Firm Size, Leverage and Corporate Governance Mediated Intellectual Capital on Firm Performance

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ABSTRACT
This study was conducted to determine the effect of firm size, leverage and corporate governance mediated by intellectual capital on firm performance of food and beverages companies listed on the Indonesia Stock Exchange during the period 2018-2020. The sample used in this study were 36 companies using purposive sampling technique. The results of the analysis show that firm size and corporate governance does not have a significant effect on firm performance, while the leverage have a positive and significant effect on firm performance. Corporate governance does not have a significant effect on intellectual capital, while the firm size and leverage have a significant effect on intellectual capital. Firm size, leverage and corporate governance does not have a significant effect on firm performance using intellectual capital as mediation.

Keywords: Firm size, leverage, corporate governance, firm performance, intellectual capital

1. INTRODUCTION

In assessing a company, it can be seen from the high or not the performance of a company. There are several factors that affect the company's financial performance, namely profitability, leverage and company size (Widarsono and Hadiyanti, 2015) [1]. Putu Ayu and Gerianta (2018) suggest that company size is a scale where the size of the company can be classified as measured by total assets, total sales, share value and so on [2]. A large company size will usually find it easier to get funding sources from internal and external parties so that it can improve firm performance.

Leverage measurement is used to determine the percentage of company funding that comes from long-term debt with company equity [3]. Leverage measurement can calculate the percentage of debt owned by the company [4].

Good corporate governance of a company is very important, because the financial condition of a company can improve or deteriorate depending on the good corporate governance of a company [5]. According to Suardikha (2016), good corporate governance is one of the important factors that support the success of the company and also to increase the value of the company in generating profits [6]. Corporate governance has a significant relationship to company performance. Slusarczyk (2018) states that industry 4.0 is a new reality in the modern economy and innovation and technological development now have an important role in organizations [7]. Therefore, companies must have good intellectual capital in order to compete with other companies because intellectual capital is a valuable asset that can encourage innovation and technological development [8].

Several studies on the impact of intellectual capital on firm performance also still show inconsistent results. In addition, the average firm size and leverage of the company are still not good and the implementation of the concept of good corporate governance in Indonesia is still low. Therefore, the purpose of this research is to study the effect of corporate governance on firm performance. The role of intellectual capital as a mediating variable is also tested whether it is able to mediate the influence of corporate governance on firm performance.
2. LITERATURE REVIEW

According to the generation type of assumptions, we divided the existed work into three categories.

2.1. Shareholder Theory

Shareholder theory explains that to increase company value, company management and shareholders will work together [9]. Smurdon said that increasing shareholder value is the most basic responsibility for the board [10]. Using and managing resources appropriately can add value to the company and the company's financial performance (firm performance).

2.2. Resource-based Theory

Resource-Based Theory explains that differences in the quality of input resources cause differences in company performance in the industry (Marzo, 2014) [11]. This theory reviews how a company utilizes and manages company resources. The resources in question are in the form of tangible assets as well as intangible assets. Intellectual Capital is an intangible asset.

2.3. Stewardship Theory

Stewardship theory can be assumed as a strong relationship between owner satisfaction and organizational success [12]. In order to maximize the utility function of the company, the steward will maximize the company's wealth and also protect it by increasing firm performance.

2.4. Firm Performance

Wirawan in Ma'ruf Abdullah (2014) states that performance is an output produced by the functions or indicators of a job or profession within a certain time. Firm performance is a subjective measure of how a company can use the assets of its main business and generate revenue from that business [13].

2.5. Firm Size

According to Riyanto (2013), company size is the size of the company and this can be seen from the total value of equity, sales, and assets [14]. In general, there are 3 categories of grouping of companies on the basis of scale of operation, namely large companies (large firms), medium-sized companies (medium-size), and also small companies (small firms).

