Gender Diversity, Board Composition, Intellectual Capital and Its Effect on Firm Performance

Rehgita Ayu Lestari

Management Department, Faculty of Economics, Universitas Negeri Semarang, Semarang, Indonesia

INTRODUCTION

The increasing development of technology and information has an impact on increasing competition and innovation in terms of economy and business (Noorkhaista & Sari, 2017). Competition faced by the firm must be balanced with optimal management from the internal side as the basis for the implementation of each firm activities (Ariani, 2019). One way that companies can survive in competition is to create competitive advantages and good value for the firm.

The firm performance is one aspect of the firm success that is very important (Izah & Ardiansari, 2019). According to Iswadi (2016), the firm performance can be interpreted as achievements achieved by the firm in a certain period. The firm performance is the basis of consideration for investors to assess the performance and future prospects of the firm in order to determine investment desperation (Baroroh, 2014).

Assessment of the firm performance can be done using financial and non-financial measures. If based on the firm goal to make a profit, then almost every firm performs its performance measurement using the financial aspect (Izah & Ardiansari, 2019). One of them is by looking at the firm ability to generate profit (Fathonah, 2018). The firm profit is an indicator of the firm ability to fulfill its obligations to funders and as a step to create corporate value (Wardoyo & Veronica, 2013). Therefore, to take measurements of the firm performance is usually done by looking at the profitability ratio. One of them is the Return On Asset (ROA) ratio.

The firm will always strive to improve the firm performance. One of the efforts in improving the firm performance is to improve the implementation of corporate governance (GCG) (Sukandar, 2014). Nisasmara and Musdholifah
While resource dependence theory does not address agency issues (Hillman & Dalziel, 2003), the existence of corporate governance is able to improve the firm performance, reduce the possibility of risk in the firm, and be able to increase investor confidence to invest its capital (Rahmawati & Khoirudin, 2017).

In relation to the governance system, the existence of a board spread within the corporate governance mechanism is able to represent the principles of accountability and independence in decision making (Wicaksana, 2010). According to Amin and Sunarjanto (2016), the distribution or diversity in the firm board members is believed to affect the value of the firm both in the short and long term. Where in that case related to the effectiveness of the board and monitoring in order to improve the firm performance. Diversity or diversity in the firm board may include the diversity of gender, age, ethnicity, educational background or diversity of professional experience of board members (Amin & Sunarjanto, 2016). One of the most interesting parts of the board’s diversity is the diversity of gender or gender diversity.

The trend that causes women to hold positions in the firm top management continues to increase (Kusuma et al., 2018). On the other hand, the increase in gender diversity in councils is also driven by the actions of some countries that have established guidelines or laws aimed at increasing the role of women in the board ranks (Reguera-Alvarado et al., 2015).

Gender diversity focuses on the presence of female board members in the firm board ranks (Kristina & Wiratmaja, 2018). The existence of gender diversity in the board is able to improve the image of the firm that has a positive effect in improving the firm performance (Aruvel & Pratheepkanth, 2019). In addition, the existence of a female board in the firm board ranks provides different perspectives and experiences within the board so as to improve the quality of decisions and legitimacy of the firm (Hillman et al., 2007).

Agency theory gives the idea that gender diversity in the board can improve the financial performance of the firm. In the agency theory perspective, the board structure is more heterogeneous able to act as a good control because it has a broader view, a good level of council independence, as well as being able to reduce costs related to agency issues (Hillman & Dalziel, 2003). While resource dependence theory does not specifically predict the relationship between gender diversity in the board and the firm financial performance, it believes that there is a possibility of a positive relationship between gender diversity and firm performance (Ramadhani & Adhariani, 2017).

