

MSME's Performance – in the Effect of Accounting Digitization

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Abstract. The Disruption era has a huge impact on the development of MSMEs. The role of information technology occupies an important position in supporting profit and productivity. However, the limitations of MSMEs make the technological sophistication less functional. This study aims to analyze how SMEs performance is influenced by the Accounting Digitization in the areas within developing countries that are Semarang (Indonesia) and Kuala Terengganu (Malaysia). This study also compare the implementation of Accounting Digitization by SMEs between those two areas. Primary data were collected using purposive and convenience sampling method toward the SMEs that apply computerize transaction record and/or utilize smart devices for business activities. The selected data were processed using Rank Spearman Correlation test and Mann Whitney. Samples used consist of the SMEs groups in Semarang Indonesia and Kuala Terengganu Malaysia with the total of 338 cases. The results found that there is a signifikan correlation between the implementation of Accounting Digitization and profitability as well as productivity in both groups of respondents. In addition, cases in the two regions of the groups showed that there is a signifikan difference in terms of the implementation of Accounting Digitization.

Keywords: Accounting Digitization, Profit, Productivity

1 Introduction

The dynamic changes in the environment provide challenges for SMEs in maintaining their existence in the market. Business competition occurs not only at the level of fellow SMEs in a region but also at giant companies across countries. It takes smart effort for SMEs to always survive and develop in any condition [1], [2]. With the inherent limitations of SMEs, financial report is a priority that needs to be considered as an evaluation material for the performance of SMEs. Financial reports is a source of company performance information. With the right understanding of performance, SMEs will be able to continue to increase their profit and produce in order to defend themselves.

Researchers have identified the main problems facing SMEs today. They include limited capital and access to capital [3]–[7], limited market access [8], [9] limited resources in

technology [9], [10], and amateur organizations [3], [11]. These problems can be influenced by chaotic accounting and managerial information system factors. The accounting system is a fundamental aspect in producing an adequate supply of information as material for making the right decisions for managers and stakeholders [12]. Meanwhile, information distribution requires a system to regulate and control how information is distributed, from whom and to whom the information should circulate.

The sophistication of technology today provides opportunities and hope for SME managers with all of its advantages and disadvantages [13]. In particular, in order to produce informative financial reports, computer technology and smart devices facilitate digital management and administration of information. Thus, the data that has been inputted will be easier to detect whenever there is manipulation or loss. The accounting information presented will be more systematic and valid so that managers can assess the company's financial performance, including from the aspects of profitability and productivity. Previous research has found a positive impact on the use of technology to increase profitability and productivity. Alnajjar (2017) stated that accounting information systems have significant impact on the management and organizational performance of the UAE 'SMEs. While in Spain, study conducted by Grande, Estébanez, & Colomina (2011) found that accounting digitalization positively impacts on SMEs profitability, but has no effect on productivity. Accounting Information System play a significant role to enhance companies' performance as found in Jordanians' SMEs [15]. The IT touch improves accuracy and the speed, flexibility, and security of information storage in accounting activities [16]. Another study by Karltorp (2017) stated that digital transformation in the Swedish SME business opens up opportunities in improving customer relationships, operational efficiency as well as product and manufacturing. A study of Canada's SMEs found that IT integration is seen as enabling increased growth for manufacturing companies but weakening their productivity [18].

As the above explanation, it seems that digitization in business activities including accounting information has been applied by SMEs around the world, specifically in developed countries. Although there are still many obstacles faced by SMEs, the application of technology to digitize accountants' information still provides long-term benefits for companies. This phenomenon is an interesting issue to be investigated further. The purpose of this study is to analyze the effect of digitizing accounting information on the financial performance of SMEs in the area within developing countries. Respondents were selected from SME populations spread across Semarang Indonesia and Kuala Terengganu Malaysia. Furthermore, this study also examine how Accounting digitization is implemented between the two areas. As the phenomenon of accounting digitization occurs in many countries, this study limits the focus of the population to only two areas, namely in Semarang, Indonesia and Kuala Terengganu, Malaysia. These two regions have in common as the regional capital where Semarang is the capital of the Central Java province in Indonesia and Kuala Terengganu is the capital city of the Terengganu state in Malaysia. Both are also areas in developing countries. SMEs both cities continue to increase every year and have a positive impact on increasing GDP and employment in their respective countries. The application of accounting digitization to SMEs in these two areas is also under development currently. However, the different business backgrounds, markets and organizational cultures of these two regions may result in different processes of applying accounting digitization. Therefore, this research will be an interesting study by comparing how the implementation of accounting digitization from the two regions.