Raihana (2019) in Manufacturing Companies in the Consumer Goods sector which are listed on the Indonesia Stock Exchange and the Malaysia Stock Exchange in 2014-2017 which partially shows the results of the study that company size has a negative and significant effect on ROA. Besides that, research from Utomo and Chariri (2015) found that firm size has a positive effect on intellectual capital.

2.6. Leverage

According to Suhermin (2014), leverage is the amount of company assets financed by debt [15]. Leverage refers to the company's debt, the company's source of funds can be divided into two sources of internal and external funding. Sofyan Syafri Harahap (2013) says that leverage is a ratio that describes the relationship between the company's debt to capital, which means that the ratio can see how far the company is financed by debt or external parties with the company's ability described by capital [16].

Lavorskyi (2013) found that there is a negative relationship between financial leverage and firm performance measures. Besides that, research from Bangun et al. (2017) and Silalahi and Ardini
(2017) examine the results of their research showing that leverage as measured by DER has a negative and significant effect on intellectual capital disclosure.

2.7. Corporate Governance

According to Dalwai, Basirudin and Abdul (2015), good corporate governance is a regulation enforced through different internal and external institutions to resolve agency conflicts and protect the interests of the organization's shareholders to ensure that the company is run in a responsible and accountable manner so as to improve overall performance [17]. There are five main components in the concept of good corporate governance, namely fairness, accountability, independence, responsibility, and transparency.

Kazgi & Gua (2017) found that the role of women on the board of directors as an indicator of corporate governance has an effect on firm performance. Besides that, Haji and Ghazali (2013) and Appuhami and Bhuyan (2015) who found a significant positive effect between independent directors and intellectual capital so that the hypothesis that can be concluded is that corporate governance has a positive influence on intellectual capital performance.

2.8. Intellectual Capital

According to Kusuma and Mahmud (2015), intellectual capital is the ability, skill, expertise, and form of knowledge that is useful in the organization as a competitive advantage for the company so that it can compete and survive in the market and increase the company's wealth [18]. Intellectual capital is identified with three main parts, namely Human Capital, Relational Capital/Customer Capital and Organizational Capital/Structural Capital.

Nimtrakoon (2015) found that intellectual capital has a positive effect on financial performance in companies listed in the UK, Indonesia, Malaysia, Philippines, Singapore, and Thailand and this is also supported by Amin et al. (2014), Hejazi, Ghanbari & Alipour (2016), Nadeem, Gan & Nguyen (2018), and Maji & Goswami (2017) who found that intellectual capital had a positive effect on firm performance.

3. THEORETICAL FRAMEWORK

3.1. The Effect of Firm Size on Firm Performance

According to Ruspandi and Asma (2014), companies that have a larger company size will cause the organization to be large and will result in large operational costs [19]. This is because costs such as natural resources and depreciation will increase. This causes a decrease in profits for the company.

H₁: Firm Size has a negative effect on Firm Performance

3.2. The Effect of Leverage on Firm Performance

Financial leverage can affect the company's performance positively because leverage can be treated as a tool to discipline management [20]. Thus, a positive relationship between financial leverage and firm performance is expected based on agency cost theory.

H₂: Leverage has a positive effect on Firm Performance

3.3. The Effect of Corporate Governance on Firm Performance

The purpose of corporate governance is to advance the company's financial performance (firm performance). Classens and Yurtoglu (2013) say that a lack of corporate governance can lead to a financial crisis [21]. Therefore, to avoid this, one way that can be done to improve firm performance is to have good corporate governance.

H₃: Corporate Governance has a positive effect on Firm Performance
3.4. The Effect of Firm Size on Intellectual Capital

According to Nugroho (2012), the larger the size of the company, the greater demands for disclosure to the public compared to smaller companies because large companies that disclose more information to the market, both financial and non-financial information, try to imply that companies have perform good management and raise funds from investors [22]. In developing intellectual capital performance, large companies with large assets have greater opportunities than small companies [23]. Agency theory is related to the relationship between firm size and intellectual capital. In general, large companies have higher agency costs than small companies [24].