Research conducted by Rosadi (2016) found a positive and significant relationship between gender diversity and corporate performance. It indicates that the presence of women on the board of directors is able to provide an understanding of the complexity of the business environment, ingenuity in decision making, as well as improve the effectiveness of the board's performance that can increase the value of profitability (Rosadi, 2016). In line with the study, Campbell and Minguez-Vera (2008), Garcia-Meca et al. (2015), Reguera-Alvarado et al. (2015), Amin and Sunarjanto (2016), Pham and Hoang (2019) found that gender diversity had a positive impact on the firm performance. Darmadi (2011), Abdullah and Ismail (2013) and Iswadi (2016), gender diversity negatively affects the firm performance. Meanwhile, Carter et al. (2010), Mardiyyati and Mundaiyanti (2016), Rafinda et al. (2018) and Aruvel and Pratheepkanth (2019) found that there was no significant influence between gender diversity and the firm performance.

Other factors that affect the firm performance from a corporate governance perspective are the board of directors and the board of commissioners (Wardoyo & Veronica, 2013). The board of directors has a significant influence on the firm performance. Where a relatively large number of board of directors can realize placement in the area controlled so that each board of directors is more focused on the duties and authorities owned (Sukandar, 2014). Meanwhile, according to Faisal (2005), the increase in the number of board of directors is able to create a wider network with other parties outside the firm and is able to guarantee the availability of firm resources.

Research on the influence of the board of directors on the firm performance provides inconsistent results. Research from Handayani (2013), Aprianingsih and Yushita (2016) and Rahmawati et al. (2017) found the positive and significant influence between the board of directors on the firm performance. Hamidah et al. (2014) and Atmaja et al. (2015) found the negative influence, while Dewyanto (2010) and Melawati et al. (2016) found that the board of directors had no effect on the firm performance.
Tertius and Christiawan (2015) disclose that the board of commissioners has an effect on the firm performance. The greater the board of commissioners can improve access to various resources to the external environment that impacts the firm performance (Tertius & Christiawan, 2015). According to Martisila and Meiranto (2013) the increased existence of the board of commissioners led to stricter supervision of the firm management and was able to minimize the possibility of misappropriation of the firm resources.

Prawira (2015) conducted research on the influence of the board of commissioners on the firm performance on financial companies listed in the Jakarta Stock Index (JSX) and found a positive influence between the two. This is in line with the research of Martisila and Meiranto (2013), Kirana and Wahyudi (2016). On the other hand, negative results regarding the influence of the board of commissioners on the firm performance were found by Dewayanto (2010) and Rosadi (2016). Meanwhile, research from Darwis (2009), Dewi et al. (2018) and Sukmajati and Sudrajad (2018) revealed that the board of commissioners had no effect on the firm performance.

Another problem in the implementation of corporate governance that affects the firm performance is the weak power of the board of commissioners compared to the power of the CEO of the firm, where the function of the board of commissioners should be to control the performance of the board of directors (Wardhani, 2007). The supervisory and control functions carried out by the board of commissioners are part of the implementation of practical forms of agency theory (Melawati et al., 2016). On the other hand, the effectiveness of the board of commissioners in conducting supervision is strongly influenced by the level of independence of the board of commissioners in the firm (Wardhani, 2007).

The increasing composition of the board of commissioners from outside the firm may indicate that the role of the board of commissioners in conducting supervision is more effective and considered increasingly independent (Darwis, 2009). Efficient supervision conducted by independent commissioners can support the development of the firm, improve resource management and control over risks effectively and efficiently which has an impact on improving the firm performance.

O’Connell and Cramer (2010) conducted research on the influence of independent commissioners on the firm financial performance and found positive and significant results. Some of the research in line include Liang et al. (2013), Dewi et al. (2018), Aryani et al. (2018), Arulvel and Pratheepkanth (2019) and Gunawan et al. (2019). Inconsistent results were found by Handayani (2013) which revealed that companies with a large proportion of independent board of commissioners tend to be weaker in coordinating, communicating, and decision making that leads to low financial performance of the firm. Meanwhile, Lestari and Yulianawati (2015), Isik and Ince (2016), and Aryani et al. (2018) the absence of an independent commissioner’s influence on the firm performance.

In addition to implementing corporate governance, companies must also pay attention to changes in the direction of anonymity and business that can affect the firm performance. Landion and Lastanti (2019) revealed that currently economic conditions are starting to turn to knowledge-based economy. So, nowadays businesses realize the ability to compete starting to lie in information system innovation, organization management and resources owned (Widarjo, 2011). This led the firm to start focusing on knowledge-based business management to create a competitive advantage (Zamah & Rahayu, 2019).