2 Literature Review

2.1 MSMEs in Indonesia and Malaysia

Ogundana et al. (2017) mentioned that definitions and criteria for SMEs are dynamic and are influenced by the level of development of a country. There is no universally accepted definition of SMEs, even of the criteria. As this research raise the Indonesian and Malaysian SME, The following is the SMEs categorization in both countries which are table 1 is the SMEs criteria in Indonesia while table 2 shows table SMEs criteria in Malaysia.

Table 1. SMEs Criteria based on the Unit level in Indonesia

Company Level	Net Asset exclude land and operational building	Annual turnover
Small	Rp50 millions - Rp500 millions	Rp300 millions -Rp2,5 Billions
Medium	Rp500 millions-Rp10 billions	Rp2,5 Billions-Rp50 Billions

Source: Proceeds of Indonesian Law number 20/2008 of Medium Small Micro Enterprises

Table 2. SMEs Criteria based on the Unit Level in Malaysia

Company Level	Sales turnover	Number of full-time employees
Manufacturing Sectors		
Small	RM300,000 - RM15 million	5 - 75
Medium	RM15 - RM50 million	75 - 200
Service and other Sectors		
Small	RM300,000 – RM3 million	5 - 30
Medium	RM3 – RM30 million	30 - 75
If a business fulfils either one criterion across the different sizes of operation, then the smaller size will be applicable		

Source: Proceeds of <https://www.smecorp.gov.my/>

SMEs that are growing quite rapidly in many countries are able to open up wider job opportunities. As their role in reducing unemployment, consequently they also contribute in reducing poverty levels [8], [21], [22]. SMEs is widely spread in many areas in Indonesia including rural areas so that they improve the rural economy. They also provide opportunities to develop entrepreneurial and business skills for their managers [2], [4], [5], [22].

As the significant roles of the SMEs, ironically Wardani & Pramono (2016) found that the development of SMEs still faces many challenges [10]. Margaretha & Supartika (2016) mentioned that they are experiencing ineffective market access. Technological problems also become obstacles in the progress of SMEs [9]. Limited access to capital and lack of human resources are also the main problems faced by MSMEs today [3], [21]. Various researchers by Huda (2012); Tambunan (2012); Zahro & Wahyundaru (2015); and Wardani & Pramono (2016) highlight the main problems faced by SMEs currently related to capital access issues. Other researchers also found problems caused by product marketing and professional managerial application [5], [22].

2.2 Accounting Digitization

According to Nguyen & Nguyen (2020) accounting digitization system is a system that involve people and supporting tools of database, software and hardware, procedures, and network communication to create useful accounting information for making decision. These tools are designed to create information which are concerted from financial and non-financial data so that it can be communicated to any decision makers [25]. Alnajjar (2017) stated that many companies applied online and digital information in their accounting information system for better decision-making. However, investing in such digital devices requires a huge cost [26], [27]. For SMEs, simpler digitalization of accounting information can be applied in any way such as utilizing company websites/blogs or online technology to distribute information and archive document [16], [28]. Ulas (2019) describe that simple digitalization that can be applied with a limited budget can be done trough utilizing smart devices as the company's Standard Operating Procedure in systemizing financial transactions. Investing in accounting information technology will strengthen companies in facing continuous changes [12].

The adoption of accounting digitization resulted in many benefits for SME. It is considered as the factor that increase firm profitability [14], [26], [27]. According to Alnajjar (2017) time saving in serving transaction is better with the help of the accounting information system that is integrated with the new computer devices and information society that dealings with customers and suppliers. Consequently, the sales will increase as more transactions were served. Toanca (2016) found that increases of companies' viability and profitability were happen in the companies that turn to robots and intelligent "things".