H₄: Firm Size has a positive effect on Intellectual Capital

3.5. The Effect of Leverage on Intellectual Capital

High leverage will result in high agency costs due to high financial difficulties (Mondal & Ghosh, 2014). The high level of corporate debt will affect the principal. Therefore, agency costs are needed by the principal to maintain the company. Disclosure of intellectual capital will be a consideration for companies in order to reduce agency costs.

H₅: Leverage has a negative effect on Intellectual Capital

3.6. The Effect of Corporate Governance on Intellectual Capital

The increase in firm performance will be better if it is in line with the increase in intellectual capital. Firm performance is an important thing that must be achieved by every company everywhere, because this is a reflection of the company's competence in managing and allocating its resources so that it requires good business governance to manage it.

H₆: Corporate Governance has a positive effect on Intellectual Capital

3.7. The Effect of Intellectual Capital on Firm Performance

In the knowledge economy, intellectual capital is considered a more important contributor to the company than tangible assets in increasing the company's competitiveness and value generation (Jelinkova & Jirincova, 2015) [25]. Intellectual Capital has a very important role in improving company performance [26]. Besides that, intellectual capital is a resource that provides a competitive advantage which means intellectual capital have a positive impact on firm performance [27]. Therefore, companies need a methodology to identify and measure intellectual capital (Bayraktaroglu et al., 2019).

H₇: Intellectual Capital has a positive effect on Firm Performance

3.8. The Effect of Firm Size on Firm Performance with Intellectual Capital as a Mediation Variable

Company performance has a harmonious relationship with intellectual capital [28]. Where, a company that has good intellectual capital means that the company has a good firm performance as well. In general, large companies will increase their company's intellectual capital so that the company's performance also increases and because large companies have larger funds, large companies will be more leverage in managing and developing the company's intellectual capital [29].

H₈: Firm Size has a positive effect on Firm Performance with Intellectual Capital as a Mediation Variable

3.9. The Effect of Leverage on Firm Performance with Intellectual Capital as a Mediation Variable

A company's financial performance refers to the environment, which is how well companies use their resources, intellectual capital and capital structure, to generate revenue [30]. Leverage is inversely proportional to the company's performance [31]. This is because according to Azzahra &
Nasib (2019), the use of high debt will be a heavy burden for the company in carrying out company operations and will also affect the company’s sustainability. 

H₉: Leverage has a positive effect on Financial Performance with Intellectual Capital as a Mediation Variable

3.10. The Effect of Corporate Governance on Intellectual Capital with Firm Performance as a Mediation Variable

Makki and Lodhi (2014) investigated the critical structural relationship between corporate governance, intellectual capital efficiency and firm performance [32]. They did not find a direct relationship between corporate governance and corporate finance. However, companies that have good corporate governance have a significant positive impact on intellectual capital efficiency which indirectly increases the firm performance of a company [33].

H₁₀: Corporate Governance has a positive effect on Firm Performance with Intellectual Capital as a Mediation Variable

4. METHODS

The methodology of this research is quantitative research with secondary data obtained from the official website of the Indonesia Stock Exchange. In selecting the sample, the method used was purposive sampling with research subjects of food and beverages companies that were consistently listed during 2018-2020 with the following criteria: 1) food and beverages sector companies listed as issuers on the Indonesia Stock Exchange (IDX) during 2018-2020, 2) food and beverages sector companies that publish routine financial reports during 2018-2020, 3) food and beverages sector companies that present financial report data using the rupiah currency during the 2018-2020 period, 4) sector companies food and beverages that did not conduct an Initial Public Offering (IPO) during 2018-2020, 5) food and beverages sector companies that have data on intellectual capital during the period 2018-2020. The total number of valid samples is 36 companies. After the data has been collected, the researcher will analyze the data using the EViews 12 program. The tests that will be used are descriptive statistical tests, panel data regression model tests, classical assumption tests, regression analysis tests, hypothesis testing and mediation test.