According to Guthire and Petty (2000), intellectual capital is one of the approaches that can be used to measure and assess knowledge assets. Intellectual capital is described as a concept that is able to provide information about the intangible value of companies that need to be developed to gain a sustainable competitive advantage (Noorkhista & Sari, 2017).

The existence of intellectual capital in the firm is able to produce a system to optimize one’s performance and reduce the level of errors in the creation or completion of financial statements (Ratnasari et al., 2016). Thus, strengthening the intellectual model in the firm is believed to be able to develop human resources owned by the firm (Sarjana et al., 2017).

Research on intellectual capital and firm performance provides inconsistent results. Nazra and Suazhari (2019) intellectual capital negatively affects the firm performance. While Chen et al. (2005) found that intellectual capital proved to positively affect the firm performance significantly.

One of the increases in the number of female boards of directors in Indonesia is the consumer goods industry sector. In Figure 1 below, shows the phenomenon of gap between the percentage of female board of directors and the firm performance.
The phenomenon is seen in the percentage of female board of directors which increased from 16.88% in 2014 to 17.34% in 2015, the average ROA value of consumer goods industry companies decreased from 8.55% in 2014 to 8.14% in 2015. Then in 2018, the number of female boards of directors also increased from 16.81% to 17.29%, but the average ROA decreased from 7.76% in 2017 to 7.72% in 2018. The condition that occurs in the consumer goods industry sector is contrary to the theory that the existence of an improved female board of directors is able to improve the firm performance it is also contrary to the results of previous research from Campbell and Minguez-Vera (2008), Reguera-Alvarado et al. (2015), Rosadi (2016), Ramadhani and Adhariani (2017) that provides a statement that companies that have a female board of directors in the firm is able to improve the firm performance.

Deputy for Balance Sheet and Statistical Analysis of the Central Bureau of Statistics (BPS), Suryanto (2016) stated that in 2015 there was a decrease of 4.92% in household consumption. Some sectors that experienced a fairly deep decline are the food and beverage industry, housing, education and health. Meanwhile, research published by Mirae Asset Securities (2018) shows that the growth of consumer goods industry in Indonesia has slowed over the last few years. This is due to the increasingly intense competition between companies with local brands and import. In 2017, the consumer goods industry grew by only 2.7%. The slowdown was indicated by the declining performance of several issuers on the Indonesia Stock Exchange (IDX). Issuers that experienced a decrease in performance include Unilever Indonesia Tbk (UNVR) by 19.7%, CBP Sukses Makmur Tbk (ICBP) whose share value fell by 3.57% and Kalbe farma Tbk (KLBF) which recorded a decrease of 20.23% (cnbcindonesia.com, 2018).

Based on the background description that has been described earlier, it can be seen that there is still a research gap and gap phenomenon in previous research on gender diversity variables, board of directors, board of commissioners, independent commissioners as well as intellectual capital and performance of consumer goods industry companies listed on the Indonesia Stock Exchange (IDX) in 2014-2018. The purpose of this study was to find empirical evidence on the influence of gender diversity, board of directors, board of commissioners, independent commissioners, and intellectual capital on the firm performance.

**Hypothesis Development**

Gender diversity reflects the spread of men and women occupying board positions within the firm (Anggraeni et al., 2016). According to Summer and Nowichi (2004), Gender diversity aims to improve ideas and perspectives, better marketing, and better organizational outcomes. Gender diversity in this study measured the proportion of female boards of directors in the firm.

Agency theory reveals a more heterogeneous board structure capable of good control because it has a wider range of views, a better level of independence, and is able to reduce costs associated with agency issues (Hillman & Dzial, 2003). Mahadeo et al. (2012) mention that companies that have a female board of directors have a positive and significant effect on the firm performance compared to companies that do not have female representation in the board. This is because women’s councils tend to be more detailed in analyzing a problem, so as to be able to make more informed decisions at a lower risk (Kusumastuti & Sastra, 2007).

