# Firm Innovation, Managerial Ability, Size and Leverage: Impact on Firm Performance

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**Abstract.** Competitive superiority is a way for companies to sustain business performance. RBV theory states that unique resources provide a competing advantage. This study looks at the impact of different factors, including firm innovation, management skill, size, and leverage, on the firm's financial performance as assessed by ROA, ROE, and NPM. The quantitative approach was used to utilize the population of firms listed on the Indonesia Stock Exchange from 2012 to 2022. Both the www.idx.co.id website and datastream were used to obtain the data. There were 87 samples of qualified companies for further investigation. The results showed that managerial ability, size, and leverage variables significantly affected firm performance (ROA and ROE). On the other hand, the firm innovation variable did not affect either ROA or ROE. In model 3 for NPM testing, only size and leverage variables could influence NPM. In contrast, firm innovation and managerial ability variables had no significant impact on NPM. Overall, the average research variables used were only able to influence firm performance (measured by ROA, ROE, and NPM) by 2%-5%.

**Keywords:** firm performance, firm innovation, managerial ability, resources-based view

## 1 Introduction

One of the ways for companies to maintain their position in the competitive strategy is by strengthening their competitive capabilities [1]. [2] state that competitive advantage means creating and maintaining superior performance. However, the way to maintain and sustain competitive advantage has not yet been resolved. Once potential competitors stop imitating the resources and capabilities of successful firms, the equilibrium model of sustainable competitive advantage occurs, especially in a rapidly changing business environment that requires solid corporate resources and can provide a sustainable advantage.

Resources-Based View (RBV) views a firm as a set of resources, where combining multiple resources creates differences between one firm and another, resulting in unique resources. The uniqueness of resources allows firms to gain a competitive advantage [3]. Unique resources must have four characteristics, namely: valuable, rare, imitability imperfect, and non-substitutability, abbreviated as VRIN [4].

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Firm performance is a measurement resulting from utilizing the company's internal [5]. The firm ability to continue its business on an ongoing basis (corporate value creation) is measured by the firm's operating performance. Several surveys highlight that the use of internal resources is associated with firms [6], [7].

The shift from the industrial to the information age has led to recognizing knowledge as a critical factor. In Firms, competitive advantage could be the most prominent innovation source [8], [9]. Companies need strategic assets that competitors cannot replicate to survive and thrive. In the current economy, companies achieve a competitive advantage through various factors, such as knowledge and information, experience and expertise, research and development, relationships with stakeholders, and attitudes toward them.

Innovation is generating new ideas or enhancing existing ones for more extraordinary or efficient advantages. Invention often encompasses creating new technologies or using existing ones in novel ways to improve products or services. Thus, for innovation to become a strategic asset for a company, it must originate from its internal knowledge resources. Knowledge can enhance a company's production productivity and improve overall performance.

According to empirical studies, innovation performance benefits a company's financial arrangement [10]. Innovative companies are more likely to respond to changing market needs and provide different solutions, as noted by [10] [11]. Firms with abundant financial resources have more potential to seize new opportunities than those with financial constraints, allowing them to make higher investments in innovation. Resulting in innovative investment decisions could impact the firm's performance and value. Firm innovation significantly and positively impacts substantial value [12], [13]. Hence, some studies suggest an inverse relationship between firm innovation and firm value despite high investment in innovation [14], [15].

Strengthening the company's competitive advantage necessitates proficient managers who can aptly formulate strategic decisions. Therefore, a dynamic corporate environment requires robust internal company capabilities. The presence of this environment is implemented to innovate the value of external resources, thereby maximizing the firm capacity. Critical internal capability factors often mentioned are people, technology, and knowledge [16], [17]. The innovation capability is believed to be a product of the intellectual capital developed and acquired by an organization [18]. [19] state that managers with a competitive mindset can enhance firm efficiency. The overall efficiency of the company comprises its operational efficiency and managerial competence. Managerial ability degenerates the total firm efficiency towards six firm characteristics: firm size, firm market share, cash availability, life cycle, operational complexity, and foreign operations. The disclosure of intangible assets by top managers' ability demonstrates their ability to enhance efficiency and convert resources into income for the company [20]. Proficient managers excel in comprehending technological and dynamic markets, precisely predicting product markets, investing wisely in high-profit projects, and efficiently managing personnel [21]. Experienced managers can acquire more accurate information regarding investment opportunities, enabling them to make well-informed investment decisions.