Table 1 Operational Variable

<table>
<thead>
<tr>
<th>Variabel</th>
<th>Ukuran</th>
<th>Skala</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm Performance</td>
<td>Market Value of Equity + Preferred Stock + Debt / Total Asset</td>
<td>Rasio</td>
</tr>
<tr>
<td>Firm Size</td>
<td>Firm Size = LN of Total Asset</td>
<td>Rasio</td>
</tr>
<tr>
<td>Leverage</td>
<td>Debt to Assets Ratio (DAR) = Total Debt / Total Asset</td>
<td>Rasio</td>
</tr>
<tr>
<td>Corporate Governance</td>
<td>Setiap item untuk setiap perusahaan di empat sub-indeks dicatat “1” jika item itu diungkapkan dan “0” jika sebaliknya</td>
<td>Nominal</td>
</tr>
<tr>
<td>Intellectual Capital</td>
<td>- ( V_{AI}a = C_{EA} + H_{CE}a + S_{CE}a ) ...1</td>
<td>Rasio</td>
</tr>
<tr>
<td></td>
<td>- ( C_{EA} = \frac{V_{AI}}{C_{E}} ) ...2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- ( H_{CE}a = \frac{V_{AI}t}{H_{C}} ) ...3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- ( S_{CE}a = \frac{S_{C}}{V_{AI}t} ) ...4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- ( V_{A}a = OP_a + EC_a + Da + D_a ) ...5</td>
<td></td>
</tr>
</tbody>
</table>
5. RESULTS

5.1. Estimation of the Regression Model Coefficient

Based on the results obtained from the determination of the panel data test in regression equation 1, the model that will be used is the Fixed Effect Model approach. The results of the first regression analysis are as follows:

| Table 2 Results of Multiple Linear Regression Analysis 1 |
|----------------|----------------|----------------|
| Variable       | Coefficient    | Probability    |
| C              | -60.75238      | 0.0694         |
| Firm Size      | 10.31835       | 0.0415         |
| Leverage       | -6.988033      | 0.0002         |
| Corporate Governance | 0.165989 | 0.7704 |

(Source: Results of data processing with EViews 12)

From these test results of Multiple Linear Regression Analysis 1 in Table 2 above, it can be seen that the regression equation 1 used in this study is as follows:

\[ IC = -60.75238 + 10.31835FS - 6.988033Leverage + 0.165989CG + \varepsilon \]

Coming on the results of regression equation 1 above, it can be concluded that the constant value is -60.75238. The constant value obtained explains that if firm size, leverage and corporate governance are zero (0), then firm performance will be worth -60.75238.

Coming on the results obtained from the determination of the panel data test in regression equation 2, the model that will be used is the Random Effect Model approach. The results of the second regression analysis are as follows:

| Table 3 Results of Multiple Linear Regression Analysis 2 |
|----------------|----------------|----------------|
| Variable       | Coefficient    | Probability    |
| C              | 3.821124        | 0.0562         |
| Firm Size      | -0.601736       | 0.0575         |
| Leverage       | 0.802074        | 0.0003         |
| Corporate Governance | 0.027283 | 0.6302 |
| Intellectual Capital | -0.006783 | 0.6010 |

(Source: Results of data processing with EViews 12)

From the test results of Multiple Linear Regression Analysis 2 in Table 3 above, it can be seen that the regression equation 2 used in this study is as follows:

\[ FP = 3.821124 - 0.601736FS + 0.802074Leverage + 0.027283CG - 0.006783IC + \varepsilon \]

Coming on the results of regression equation 2 above, it can be concluded that the constant value is 3.821124. The constant value obtained explains that if firm size, leverage and corporate governance are zero (0), then firm performance will be worth 3.821124.
5.2. Mediation Test (Sobel Test)

<table>
<thead>
<tr>
<th>Uji Sobel (X1)</th>
<th>Uji Sobel (X2)</th>
<th>Uji Sobel (X3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.51</td>
<td>0.52</td>
<td>-0.26</td>
</tr>
</tbody>
</table>

(Source: Data processing results with EViews 12)

5.3. Simultaneous Test (F-Test)

<table>
<thead>
<tr>
<th>Regression Equation</th>
<th>Prob. F-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.000000</td>
</tr>
<tr>
<td>2</td>
<td>0.000488</td>
</tr>
</tbody>
</table>

(Source: Data processing results with EViews 12)

From the regression equation model 1 in table 5, it can be concluded that firm size, leverage and corporate governance if tested together or simultaneously have an effect on variable Z, namely intellectual capital.

