the industry who are willing to become consultants and, if possible, participate in assessing student activities (see Table 3). The third stage prepares student and client meetings for mutual discussion. The fourth stage is review. Students are asked to review and present the results of their consultation. The last is the discussion and negotiation stage. This stage is aimed at selecting which approach is most appropriate for the student project.

![Fig. 3. Type of PBL that focuses on Consultancy](image)

**Table 3. Example of Client and Student Consultancy**

<table>
<thead>
<tr>
<th>Client Industries and Sectors</th>
<th>Project Topics and Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automotive; Club; Drink;</td>
<td>Acquisition targets;</td>
</tr>
<tr>
<td>Fashion; Food; Furniture;</td>
<td>Identifying customers;</td>
</tr>
<tr>
<td>Gallery; Health; Hotel;</td>
<td>Launching a new product;</td>
</tr>
</tbody>
</table>
One of the advantages of the consultancy method is in the non-academic field. Students learn many things that are necessary for success in situations like real-life work. The primary benefit for students is behavioral skills like communication, confidence, English language, planning, thinking, and time management. PBL offers them different skills beyond what students typically obtain in traditional teaching and learning environments [32].

Involvement in external projects allows students to promote vital skills that are not always reflected in test or subject scores. Collaborative skills include patience and compassion, interpersonal competence, accountability skills, soft skills, critical thinking, professional knowledge, communication skills, teamwork, leadership, also consulting skills [32]. One of the important roles is the academic supervisor or lecturer and his/her expertise in appropriate industry and sector knowledge and practical and empathetic client relationship management skills [15].

4 Implications and Suggestions for Future Research

The results of the PBL review in entrepreneurship show that PBL is divided into three types: business development-based PBL, product development-based PBL, and business consulting-based PBL. The three types of PBL have different focuses. Business-based PBL is intended to develop a business. In contrast to product-based PBL, this type focuses on the development of a product. Meanwhile, consultation-based PBL focuses on discussions and consultations with practitioners in the industry. Of the three types of PBL, of course, the application can be different. PBL based on business development and product development can be applied to undergraduate students because they are more focused on finding work experience after graduating from University. Consulting-based PBL seems to be more appropriate for postgraduate students because they are general practitioners, both workers in industry and entrepreneurs. Thus, the PBL type of consultation follows learning objectives at the postgraduate level.

The research findings show that teaching entrepreneurship is not appropriate if it uses traditional teaching methods. Combining PBL teaching methods by choosing either to focus on business development, product development, or business consulting will give students a clearer perspective on entrepreneurship.

5 References


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ISSN: 2593-7650

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