The projected growth of a business requires an understanding of the interaction between the implememntation of information technology and the level of productivity [30]. Whereas, lack of support and inefficiency implementation of information technology enable companies experience higher costs and decrease in short term performance [31]. According to Raymond et al. (2013), many SMEs find human and technical problems arisen from the integration of IT. Therefore, managers need to arrange more effective starategy properly prior to the implementation of IT in their business.

2.3 SME's Performance

The performance of SMEs can be indicated by their profitability and productivity. Many researchers discussed the SMEs performance in various point of view. The use of subjective measures of performance is a valid proxy [1]. Many previous research utilize Return on Asset (ROA) and Return on Equity (ROE) as an indicators for the profitability such as research done by Grande, Estébanez and Colomina (2011); Erina & N. Lace (2013); Biancone & Radwan (2015); and Arendt et al. (2019). Ehrhardt & Brigham (2011) describe that ROA is used to measure the company's ability in generating profit to return assets that they are owned while ROE is used to measure net income after tax compared to the equity [34]. The higher the profitability ratio, the better companies' perform in generating profit both for continues operation and return to investor.

In terms of productivity, Sihombing (2018) define that productivity is a measure of the output quantity compare to the input quantity that has been used by company in generating output. It can be indicated by the used of labor cost or working capital in resulting the increase of sales [35]. Raymond et al. (2013) rely on the gross profit per employee ratio that is implemented for manufacturing firms as the productivity indicator. Changes in the information flow and decision processes influence the level of productivity [17] within the

company or organization. The improvement of productivity can be resulted by the proper use of IT innovation [14], [18], [36].

2.4 Hipotesys Development

a) The impact og Accounting Digitization towards SMEs'Profitability

There are many previous studies about the relationship between company performance indicators and IT. Some research prove that there was no relationship between them. However, the findings by Ismail & King (2005) as well as Grande, Estébanez and Colomina (2011) found a positive relationship between the development of accounting information systems and SME performance strategies and measures. In the case of Spain, Naranjo-Gil (2004) found an indirect relationship between accounting information systems and company performance through various strategies that can be adopted by the company. By implementing information systems and technology, the scope of business activities will be broader and the management administration be more efficient covering the need of various stakeholders [18]. Other studies analyze the direction of cause-effect relationships which only high-performance companies are able to implement certain technological developments [39]. Wah (2000) found in his research, the opposite result where company performance declined after the implementation of information technology and it took a long time to experience the benefits of IT adoption [40]. Several studies have found a positive relationship between investment in IT and economic profitability, financial profitability and value added [41]–[43]. Other research shows that there is no clear relationship between the application of information technology and performance indicators [44]. Given that information technology is a basic component of the simple application of the digitalization of accounting information, it is necessary to consider whether the application of the digitalization of accounting information contributes to increasing company profits [45]. MSME profitability indicators can be simply represented by operating profits. Based on the results of previous studies and the above thoughts, hypotesis is developed:

H1: The accounting digitization has positive relationship towards SMEs'profitability in Semarang (Indonesia) Cases

H2: The accounting digitization has positive relationship towards SMEs'profitability in Kuala Terengganu (Malaysia) Cases

b) The impact og Accounting Digitization towards SMEs'Productivity

Research that links IT with productivity mostly supports the claim that the use of appropriate IT can increase company productivity and, thus, have an influence on company growth [46]. According to Raymond, Bergeron and Croteau (2013) countries that invest most in information technology are leaders in productivity growth. In recent years, the value and evolution of productivity is lower than other major economic indicators [35]. Santamaría-Sánchez, Núñez-Nickel, & Gago-Rodríguez (2010) have shown that IT implementation stems from decreased work time and has an impact on cost reduction. Badescu & Garcés-Ayerbe (2009) have analyzed the impact of investment in IT on the productivity of Spanish companies and have found that although the companies in the sample experienced some increase in productivity in the period under consideration, this increase did not significantly stem from IT investment. The productivity indicator in this study is the operational expense per sale [35]. Based on the above explanation the hyp othesis is developed:

- H3: The accounting digitization has positive relationship towards SMEs' productivity in Semarang (Indonesia) Cases
- H4: The accounting digitization has positive relationship towards SMEs' productivity in Kuala Terengganu (Malaysia) Cases
- H5: There is a significant difference between the implementation of accounting digitization of UKM in Semarang and Kuala Terengganu

3 Methods

The population in this study were SMEs in Semarang and Kuala Terengganu. By using purposive and convenience sampling techniques, 175 data were obtained from the Semarang area and 163 data from Kuala Terengganu. The reason for using this technique is to adjust to the research objectives and researchers flexibility to obtain information from respondents. Related to the purposive sampling technique, the selection criteria are SMEs that use computers in recording their transactions or SMEs that use smart devices for their business needs, both communication and documentation. Primary data in this study were sourced from the results of interviews and questionnaire distributed to managers and owners of SMEs in the Semarang and Kuala Terengganu who met the research criteria.

There are three main aspects in this research, namely Accounting Digitization (AD) as the independent variable (X), Profitability (PFT) as the dependent variable (X1) and Productivity (PDV) as the dependent variable (X2). Of the three variables, testing is carried out to analyze the relationship between accounting digitization and profitability and productivity in separate tests. In addition, testing was also separated for the Semarang and Kuala Terengganu areas. The next test was conducted to differentiate the application of accounting digitization between Semarang and Malaysian SMEs. This research was conducted with quantitative methods as primary data were converted numerically using a linkert scale with a range of 1-5 which means 1: strongly disagree, 2: disagree, 3: neutral, 4: agree, 5: strongly agree.

In processing data, researchers use SPSS tools with analytical techniques consist of: rank spearman korelation and Mann Whitney test. Spearman Rank Correlation is used to find the relationship between variables with an ordinal scale. The Spearman Rank correlation used in this study is used to see the degree of closeness of the relationship between accounting digitization and profitability and accounting digitization with productivity. In addition, this relationship will also analyze the direction and significance of the relationship between variables at the probability of significance > 0.05. The following is the Rank Spearman correlation test formula for the hypothesis:

$$r_s = \frac{6x \sum_{i=1}^n D^2}{nx(n^2 - 1)} \quad (1)$$

Descriptions:

- r_s = rank spearman value
- D = rank difference between variables
- n = sample amount
- 1 and 6 = constants

The level of the relationship based on the results of the Spearman rank correlation test is categorized as follows: 1) a value of 0.00-0.25 means that the relationship is very weak. 2) 0.26-0.50 means a weak relationship, 3) 0.51-0.75 means a strong relationship, 4) 0.76-0.99 means a very strong relationship, 5) 1.00 means a perfect relationship.

Meanwhile, Mann Whitney dalam penelitian ini berguna untuk to test the differences between variables with ordinal reasons. The assessment is carried out by looking at the significance value and the mean rank value. If the value of significance or Asymp. Sig. (2-tailed) <0.05 then Ha is accepted. In addition, the mean rank indicates the average rank of each group, which is the group with the higher or lower mean rank.

4 Result and Discussion

4.1 Result of Rank Spearman Correlation

a) Accounting Digitization towards Profitability

Tabel 3 shows the correlation between Accounting Digitization and Profitability in Semarang and Kuala Terengganu. Based on this table, we can see that there is a significant positive relationship in the two equations, namely Accounting Digitization and Profitability in Semarang cases as well as Accounting Digitization and Profitability in Kuala Terengganu cases. This is evidenced by the value of the correlation coefficient which is positive with a significance of 0.008 and 0.00 respectively where the value is <0.05. However, the nature of the correlation that occurred in all cases was very weak with a value of 0.200 while in Kuala Terengganu cases it was weak at a correlation coefficient value of 0.361.