From the regression equation model 2 in table 5, it can be concluded that firm size, leverage, corporate governance and intellectual capital if tested together or simultaneously have an effect on variable Y, namely firm performance.

5.4. Multiple Coefficient of Determination Test ($R^2$)

<table>
<thead>
<tr>
<th>Regression Equation</th>
<th>Adjusted R-squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.716954</td>
</tr>
<tr>
<td>2</td>
<td>0.143364</td>
</tr>
</tbody>
</table>

(Source: Data processing results with EViews 12)

Coming from the test results of the Multiple Coefficient of Determination ($R^2$) in Table 6 above, the results of the multiple determination coefficient test show that 71.7% of intellectual capital can be explained by firm size, leverage and corporate governance. While the remaining 28.3% can be influenced or explained by other variables outside this study.

Coming from the test results of the Multiple Determination Coefficient ($R^3$) in Table 6 above, the results of the multiple determination coefficient test show that 14.34% of firm performance can be explained by firm size, leverage and corporate governance, and intellectual capital. While the remaining 85.66% can be influenced or explained by other variables outside this research.

6. DISCUSSION

6.1. The Effect of Firm Size on Firm Performance

The results of the interaction test between firm size and firm performance show the effect in a negative direction. This shows that a company with a large firm size will reduce the value of firm performance.

The effect is not significant because the average firm size in food and beverage companies is of medium size. This can be seen based on the descriptive statistical table which shows that the mean value is close to the median value. Therefore, it can be concluded that firm performance in food and
beverages companies is not good. So, it can be concluded that firm size has no effect on firm performance.

6.2. The Effect of Leverage on Firm Performance

A positive coefficient explains that the higher the leverage value of a company, the firm's performance will increase. This means that increased debt will increase firm performance.

This is because a high debt ratio tends to have a high rate of return on funds so that it benefits investors and shareholders. This is in line with shareholder theory which explains the importance of the role of shareholders for the sustainability of the company. A significant influence in this study explains that the company has a good percentage of leverage. So, it can be concluded that leverage has an effect on firm performance.

6.3. The Effect of Corporate Governance on Firm Performance

Corporate governance has a positive relationship with firm performance. This study shows that corporate governance has no significant effect on firm performance. The sample calculated by the corporate governance index has a total of 32 characteristics. It can be seen that based on the sample studied, a total of 36 companies from the 2018-2020 period, on average only managed to fulfill less than half the number of characteristics that should describe good corporate governance. This is because many companies comply with corporate governance regulations only for formalities. When viewed from one of the corporate governance variables, namely the existence of independent commissioners, they do not carry out their duties properly nor do they use their independence to oversee the policies of the directors. So, it can be concluded that corporate governance has no effect on firm performance.

6.4. The Effect of Firm Size on Intellectual Capital

Firm size has a positive relationship to intellectual capital. Developing intellectual capital in a company is the biggest asset that a company can have to maintain the continuity of its company in the future. So every company must develop intellectual capital for the welfare of the company. Firm size is the size of a company indicated by total assets, total sales, average total sales and average total assets. The larger the size of a company, the funds used for investment in intellectual capital also increase. Thus, the intellectual capital of the company will increase and be more optimal. Therefore, firm size has a positive relationship to intellectual capital.

6.5. The Effect of Leverage on Intellectual Capital

High leverage means the company will bear greater costs. Therefore, an increase in leverage can make the company's intellectual capital performance decrease.