The size of a firm can be an indicator of its performance. Firm size is associated with distinct behaviors concerning financial conditions and regulatory requirements. Larger firms can quickly generate internal funds and conveniently access external funds, significantly impacting

their performance. This condition aligns with previous research regarding a positive relationship between firm performance and value [7], [12].

Firm performance is affected by the firm's debt amount, as indicated by the leverage measure. Leverage is assessed to determine the firm's ability to cope with external challenges for conducting research and development. These costs create a significant liability that will probably result in high debt. High levels of leverage have implications on the firm performance.

This study considers specific variables that indicate big companies, companies with low leverage, and profitable companies have more opportunities to enhance sustainable performance [22]. The relationship between business innovation, capability, size, leverage, and performance was further investigated because of this occurrence across all industries listed on the Indonesia Stock Exchange (IDX). The present study examines the impact of firm innovation, capability, size, and leverage on the company's performance. This study is the first to apply the RBV theory and introduce a novel perspective on resources to enhance the company's competitive advantage.

## 2 Research Methods

The quantitative technique was used for this study. The data was obtained from the Datastream database (Refinitiv Eikon) and the website www.idx.co.id to display financial statement data of companies listed in IDX with the observation period 2012-2022. This period was taken with the assumption that during these years most companies in Indonesia had made various verified innovations and management skills in improving firm performance. In addition, the level of firm size and firm leverage in Indonesia was also considered.

All companies listed on the IDX were sampled, and the target companies were those that had enough data to support further study. Based on 2022 data, there were 810 companies. The company sampling criteria are shown in Table 1.

**Table 1.** Research sampling criteria

| Criteria for sampling | Total number of companies |
|---|---|
| Companies that are listed on the IDX in 2022 | 810 companies |
| Companies registered after 2011 | (406) companies |
| Companies with incomplete data to process | (319) companies |
| Companies that became the sample | 87 companies |

Source: Data analyzed (2023)

### 2.1 Definition of variable operations

The dependent variable in this study evaluated company performance. It used accounting-based metrics to gauge the effectiveness of the business, such as Return on Asset (ROA), Return on Equity (ROE), and Net Profit Margin (NPM) [6], [23], [24]. The utilization of these ratios was

positively correlated with the firm performance. A positive after-tax profit implied good performance of the firm. [25] theory was used to quantify company performance.

$$\text{ROA} = \frac{\text{Earning after tax}}{\text{Total asset}} \quad (1)$$

$$\text{ROE} = \frac{\text{Earning after tax}}{\text{Total Equity}} \quad (2)$$

$$\text{NPM} = \frac{\text{Earning after tax}}{\text{Net Sales}} \quad (3)$$

Firm innovation (INOV), managerial ability (MAN), company size (SIZE), and leverage level (LEV) were chosen to measure the independent variables in this study. According to [6], experts argued that spending on research and development impacts firm performance [26]. They found that companies that invested more in research and development exhibited greater dynamic efficiency and flexibility, resulting in improved performance. The study measured firm innovation using the company's research and development intensity as established by [6].

$$\text{Firm Innovation (FINOV)} = \frac{\text{Pengeluaran R\&D tahunan}}{\text{Omset penjualan}} \quad (4)$$

The primary measure to assess managerial ability is known as the MA score. [21] developed the score to estimate how effectively managers utilize firm resources. Every company uses capital, labor, and innovative resources to generate revenue. One can expect managers of superior quality to produce a greater output level from given inputs than their inferior counterparts.

The procedure utilized by [21] was employing data envelopment analysis (DEA) for estimating the efficiency of companies in the industry. It compared the sales generated by each company, considering various inputs such as cost of goods sold, selling and administrative expenses, net Property, Plant and Equipment (PPE), net operating leases, net research and development expenses, purchased goodwill, and other intangible assets. The following formula measures managerial aptitude.

$$\text{Firm efficiency} = \frac{\text{Sales}}{\text{CoGS+SG\&A+PPE+OpsLease+R\&D+Goodwill+other Intangible}} \quad (5)$$

Tangible and intangible assets, including innovative capital, are measured in R&D. This measurement includes other inputs, such as labor and consulting services, whose costs are reflected in sales, general, and administrative costs (SG&A). However, they are not disclosed in the financial statements.