Garcia-Meca et al. (2015) revealed that the female board of directors is able to improve the ability of lobbying that has an impact on the increasing profit generated by the firm. Meanwhile, Fudianti and Wijayanto (2019) mention that gender diversity will make the firm management better and can positively affect the firm performance. The existence of gender diversity in the firm is expected to improve the firm performance. This is supported by several previous studies conducted by Campbell and Minguez-Vera (2008), Garcia-Meca et al. (2015), Reguera-Alvarado et
al. (2015), Amin and Sunarjanto (2016), Rosadi (2016), Martínez and Rambaud (2019), and Pham and Hoang (2019).

H1: Gender diversity of the board of directors positively and significantly affects the firm performance.

The board of directors has a duty to determine the direction of long-term and short-term policies and strategies related to the firm resources (Hamidah et al., 2013). Rahmawati et al. (2017) argues that the growing number of boards of directors will create a network with outside parties of the firm to be better which can later improve the firm performance.

Kartikasari (2015) find a significant positive relationship between the board of directors and the firm performance as measured by ROA, where a greater number of boards of directors will create better discussions and cries regarding the determination of firm policies and strategies. So that it can be used to make more informed and accurate decisions (Kartikasari, 2015). The results of this study are in line with Handayani (2013), Sukandar (2014), Aprianingsih and Yushita (2016), and Rahmawati et al. (2017)

H2: The board of directors has a positive and significant impact on the firm performance.

Another factor that is believed to have an influence on the firm performance is the board of commissioners. The Board of Commissioners is defined as the highest internal control mechanism that is collectively responsible for supervising and advising the board of directors and ensuring the implementation of good corporate governance (KNKG, 2006). The role of the firm board of commissioners is to supervise the firm operational activities by the management, so that the number of commissioners in the firm should be able to provide more effective supervision of the results of the firm operational process (Sukandar, 2014).

Martsila and Meiranto (2013) positive and significant influence between the board of commissioners and the performance of companies projected with ROA. The results showed that the number of commissioners in the firm is able to generate strict supervision on the part of the manager, so that the manager will be more active to improve the firm performance (Martsila & Meiranto, 2013). Positive and significant influences were also found by Prawira (2015), Kirana and Wahyudi (2016), Kartikaningdyah and Putri (2017), Putri and Muid (2017).

H3: The Board of Commissioners has a positive and significant impact on the firm performance

The existence of an independent board of commissioners is believed to affect the firm performance. The existence of an independent board of commissioners in the firm ensures the transparency and informability of financial statements so as to facilitate the right of shareholders to obtain quality information (Mahiswari & Nugroho, 2014). Independence in daw is seen as a strong mechanism to monitor the performance of managers and prevent opportunistic actions thereby being able to uphold the firm reproach (Fama & Jensen, 1983). The board’s function in controlling managers is a fundamental part of the agency’s theory (Jensen & Meckling, 1976).

The study tested the effect of the proportion of independent commissioners on the firm performance. A greater proportion of independent commissioners are able to carry out their responsibilities and authority in properly supervising and giving direction to management so that the business process can improve the firm performance (Gunawan et al., 2019). The research is supported by Triastuty and Riduwan (2017) and Arulvel and Pratheepkanth (2019)

H4: The proportion of independent commissioners has a positive and significant impact on the firm performance

Intellectual capital in the firm is able to influence and contribute to the excellence and performance by knowledge-based resources (Noorkhaista & Sari, 2017). Companies that have intellectual property and are able to make good use of it are considered able to improve the firm financial performance which can later become a plus for the firm (Zamah & Rahayu, 2019).

Triastuty and Riduwan (2017) find a positive and significant influence between intellectual capital and the firm performance, in which case intellectual capital plays an efficient and economical role in increasing the firm sales and profits. This result is in line with the resource based theory (RBT) which states that more and more companies are presup gluing intellectual capital, it will increase the value of a firm and improve the firm performance which will have an impact on the fulfillment of the interests of stakeholders (Badawi, 2018). In line with research from Triastuty and Riduwan (2017),
several previous studies have also found similar results including research from Chen et al. (2005), Alipour (2012) and Landion and Lastanti (2019)

H5: Intellectual Capital has a positive and significant effect on the firm performance

Figure 2. Research Model.