Significant results explain that the company's finances are in good condition. In addition, it can be interpreted that the company has successfully implemented the company's intellectual capital well. The company can divide the assets between the costs required to apply intellectual capital and also the company's debt.

6.6. The Effect of Corporate Governance on Intellectual Capital

Corporate governance that has a positive effect on intellectual capital explains that if the company has good corporate governance, the company's intellectual capital will also increase.

Insignificant research can be explained based on companies that do not meet good corporate governance. Based on the sample studied, out of 36 companies, only one company met 20 characteristics in the 2018-2020 period. On average, companies only meet half of the corporate governance index, which is 32. This happens because the function of independent commissioners in the company is not yet effective as a supervisory tool because the appointment of independent commissioners is only intended to comply with corporate governance regulations that apply in
Indonesia. The appointment of independent commissioners is carried out by the company as a form of formality only. So, the independent commissioner does not perform the duties that should be his obligations.

6.7. The Effect of Intellectual Capital on Firm Performance

The results of this research on the intellectual capital variable indicate that the company's intellectual capital cannot increase the company's profit so that the company's financial performance decreases.

The insignificance of the results of this study is caused by companies that are not able to create added value for their companies from the funds that have been spent on labor. This can be seen from the absence of contributions from structural capital and customer capital in creating value for the company, so that there is no increase in firm performance. In addition, the non-significant influence of the VAIC is caused by the policies of each company that do not support the creation of the VAIC. In this case, the less than optimal VAIC can be seen from the low value of the company's structural capital and customer capital. Structural capital owned by the company on average only amounts to 0 or 1 and the majority of the company's customer capital only amounts to 0. So it can be concluded that intellectual capital does not affect firm performance.

6.8. The Effect of Firm Size on Firm Performance with Intellectual Capital as a Mediation Variable

The insignificant effect on the results of this study can be seen based on the sample data processed in this study. The results of the firm size calculation are calculated with the average medium-sized company so that it does not make intellectual capital decrease. But on the other hand, the company's intellectual capital calculated by the Value-Added Capital Coefficient (VAIC) shows that the company's intellectual capital is not good. This can be seen from the value of structural capital which only amounts to 0 or 1 and the value of the company's customer capital, which in the majority only amounts to 0. So this causes the company's firm performance to decrease. Therefore, it can be concluded that intellectual capital is not able to mediate the effect of firm size on firm performance.

6.9. The Effect of Leverage on Firm Performance with Intellectual Capital as Mediation Variable

The insignificant effect in this study is because the company's leverage is in poor condition, meaning that the debt owned by the company is quite high. Therefore, the company will prioritize paying off its debts rather than channeling funds for the company's intellectual capital which will reduce the firm's performance. Because poor intellectual capital can make firm performance decline. This is in line with the statement Nimtrakoon (2015) found that intellectual capital has a positive effect on financial performance.

It is possible that in the research year it was not appropriate to increase the level of leverage because it was not supported by the ability of creditors to repay funds and loan interest in a timely manner due to unstable economic conditions and unfavorable for large-scale expansion and lending. So, it can be concluded that intellectual capital is not able to mediate the effect of leverage on firm performance.

6.10. The Effect of Corporate Governance on Firm Performance with Intellectual Capital as a Mediation Variable

The insignificant effect occurs because good corporate governance is not applied to food and beverages companies. Appuhumi and Bhuyan (2015) who found a significant positive effect between independent directors and intellectual capital. But on the other hand, based on a research sample of 36 companies for the 2018-2020 period, it can be seen that these companies are far from having good corporate governance. They only apply half of the characteristics that reflect good corporate governance, which are 32 characteristics. Thus, poor corporate governance makes intellectual capital decline which has an impact on decreasing firm performance. This is in line with Nimtrakoon (2015)
who found that intellectual capital has a positive effect on financial performance. So, it can be concluded from this study that intellectual capital is not able to mediate the influence of corporate governance on firm performance.

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