The third independent variable is the firm's size, which will be denoted as 'SIZE' in this study. Typically, larger companies demonstrate superior performance, particularly regarding financial arrangements [26]. Due to their ample resources, larger companies can pursue strategies that improve performance. Moreover, larger companies tend to possess greater market power, which signifies higher company performance, competitive advantage, and the presence of scale efficiency. Therefore, in this study, the size of a firm will be determined by the natural logarithm of its total assets.

$$\text{SIZE} = \text{Ln (Total Aset)} \quad (6)$$

The final independent variable is leverage. Relevant and widely cited studies demonstrate that companies with high leverage create a debt burden that reduces company performance. So, corporate leverage has a negative impact on the financial performance of the company [27]. The

study employs company leverage measured by the ratio of debt to equity owned by the company. (debt to equity ratio-DER) [28].

$$\text{LEV} = \frac{\text{Total Debt}}{\text{Total Equty}} \quad (7)$$

### 2.2 Methods of Data Analysis

The applied analysis method is an econometric model utilizing hypothesis testing through multiple regression analysis. This study employs multiple regression analysis to examine the impact of MA, FINOV, SIZE, and LEV on company performance as measured by crucial financial ratios, including ROA, ROE, and NPM. The multiple regression econometric model is :

Version 1

$$ROA_{it} = \beta_0 + \beta_1 FINOV + \beta_2 MAN + \beta_3 SIZE + \beta_4 \text{LEV} + \varepsilon$$

Version 2

$$ROE_{it} = \beta_0 + \beta_1 FINOV + \beta_2 MAN + \beta_3 SIZE + \beta_4 LEV + \varepsilon$$

Version 3

$$NPM_{it} = \beta_0 + \beta_1 FINOV + \beta_2 MAN + \beta_3 SIZE + \beta_4 LEV + \varepsilon$$

Hypothesis testing examines the appropriateness of theory concepts by analyzing the regression coefficients and determining the significance level for the performance variables of each company. By comparing results on a 5% probability scale, hypothesis testing can be done simultaneously and partially utilizing F and T-tests.

Before moving on to hypothesis testing, the researchers performed a traditional assumption test to see if the regression econometric model showed a significant and representative association. Normality, multicollinearity, heteroscedasticity, and autocorrelation tests are among the performed assumptions tests.

## 3. Result and Discussion

The standard assumption testing procedure uses the one-sample Kolmogorov-Smirnov test method as the initial step to look for normality. Finding out if the residuals follow a normal distribution is the objective. The residual values have a normal distribution if the significance level of the test findings is more significant than 0.05. The test findings showed that the Asymp. The result of the sig value is 0.055. The processed data follow a normal distribution, as shown by the significance level of 0.05 > 0.05 [29].

**Table 2.** Results of Normality Testing

| One-Sample Kolmogorov-Smirnov Test | | |
|---|---|---|
| | | Unstandardized Residual |
| N | | 957 |
| Normal Parameters[b] | Mean | 0,0000000 |
| | Std. Deviation | 0,07569051 |
| Most Extreme Differences | Absolute | 0,103 |
| | Positive | 0,103 |

| | | |
|---|---|---|
| | Negative | -0,078 |
| Test Statistic | | 0,103 |
| Asymp. Sig. (2-tailed) | | 0,055[c] |

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
Source: Output SPSS (Data analyzed, 2023)

The multicollinearity test analyzes whether independent variables in a regression model are intercorrelated or collinear. Evaluating the Tolerance and Variance Inflation Factor (VIF) values is required while testing for multicollinearity. According to Ghozali (2011), if the Tolerance value (TOL) is more significant than 0.100 and the Variance Inflation Factor (VIF) is less than 10.00, there are no signs of multicollinearity. According to the outcomes of data processing for models 1, 2, and 3, the Tolerance (TOL) value for all variables is> 0.100, and the Variance Inflation Factor (VIF) value for all variables is 10.00. This demonstrates that the data was processed and that multicollinearity indicators are absent.