METHOD

This type of research is an exploratory study with a quantitative approach. The study highlighted the relationship between independent variables to dependent variable and tested pre-formulated hypotheses. The research design used is causality research design. Causal relationships can be predicted by researchers, so researchers can state the classification of variable causes, namely gender diversity, board of directors, board of commissioners, independent commissioners, and intellectual capital to the tied variable that is the performance of the firm.

The data used in the study is secondary data obtained from the official website of IDX. The research population is all consumer goods industry companies listed on the Stock Exchange in the period 2014-2018 as many as 52 companies. Selection of research samples using purposive sampling method with several criteria that have been determined so that selected as many as 40 samples of companies. The sampling criteria will be presented in Table 1 below:

Table 1. Purposive Sampling criteria

<table>
<thead>
<tr>
<th>No.</th>
<th>Criteria</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Consumer goods industry sector companies listed on the Indonesia Stock Exchange for the period 2014-2018</td>
<td>52</td>
</tr>
<tr>
<td>2.</td>
<td>Industrial companies of consumer goods that exited (delisting) from the Indonesia Stock Exchange for the period 2014-2018</td>
<td>1</td>
</tr>
<tr>
<td>3.</td>
<td>Consumer goods industry companies that did not issue consecutive financial statements during the period 2014-2018</td>
<td>11</td>
</tr>
</tbody>
</table>

Total Samples 40
Total Observation (40 x 5 years) 200

This study used one dependent variable, namely the firm performance and five independent variables, namely gender diversity, board of directors, board of commissioners, independent commissioners, and intellectual capital.

The firm performance can be measured through financial perception to know the results that have been achieved by the firm. In this study the proxy used to measure the firm performance was Return On Asset (ROA). Return on assets is used to measure the effectiveness of companies in utilizing their assets to generate profits (Wijayanto, 2010). Some studies that use ROA as a proxy for firm performance include Darmadi (2011), Ramadhani and Adhariani (2017), Arulvel and Pratheepkanth (2019).

\[ ROA = \frac{\text{Earning After Tax}}{\text{Total Asset}} \]

Gender diversity describes a wide range of men and women in companies occupying the board positions of the firm (Anggraeni et al., 2016). Gender diversity can be measured by the proportion of women's councils (Wahyuningrum et al., 2020), blau index (Reguera-Alvarado et al., 2015; Aggarwal et al., 2019) and dummy (Abdullah & Ismail, 2013). In this study, gender diversity was measured by the proportion of female drieksi councils that referred to the study Iswadi (2016), Rafinda et al. (2018) and Arulvel and Pratheepkanth (2019).

\[ \text{Gender Diversity} = \frac{\sum \text{Female of Board of Director}}{\sum \text{Board of Director}} \]
The board of directors is a board tasked with determining the policy direction and strategy of the firm resources in both the short and long term (Sukandar, 2014). The board of directors’ variable measurement in this study refers to the Melawati et al. (2016).

According to law No. 40 of 2007 concerning Limited Liability Companies, the board of commissioners is the organ of the firm in charge of conducting general or special supervision in accordance with the articles of association and providing advice to the board of directors. Referring to research Sukandar (2014) and Melawati et al. (2016), formula is used as follows:

\[
DIR = \sum \text{Board of Director}
\]

An independent commissioner is a board member from outside or external companies that are independent and have integrity and act objectively in accordance with the guidelines of good corporate governance (Handayani, 2013). The existence of independent commissioners is considered as a counterbalance in improving the effectiveness of the performance of the board of commissioners. The proxy used to measure this variable refers to research Prawira (2015), Nurim et al. (2017), Arulvel and Pratheepkanth (2019).

\[
INDP = \frac{\sum \text{Independent Commissioner}}{\sum \text{Board of Commissioner}}
\]