Table 3. Rank Spearman Correlation between AD and PFT in Semarang and Kuala Terengganu

Variable	PFT (Semarang)		PFT (Kuala Terengganu)	
	Correlation Coefficient	Sig. (2-tailed)	Correlation Coefficient	Sig. (2-tailed)
AD (Semarang)	0.200	0.008	-	-
AD (Kuala Terengganu)	-	-	0.361	0.00

Source: Primary data proceeds (2020)

Thus it can be concluded that in all cases, there is a very weak positive relationship between the application of accounting digitization and the profitability of SMEs. Then for Kuala Terengganu cases, that there is a weak and significant positive relationship between the application of accounting digitization to the profitability of SMEs.

b) Accounting Digitization towards Productivity

Regarding the relationship between the application of Accounting Digitization to productivity, table 4 shows the results of the Spearman rank correlation test in the two sample groups. It can be seen that the correlation coefficient value on the Accounting digitization test on productivity in Semarang SMEs is 0.166 with a significance of 0.028 <0.05, which means that there is a significant positive relationship but very weak between the two. Slightly better results appear in the accounting digitization test of productivity in Kuala Terengganu SMEs. The correlation coefficient value obtained is 0.314 with a significance of 0.00 <0.05 where

there is a significant and weak positive relationship between the application of Accounting digitization on the productivity of du Kuala Terengganu SMEs.

Table 4. Rank Spearman Correlation between AD and PDV in Semarang And Kuala Terengganu

Variable	PDV (Semarang)		PDV (Kuala Terengganu)	
	Correlation Coefficient	Sig. (2-tailed)	Correlation Coefficient	Sig. (2-tailed)
AD (Semarang)	0.166	0.028	-	-
AD (Kuala Terengganu)	-	-	0.314	0.00

Source: Primary data proceeds (2020)

c) Differences between the Implementation of Accounting Digitization in Semarang and Kuala Terengganu

Looking at the results of the Mann Whitney test to see the differences in the application of accounting digitization in the two regional groups, it is known that the average value of the application of accounting digitization in Kuala Terengganu is higher with an average value of 225.43 compared to its application in Semarang which only has an average value of 117.40. From the significance result of 0.000, which is less than the probability of the test result 0.05, it explains that the difference in the average above is a significant difference between the implementation of Accounting Digitization in Semarang and Kuala Terengganu.

Tabel 5. Mann Whitney Test of Accounting Digitization in Semarang and Kuala Terengganu

Variable	Mean Rank	Sum of Ranks
AD (Semarang)	117.40	20545.50
AD (Kuala Terengganu)	225.43	36745.50
Mann-Whitney U	5145.500	
Asymp. Sig. (2-tailed)	0.000	

Source: Primary data proceeds (2020)

The use of accounting software is one of efforts to implement digitalization, but the limitations of human resources and capital have resulted in not all SMEs being able to implement it. As stated by Nguyen & Nguyen (2020) and Ulas (2019), digitization of accounting information can be done in various efforts such as the use of the internet in the distribution of financial statements to stakeholders, the use of smart devices in business communications both internal and external as well as archiving transactions and financial reports, and reducing the use of paper that is replaced with electronic documents (paperless documentation). From the various efforts above, almost all respondents stated the important function of smart devices that can improve efficiency in the business communication they do. In addition, digital path also forms part of the evidence of their transactions obtained from on-line transactions for products sold through online shopping applications and social media. They also use e-mail to share information and distribute documents including company financial reports to parties related to the business. Simple computer programs such as Microsoft Excel and Access are also used by some respondents to record trading transactions. With regards to the efforts to implement the accounting digitization, most respondents also stated that some of the benefits they felt were related to the ease of presentation of financial statements. Therefore, the business unit feels helped in terms of measuring their performance as far.

Regarding the examination of the relationship between accounting digitization and profitability, based on the findings obtained, H1 and H2 are accepted where in both research areas, SMEs experience an increase in the profitability ratio along with the increase in the application of accounting digitization. The results of a neat and easily traceable administrative arrangement in a digital record helped companies to improve financial performance. One of the reasons for increased profitability is financial management and the establishment of an appropriate operational strategy. Accounting digitization makes it easier for managers to supervise the company's income and expense transaction cycle. Update on target achievement is also more clearly known at any time by digitally recorded records. Thus, evaluation can also be carried out more quickly if there are indications of a decline in performance or an achievement that is still below the target. This is considered to be a driving force that the increased effectiveness and efficiency of the application of accounting digitization has a positive relationship to profitability. However, the weak relationship that occurs in both regions is due to the very simple use of accounting digitization.