**Table 3.** Results of multicollinearity testing

| Coefficients[a] | | | |
|---|---|---|---|
| | | Collinearity Statistics | |
| Model | | Tolerance | VIF |
| 1 | (Constant) | | |
| | MAN | 0.991 | 1.009 |
| | FINOV | 0.997 | 1.003 |
| | SIZE | 0.997 | 1.003 |
| | LEV | 0.991 | 1.009 |
| a. Dependent Variable: ROA, ROE, NPM | | | |

Source: Output SPSS (Data analyzed, 2023)

The heteroscedasticity test aims to determine whether a variance difference exists between the residuals of individual observations in a linear regression model. A reliable regression model should show homoscedasticity or the absence of heteroscedasticity. The Glejser test can be performed to test for heteroscedasticity by regressing the independent variable against the absolute residuals. The significance value between the independent variable and the total residuals indicates whether heteroskedasticity exists, and a significance value above 0.05 indicates that heteroskedasticity does not exist. According to the test results, all variables shown in Table 4 have a significance value based on an absolute value greater than 0.05. It can be concluded that there is no heteroscedasticity present in the model.

**Table 4.** Results of the heteroscedasticity test

| Coefficients[a] | | | | | | |
|---|---|---|---|---|---|---|
| | | Unstandardized Coefficients | | Standardized Coefficients | | |
| Model | | B | Std. Error | Beta | T | Sig. |
| 1 | (Constant) | 0,000 | 0,029 | | 0,011 | 0,991 |
| | FINOV | -0,013 | 0,020 | -0,021 | -0,652 | 0,515 |
| | SIZE | 0,002 | 0,001 | 0,055 | 1,692 | 0,091 |
| | LnLEV | -0,001 | 0,001 | -0,042 | -1,294 | 0,196 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | LnMAN | -0,003 | 0,002 | -0,048 | -1,469 | 0,142 |
| 2 | (Constant) | 0,168 | 0,073 | | 2,319 | 0,021 |
| | FINOV | -0,043 | 0,050 | -0,028 | -0,861 | 0,390 |
| | SIZE | -0,003 | 0,002 | -0,033 | -1,027 | 0,305 |
| | LnLEV | 0,009 | 0,003 | 0,113 | 3,497 | 0,051 |
| | LnMAN | -0,018 | 0,005 | -0,129 | -3,976 | 0,052 |
| 3 | (Constant) | 0,244 | 0,114 | | 2,143 | 0,032 |
| | FINOV | -0,082 | 0,079 | -0,034 | -1,044 | 0,297 |
| | SIZE | -0,005 | 0,004 | -0,043 | -1,324 | 0,186 |
| | LnLEV | -0,004 | 0,004 | -0,030 | -0,911 | 0,363 |
| | LnMAN | -0,018 | 0,007 | -0,083 | -2,545 | 0,051 |

a. Dependent Variable: ABS_Res4, ABS_Res5, ABS_Res6

Source: Output SPSS (Data analyzed, 2023)

Autocorrelation testing is conducted to detect if there is any correlation between variables in the prediction model and changes over time. The regression model shouldn't contain any autocorrelation. [29] states that the Durbin-Watson value indicating autocorrelation is absent if it falls between du and 4-du. To analyze the results obtained from SPSS, the Durbin-Watson table was used to calculate the du value for model 1 based on k (4) and N (957) with a significance level of 5%. The du value obtained (1.810) < Durbin-Watson (1.958) < 4-du (2.190). The du value (1.810), Durbin Watson (1.859), and 4-du (2.141) are used to evaluate model 2. The value we got when testing model 3 was du (1.810), Durbin Watson (1.846), and 4-du (2.154). The three test findings show no autocorrelation in the data, with the Durbin-Watson value falling between du and 4-du.

**Table 5.** Results of the Autocorrelation Test

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | 0,228[a] | 0,052 | 0,048 | 0,07462 | 1,958 |
| 2 | 0,233[a] | 0,054 | 0,050 | 0,16554 | 1,859 |
| 3 | 0,150[a] | 0,022 | 0,018 | 0,23386 | 1,846 |

a. Predictors: (Constant), LnMAN, FINOV, LnLEV, SIZE

b. Dependent Variable: ROA, ROE, NPM

Source: Output SPSS (Data analyzed, 2023)

### 3.1 Research Result

### Feasibility Test of the Model

The F-value with an average significance level of 0.000 for the three models is shown in Table 6's simultaneous testing of the regression model. This indicates that the value is less than 0.05. According to the findings, the regression model is reliable and may be used to forecast changes in business performance as indicated by ROA, ROE, and NPM.