The intellectual capital in this study was measured using the Value Added Intellectual Coefficient (VAICTM) method which refers to Ulum’s research (2008). The voluntary VAICTM method is easy because the components are obtained from the accounts in the firm financial statements (Putri & Ardiansari, 2019). VAICTM calculation is obtained by summing VACA, VAHU, and STVA components

\[
\text{VAICTM} = \text{VACA} + \text{VAHU} + \text{STVA}
\]

The data analysis methods used in this study are descriptive statistical analysis, analysis of estimation models, classical assumption tests, determination coefficient tests, F statistical tests, multiple linear regression analysis, and hypothesis tests processed with eviews 9. Descriptive statistics are used to analyze data by describing or describing the collected data (Sanusi, 2014). Variable descriptions used include minimum, maximum, mean, median, and standard deviation values. Multiple linear regression analysis is used to test the influence of two or more independent variables on a single dependent variable (Ghazali & Ratmono, 2017:53). The regression equation in the study is as follows:

\[
\text{ROA} = \alpha + \beta_1 \text{GEN} + \beta_2 \text{DIR} + \beta_3 \text{KOM} + \beta_4 \text{INDP} + \beta_5 \text{IC} + \mu
\]

Where:
- \(\alpha\) : Constant
- \(\beta\) : Independent Variable Regression Coefficient
- \(\text{ROA}\) : Return On Asset
- \(\text{GEN}\) : Gender Diversity
- \(\text{DIR}\) : Board of Director
- \(\text{KOM}\) : Board of Commissioner
- \(\text{INDP}\) : Independent Commissioner
- \(\text{IC}\) : Intellectual Capital
- \(\mu\) : error

RESULTS AND DISCUSSION

Descriptive Statistics

Descriptive statistical test results using eviews 9 are presented in Table 2 which includes mean, median, maximum, minimum and standard deviation.

The test of estimation model selection on the panel data is used to determine the best model

| Table 2. Descriptive Statistical Test Results |
|--------------------|---|---|---|---|---|---|
| \(\text{ROA}\) | \(\text{GEN}\) | \(\text{DIR}\) | \(\text{KOM}\) | \(\text{INDP}\) | \(\text{IC}\) |
| Mean | 0.08 | 0.17 | 5.24 | 3.96 | 0.41 | 2.58 |
| Median | 0.06 | 0.12 | 5.00 | 3.00 | 0.33 | 2.20 |
| Maximum | 0.92 | 1.00 | 15.00 | 8.00 | 1.00 | 13.42 |
| Minimum | -0.26 | 0.00 | 2.00 | 2.00 | 0.17 | -5.54 |
| Std. Dev. | 0.13 | 0.22 | 2.61 | 1.56 | 0.13 | 2.47 |
| Observation | 200 | 200 | 200 | 200 | 200 | 200 |
to be used in the regression of panel data between three approaches namely Common Effect Model (CEM), Fixed effect Model (FEM), and Random Effect Model (REM). Selection of estimated models is determined through chow test, hausman test, and lagrange multiplier (LM) test. Chow test is used to choose the best model between CEM and FEM. If the cross-section probability value of \( \text{Chi-square} < \alpha \) (0.05) then the selected fixed effect model (FEM). Chow Test Results are presented in Table 3 below:

**Table 3. Chow Test Results**

<table>
<thead>
<tr>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section F</td>
</tr>
<tr>
<td>Cross-section chi Square</td>
</tr>
</tbody>
</table>

Table 3 shows that the Cross-Section Chi-Square probability value < \( \alpha \) (0.05). So it can be interpreted that the best model used for data panel regression is the fixed effect model (FEM).

The next test is the hausman test used to select the best model between FEM and REM. If the probability value of Cross-section Chi-Square < \( \alpha \) (0.05) then selected fixed effect model (FEM). While if the cross-section probability value of Chi-Square > \( \alpha \) (0.05) then the best model chosen is random effect model (REM). Hausman test results are presented in Table 4 below:

**Table 4. Hausman Test Result**

<table>
<thead>
<tr>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-Section random</td>
</tr>
</tbody>
</table>

Based on Table 4 obtained the cross-section probability value Chi-Square < \( \alpha \) (0.05), meaning that the best model selected is FEM. Chow test results and hausman test provide results that are in line that the Fixed Effect model is the best model that can be used for data panel regression. Therefore, there is no need to test lagrange multiplier. So it can be concluded that the best model used for regression of panel data in this study is fixed effect model (FEM).