Simple accounting digitization is applied by almost all respondents, especially in Semarang, so that the effect of the relationship between accounting digitization and profitability is not strong. The inherent limitations of SMEs, including the inability to deploy more sophisticated technology tools as well as amateurish operators and technology management, limit SMEs to developing accounting digitization. As a result, the benefits of implementing digitization have not been maximally felt by SMEs in increasing their profits.

The relationship between the application of accounting digitization and the productivity of SMEs in the two groups of survey areas represented by H3 and H4 in this study is also accepted. This means that there is a significant positive relationship between the two variables in the two groups of respondents. A more structured record system with the use of computers and smart devices provides managers with long-term benefits. With the use of digital catalogs, comparisons in purchasing raw materials and supporting materials in terms of price and quality between one supplier and another become more valid. Thus, the company can get the best price for the quality expected. Long distance communication devices and applications also help companies in the effectiveness of operational and promotional communications because these activities will continue to run even if there are no in-person meetings that require a lot of costs such as transportation and consumption in conducting a negotiation. In addition, digital payments and purchasing operational needs are easier to track. Digitalization cannot be denied that it requires a large amount of capital for infrastructure, but along with the resulting efficiency and effectiveness, reducing costs and improving the quality of production will be achieved better than if the company did everything manually for a longer period of time.

The final hypothesis to test for differences in the application of accounting digitization in the two survey areas, namely H5 in this study is accepted. As we can see from the results of the correlation test, the relationship between the two groups shows a significant positive relationship. However, in terms of the strength of this relationship, the value of the closeness of the relationship between accounting digitization on profitability and productivity in the SMEs group in Kuala Terengganu was stronger than in Semarang. In this case, it can be said that the Kuala Terengganu SMEs group is more effective in implementing digitization. Various factors can cause the low benefits of digitization to be utilized in the SME business. In its application, accounting digitization still requires a lot of assistance, especially in terms of skills and skills to operate IT equipment. The results in this study, however, are strongly influenced by the subjectivity of respondents so that these results are only representative for a small part of the group.

5 Conclusion

Accounting information in SME activities is very important to support this performance. Technological advancements encourage the performance of accounting information be more systematic and credible. However, as the inherent limitations of the SME criteria, not all SMEs are able to invest a lot in developing information technology. This research is intended to analyze the effect of digitizing accounting information on the financial performance of SMEs in the area within developing countries. In addition, the test also done to analyze how Accounting digitization is implemented between the survey group areas. Accounting digitization makes it easy for companies to conduct periodic supervision of financial performance. The test results state that all the hypotheses in this study are accepted, namely that there is a correlation between accounting digitization and profitability and productivity in both the SMEs in Semarang and Kuala Terengganu groups, besides that, the comparative test in the application of accounting digitization in the two SMEs groups is also accepted that there are differences in application. accounting digitization of both respondent groups.

With the help of technology as the main tool in implementing accounting digitization, companies have become easier to evaluate. The more effective and efficient the implementation of digital accounting is, the better the company's performance is, in terms of increasing profitability and productivity. However, in this study, from the results of interviews it was found that respondents generally have just implemented the digitization. This may be the reason that the relationship between accounting digitization and profitability and productivity tends to be weak. Investments in equipment and human resources in the application of accounting digitization require a large amount of costs incurred in the early stages of implementation. Thus, the cost overruns that occurred in the early days were still not strong enough to lift sales and profits. However, in the long term, it is expected that cost expenditures will be minimized, and revenues will increase so that the benefits of technology can be increasingly felt in business development at the SME level. Of course, with a variety of support from stakeholders, including the government, owners, management, and other social agencies who care about the development of SMEs in developing countries.

Limitation and Suggestion

In this study there are weaknesses including the limited sample of research that is only represented by business units in one particular area. In addition, the smaller level of business and the background of the research area in areas outside the big city allow the application of digitalization in business activities to be increasingly minimal so that the results for the implementation of digitalization can only be applied to more modern business units. For further research, it can be done to test differences in company performance when implementing digitizing accounting information when it is not yet implemented. This performance can be represented both related to profitability and productivity with other indicators or other variables. Research can also be expanded by comparing research results from different regions or countries with more modern business unit backgrounds.

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