**Table 6.** Feasibility test for the model (*goodness of Fit*)

ANOVA[a]

| Model | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,285 | 4 | 0,071 | 12,794 | 0,000[b] |
| | Residual | 5,185 | 931 | 0,006 | | |
| | Total | 5,470 | 935 | | | |
| 2 | Regression | 1,459 | 4 | 0,365 | 13,313 | 0,000[b] |
| | Residual | 25,514 | 931 | 0,027 | | |
| | Total | 26,973 | 935 | | | |
| 3 | Regression | 1,165 | 4 | 0,291 | 5,325 | 0,000[b] |
| | Residual | 50,918 | 931 | 0,055 | | |
| | Total | 52,082 | 935 | | | |

a. Dependent Variable: ROA, ROE, NPM
b. Predictors: (Constant), LnMAN, FINOV, LnLEV, SIZE

Source: Output SPSS (Data analyzed, 2023)

Table 7's summary model's regression findings show a minimal coefficient of determination (R2). This indicates that the model could not account for the dependent value's variance. Only 0.052 (5.2%) of Model 1's variables, MAN, FINOV, SIZE, and LEV, explain variations in ROA. Other variables outside the scope of the research model impact the remaining changes in ROA. Similarly, Model 2's ability to explain differences in ROA through MAN, FINOV, SIZE, and LEV variables is only 0.054 (5.4%), and Model 3 can only describe the changes' 0.022 (2.2%).

**Table 7.** Results of the coefficient of determination

Model Summary[b]

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | 0,228[a] | 0,052 | 0,048 | 0,07462 |
| 2 | 0,233[a] | 0,054 | 0,050 | 0,16554 |
| 3 | 0,150[a] | 0,022 | 0,018 | 0,23386 |

a. Predictors: (Constant), LnMAN, FINOV, LnLEV, SIZE
b. Dependent Variable: ROA, ROE, NPM

Source: Output SPSS (Data analyzed, 2023)

The current regression model does not yield a feasible value (*goodness of Fit*). The effect of variables can be partially observed in Table 8.

**Table 8.** Results of regression testing

Coefficients[a]

| Model | | Unstandardized Coefficients B | Std. Error | Standardized Coefficients Beta | T | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | -0,056 | 0,041 | | -1,361 | 0,174 |
| | FINOV | 0,008 | 0,028 | 0,009 | 0,291 | 0,771 |
| | SIZE | 0,003 | 0,001 | 0,077 | 2,410 | 0,016 |
| | LnLEV | -0,009 | 0,001 | -0,200 | -6,258 | 0,000 |
| | LnMAN | 0,005 | 0,003 | 0,068 | 2,134 | 0,033 |
| 2 | (Constant) | -0,178 | 0,091 | | -1,956 | 0,051 |
| | FINOV | 0,038 | 0,063 | 0,019 | 0,610 | 0,542 |
| | SIZE | 0,009 | 0,003 | 0,097 | 3,021 | 0,003 |
| | LnLEV | -0,011 | 0,003 | -0,103 | -3,240 | 0,001 |
| | LnMAN | 0,031 | 0,006 | 0,175 | 5,475 | 0,000 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 3 | (Constant) | -0,296 | 0,128 | | -2,305 | 0,021 |
| | FINOV | 0,060 | 0,089 | 0,022 | 0,679 | 0,497 |
| | SIZE | 0,013 | 0,004 | 0,096 | 2,945 | 0,003 |
| | LnLEV | -0,016 | 0,005 | -0,112 | -3,455 | 0,001 |
| | LnMAN | 0,004 | 0,008 | 0,018 | 0,549 | 0,583 |

a. Dependent Variable: ROA, ROE, NPM

Source: Output SPSS (Data analyzed, 2023)