Classic assumption tests are performed based on the selected estimation model. Based on the results of chow test and hausman test selected FEM as the best model. According to Ghazali & Ratmono (2017), if the selected model is FEM then only need to be conducted two classic assumption tests namely heterokedastisity and autocorrelation.

The heterokedastisity test on the study was conducted with a glejser test. If the probability value > 0.05 (5%) then there is no heterokedastisitas in the model. Otherwise, the probability value < 0.05 (5%) then there is heterokedastisitas in the model.

**Table 5. Heterokedasticity Test Results**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.29</td>
</tr>
<tr>
<td>GEN</td>
<td>0.78</td>
</tr>
<tr>
<td>DIR</td>
<td>0.30</td>
</tr>
<tr>
<td>KOM</td>
<td>0.88</td>
</tr>
<tr>
<td>INDP</td>
<td>0.51</td>
</tr>
<tr>
<td>IC</td>
<td>0.70</td>
</tr>
</tbody>
</table>

Table 5 shows that the probability value of each independent variable is greater than the signifikansi level (0.05). So it can be concluded that there is no heterokedastisitas in the regression model.

The autocorrelation test is an assumption test used to test whether there is a residual correlation between the disruptive (residual) in the period with the period t-1 (Ghazali & Ratmono, 2017). To test whether or not there is autocorrelation in the model can be done with durbin watson test (DW). The test compared durbin-watson ui values with Durbin-Watson table values with \( d_U < DW < 4-d_U \) criteria The autocorrelation test results are presented in Table 6 below:

**Table 6. Autocorrelation Test Results**

<table>
<thead>
<tr>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean dependent var</td>
</tr>
<tr>
<td>S.D. dependent var</td>
</tr>
<tr>
<td>Sum squared resid</td>
</tr>
<tr>
<td>Durbin-Watson stat</td>
</tr>
</tbody>
</table>

Table 6 shows a DW value of 2.03. DU value with 200 observations obtained 1.82. So the DW value is greater than DU and less than 4-DU (4-1.82 = 2.18). So it can be concluded that there is no autocorrelation in the model because dw values are between DU and 4-DU (1.82 < 2.03 < 2.11).
Table 7. Determination Coefficient Test Results

<table>
<thead>
<tr>
<th>Value</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>R-squared</td>
<td>0.96</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.95</td>
</tr>
</tbody>
</table>

The coefficient of determination test basically aims to find out how far the model is in determining the variation of dependent variables (Ghazali & Ratmono, 2017). In table 7 shows a value of 0.95 which shows that independent variables namely gender diversity (GEN), board of directors (DIR), board of commissioners (KOM), independent commissioners (INDP), and intellectual capital (IC) can explain the variable performance of companies projected with ROA by 95%. While the remaining 5% is explained by other variabe outside the model.

Table 8. Statistic F Result

<table>
<thead>
<tr>
<th>Prob.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>F-statistic</td>
<td>96.75</td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Table 8 shows the results of the F statistical test to test whether all independent variables in the model have an influence together or simultaneously on dependent varaible (Ghazali & Ratmono, 2017:56). It can be seen in table 8 that the probability value (Prob F-Statistic) is 0.00 < α (0.05). Thus, it can be concluded that independent variables consisting of gender diversity, board of directors, board of commissioners, independent commissioners and intellectual capital simultaneously affect dependent variables, namely the firm performance.