The following model results were obtained from the regression results:

$$ROA_{it} = -0{,}056 + 0{,}008\,FINOV + 0{,}005\,MAN + 0{,}003\,SIZE - 0{,}009\,\text{LEV} + \varepsilon$$
$$ROE_{it} = -0{,}178 + 0{,}038\,FINOV + 0{,}031\,MAN + 0{,}009\,SIZE - 0{,}011\,LEV + \varepsilon$$
$$NPM_{it} = -0{,}296 + 0{,}060\,FINOV + 0{,}004\,MAN + 0{,}013\,SIZE - 0{,}016\,LEV + \varepsilon$$

If the value of the regression coefficient table is less than 0.05, hypothesis testing will be accepted. The MAN, SIZE, and LEV in model 1 with ROA as the dependent variable have significance values below 0.05. Changes in ROA are influenced by an increase in managerial capabilities, an increase in the company's size, and a decrease (indicated by a negative coefficient) in the level of leverage the company has. The only variable that does not significantly impact increasing ROA is company innovation. Similarly to Model 2, the results remain consistent when ROE is the dependent variable. Unlike model 3, NPM is significantly affected by an increase in company size and a decrease in leverage. Innovation by companies and managerial capabilities have little impact.

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### 3.2 Discussion

The multiple linear regression testing results indicate that the formed regression model is a good fit and can predict ROA, ROE, and NPM, which are the dependent variables. ROA and ROE are affected by company ability, company size, and level of leverage based on partial testing results. However, managerial ability does not affect the NPM company's profit generation from sales.

Managerial ability refers to the capacity of managers to make significant breakthroughs and innovations in decision-making, intending to improve the company's operational efficiency. Managers' decisions can impact the company's return on assets (ROA) and return on equity (ROE) levels but cannot raise the company's net profit margin (NPM).

The study found no evidence that R&D costs of innovation development significantly affected company performance measured by ROA, ROE, and NPM. These findings are consistent with the [30] study, which provides empirical evidence that the company's innovation has no impact on its performance. The decrease in performance due to innovation cannot be immediately felt in the same year, but its impact will become apparent in the long run.

It is implied that Indonesian companies do not explicitly report R&D costs in their financial statements. During the 11 years of observation, the company did not consistently allocate R&D funds to the company's development, including products and management processes that required technological innovation. The R&D activities during the research period were given a relatively small budget compared to their generated sales value. Companies spend, on average, between 1% and 2% of their annual budget on R&D intensity, which measures innovation. The

size and leverage variables strongly impact ROA, ROE, and NPM. Therefore, companies must account for these two variables when assessing corporate performance.

This research does not clarify which level of company size significantly affects company performance, nor does it explain how the level of debt the company holds affects its performance. Previous research has shown a correlation between a company's size, leverage, and performance. One of the limitations of this study is that it did not further test the impact of company ability, size, and leverage level as categorized variables. This will reveal the variable level that significantly impacts the company's performance.

The three models examined in this study make a negligible contribution to the observed changes in company performance, amounting to only 5%, exploring relevant variables that may need to be added as necessary to provide significant variations in company performance.

## 4. Conclusion

This study aims to investigate the impact of corporate innovation, managerial capacity, company size, and leverage on company performance. The sample is a company listed on the IDX in 2012-2022. The sample has sufficient data for further analysis. Eighty-seven samples of companies with complete annual data were obtained. Research data was collected through Datastream services and the IDX website (www.idx.co.id). The study identifies corporate innovation variables as measured by R&D intensity, managerial capability as measured by firm efficiency, company size as measured by the natural logarithm of total assets, and leverage as measured by the ratio of total debt to total equity.

Research data must pass classical assumption tests, including normality, multicollinearity, heteroscedasticity, and autocorrelation tests. The study shows that managerial ability, company size, and leverage significantly affect a company's performance, as measured by ROA and ROE. The study's results stated that the company's innovation did not affect ROA and ROE.

According to Model 3, which tests NPM, only size and leverage variables impact NPM, while the variables for firm innovation and managerial ability have no significant effect. On average, these variables can only have a 2%-5% influence on company performance, as measured by ROA, ROE, and NPM. This suggests additional variables that affect company performance but are not accounted for in the model.

Future research should consider including additional variables that may impact company performance. The tested model has a minimal contribution of 2%-5% to the company's performance, with 99.9% of other variables yet to be included in the research model.

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## References


[1] Priem, R. L. and Butler, J. E. “Is the Resource-Based ‘View’ a Useful Perspective for Strategic Management Research?,” *Acad. Manag. Rev.*, vol. 26, no. 1, p. 22, 2001, doi: 10.2307/259392.
[2] Barney, J. B. D. J. Ketchen, and M. Wright, “Resource-Based Theory and the Value Creation Framework,” *J. Manage.*, vol. 47, no. 7, pp. 1936–1955, 2021, doi: 10.1177/01492063211021655.
[3] Madhani, P.“Resource Based View (RBV) of Competitive Advantage: An Overview,” *... BASED VIEW CONCEPTS Pract. Pankaj …*, no. March, 2010, [Online]. Available: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1578704
[4] Mohammad, H. S. and Bujang, I.“Does intellectual capital influence firms’ financial performance? A comparative analysis into three Malaysian industries,” *Int. J. Bus. Soc.*, vol. 20, no. 1, pp. 260–276, 2019.
[5] Novita, S. and Sahrul, M.“Ownership Structure, Firm Value and Mediating Effect of Firm Performance,” *J. Akunt.*, vol. 24, no. 2, p. 219, 2020, doi: 10.24912/ja.v24i2.692.
[6] Rahman, M. M. and Howlader,M. S. “The impact of research and development expenditure on firm performance and firm value: evidence from a South Asian emerging economy,” *J. Appl. Account. Res.*, vol. 23, no. 4, pp. 825–845, 2022, doi: 10.1108/JAAR-07-2021-0196.
[7] Soewarno, N. and Ramadhan, A. H. A.“The effect of ownership structure and intellectual capital on firm value with firm performance as an intervening variable,” *Int. J. Innov. Creat. Chang.*, vol. 10, no. 12, pp. 215–236, 2020.
[8] Weqar,F. and S. M. I. Haque, “Intellectual Capital and Corporate Financial Performance in India’s Central Public Sector Enterprises,” *Int. J. Learn. Intellect. Cap.*, vol. 17, no. 1, p. 1, 2020, doi: 10.1504/ijlic.2020.10023754.
[9] Salehi,M. S. Ahmadzadeh, and Sorkh,F. I. Q. “The impact of intellectual capital and related party transactions on contractual costs,” *Int. J. Product. Perform. Manag.*, vol. 71, no. 1, pp. 156–181, 2022, doi: 10.1108/IJPPM-03-2020-0088.
[10] Silwal, P. P. and P. P. Silwal, “Corporate cultures and financial performance : The mediating role of firm innovation Corporate cultures and financial performance : The mediating role of firm innovation,” *Cogent Bus. Manag.*, vol. 9, no. 1, pp. 1–20, 2022, doi: 10.1080/23311975.2021.2010480.
[11] Buallay, A. A. A. Abuhommous, and G. Kukreja, “The relationship between intellectual capital and employees’ productivity: evidence from the Gulf Cooperation Council,” *J. Manag. Dev.*, vol. 40, no. 6, pp. 526–541, 2021, doi: 10.1108/JMD-05-2019-0210.
[12] Firdausya,C. W. D. Agustia, and Y. Permatasari, “The relationship between performance, innovation, earnings management and firm value: An Indonesian case,” *Int. J. Innov. Creat. Chang.*, vol. 11, no. 11, pp. 262–282, 2020.
[13] Venter, E. and H. Hayidakis, “Determinants of innovation and its impact on financial performance in South African family and non-family small and medium-sized enterprises,” *South. African J. Entrep. Small Bus. Manag.*, vol. 13, no. 1, pp. 1–14, 2021, doi: 10.4102/sajesbm.v13i1.414.
[14] Zhang, Y. and Z. Ouyang, “Doing well by doing good: How corporate environmental responsibility influences corporate financial performance,” *Corp. Soc. Responsib. Environ. Manag.*, vol. 28, no. 1, pp. 54–63, 2021, doi: 10.1002/csr.2031.
[15] Mulyati, Y. *et al.*, “Intellectual Capital and Financial Performance (Empirical Study on The Automotive Industry And Components Listed On The Indonesia Stock Exchange For The 2016-2019),” *Rev. Int. Geogr. Educ. Online*, vol. 11, no. 5, pp. 886–893, 2021, doi: 10.48047/rigeo.11.05.84.
[16] Salim, N. M. N. Ab Rahman, and D. Abd Wahab, “A systematic literature review of internal capabilities for enhancing eco-innovation performance of manufacturing firms,” *J. Clean. Prod.*, vol. 209, pp. 1445–1460, 2019, doi: 10.1016/j.jclepro.2018.11.105.
[17] Pacheco,D. A. de J. C. S. ten Caten, C. F. Jung, J. L. D. Ribeiro, H. V. G. Navas, and V. A. Cruz-Machado, “Eco-innovation determinants in manufacturing SMEs: Systematic review and

research directions," *J. Clean. Prod.*, vol. 142, no. October 2017, pp. 2277–2287, 2017, doi: 10.1016/j.jclepro.2016.11.049.
[18] McDowell, W. C. W. O. Peake, L. A. Coder, and M. L. Harris, "Building small firm performance through intellectual capital development: Exploring innovation as the 'black box,'" *J. Bus. Res.*, vol. 88, no. June 2017, pp. 321–327, 2018, doi: 10.1016/j.jbusres.2018.01.025.
[19] Jebran K. and S. Chen, "Corporate policies and outcomes during the COVID-19 crisis: Does managerial ability matter?," *Pacific Basin Financ. J.*, vol. 73, no. November 2021, p. 101743, 2022, doi: 10.1016/j.pacfin.2022.101743.
[20] Rajabalizadeh J. and J. Oradi, "Managerial ability and intellectual capital disclosure," *Asian Rev. Account.*, vol. 30, no. 1, pp. 59–76, 2022, doi: 10.1108/ARA-11-2020-0180.
[21] Demerjian,P. R. B. Lev, M. F. Lewis, and S. E. McVay, "Managerial ability and earnings quality," *Account. Rev.*, vol. 88, no. 2, pp. 463–498, 2013, doi: 10.2308/accr-50318.
[22] Ionita, C. and E. Dinu, "The Effect of Intangible Assets on Sustainable Growth and Firm Value – Evidence on Intellectual Capital Investment in Companies Listed on Bucharest Stock Exchange," *Kybernetes*, vol. 50, no. 10, pp. 2823–2849, 2021, doi: 10.1108/K-05-2020-0325.
[23] Ghasemaghaei, M. S. Ebrahimi, and K. Hassanein, "Data analytics competency for improving firm decision making performance," *J. Strateg. Inf. Syst.*, vol. 27, no. 1, pp. 101–113, 2018, doi: 10.1016/j.jsis.2017.10.001.
[24] Vanacker, T. S. A. Zahra, and R. M. Holmes, "Corporate entrepreneurship, country institutions and firm financial performance," *J. World Bus.*, vol. 56, no. 3, p. 101162, 2021, doi: 10.1016/j.jwb.2020.101162.
[25] Van Horne, J. C. *Financial Management and Policy*. 2002. doi: 10.2307/2325369.
[26] Abou-foul, J M.. L. Ruiz-Alba, and A. Soares, "The impact of digitalization and servitization on the financial performance of a firm: an empirical analysis," *Prod. Plan. Control*, vol. 32, no. 12, pp. 975–989, 2021, doi: 10.1080/09537287.2020.1780508.
[27] Tahat, Y. A. A. H. Ahmed, and M. M. Alhadab, "The impact of intangibles on firms' financial and market performance: UK evidence," *Rev. Quant. Financ. Account.*, vol. 50, no. 4, pp. 1147–1168, 2018, doi: 10.1007/s11156-017-0657-6.
[28] Usman, S. K. Wambal and F. B. Ibrahim, "Determinants of Entrepreneurial Financial Performance in Nigeria: A Literature Review," *J. Manag. Sci.*, vol. 4, no. 1, pp. 189–198, 2021.
[29] Sekaran, U. and R. Bougie, *Research Methods for Business: A Skill-Building Approach*, no. 7 Edition. 2016. doi: 10.1108/lodj-06-2013-0079.
[30] Santos, D. F. L. L. F. C. Basso, H. Kimura, and E. K. Kayo, "Innovation efforts and performances of Brazilian firms," *J. Bus. Res.*, vol. 67, no. 4, pp. 527–535, 2014, doi: 10.1016/j.jbusres.2013.11.009.