Table 9. Regression Test Results with FEM.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-0.05</td>
<td>-2.44</td>
<td>0.02</td>
</tr>
<tr>
<td>GEN</td>
<td>-0.01</td>
<td>-0.82</td>
<td>0.41</td>
</tr>
<tr>
<td>DIR</td>
<td>0.01</td>
<td>3.11</td>
<td>0.00</td>
</tr>
<tr>
<td>KOM</td>
<td>0.01</td>
<td>1.62</td>
<td>0.11</td>
</tr>
<tr>
<td>INDP</td>
<td>0.08</td>
<td>2.82</td>
<td>0.01</td>
</tr>
<tr>
<td>IC</td>
<td>0.01</td>
<td>9.27</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Regression analysis in table 9 uses fixed effect model on consumer goods industry sector companies. The equation of regression test results can be written as follows:

ROA = -0.05 - 0.01 GEN + 0.01 DIR + 0.01 KOM + 0.08 INDP + 0.01 IC + μ_

Constants of −0.05 have a meaning if an independent variable is constant or equal to zero, then the average value of dependent variables or firm performance is −0.05. The gender diversity regression coefficient (GEN) indicates a value −0.01, meaning that if the gender diversity variable increases by one unit assuming another variable remains, it will decrease the firm performance by 0.01. The board of directors variable (DIR) indicates the value of the regression coefficient of 0.01 which means that each increase in the board of directors varaibel by one unit will improve the firm performance by 0.00 assuming other variables remain. The Board of Commissioners (KOM) has a coefficient value of 0.01, meaning that when the variable of the board of commissioners increases by 0.01. The value of the independent commissioner variable coefficient (INDP) of 0.08 indicates that if the independent commissioner variable increases by one unit then the firm performance will increase by 0.08 assuming that other vaiabel remains. The coefficient of regression of intellectual capital variables (IC) amounted to 0.01, the result shows that if the intellectual capital is gifted by one unit, then the firm performance will increase by 0.01 assuming other variables remain.

Table 10. Hypothesis Test Results (Statistical Test t)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-0.05</td>
<td>-2.44</td>
<td>0.02</td>
</tr>
<tr>
<td>GEN</td>
<td>-0.01</td>
<td>-0.82</td>
<td>0.41</td>
</tr>
<tr>
<td>DIR</td>
<td>0.01</td>
<td>3.11</td>
<td>0.00</td>
</tr>
<tr>
<td>KOM</td>
<td>0.01</td>
<td>1.62</td>
<td>0.11</td>
</tr>
<tr>
<td>INDP</td>
<td>0.08</td>
<td>2.82</td>
<td>0.01</td>
</tr>
<tr>
<td>IC</td>
<td>0.01</td>
<td>9.27</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Based on table 10, gender diversity has a coefficient value −0.01 with a probability of 0.41 showing that gender diversity negatively and insignificantly affects the firm performance. So the alternative hypothesis one rejected.

The board of directors has a coefficient value of 0.01 with a probability of 0.00. The results showed that the board of directors had a positive and significant impact on the firm performance. So the second alternative hypothesis is accepted.

The coefficient value of 0.01 and the probability of 0.11 owned by the board of commissioners variable indicates a positive and insignificant influence on the firm performance. So the
third alternative hypothesis was rejected. The independent commissioner variable represents a coefficient value of 0.08 with a probability of 0.01. This means that independent commissioners have a positive and significant impact on the firm performance. So the fourth alternative hypothesis is accepted.

The intellectual capital variable represents a coefficient value of 0.014 with a probability of 0.41. This means that intellectual capital has a positive and significant effect on the firm performance. So the fifth alternative hypothesis is accepted.

The effect of gender diversity on firm performance

Table 10 shows a regression coefficient value of -0.01 with a probability of 0.41. This means that gender diversity has a negative and insignificant effect on the firm performance. So the first alternative hypothesis was rejected.

Gender diversity has a negative and insignificant effect on the firm performance contrary to agency theory. Where in view of agency theory, gender diversity in the board of directors of the firm is able to make a more heterogeneous board structure so that it can act as a good control because it has a wider range of views, a better level of board independence, as well as reduce agency costs (Hillman & Dalziel, 2003). The women's board is believed to have a high level of prudence, tends to avoid risks, and is more thorough in improving the effectiveness of the board's performance, helping to strengthen the board's reputation and improving the quality of decisions that impact the firm performance. (Amin & Sunarjanto, 2016; Rosadi, 2016; Pham & Hoang, 2019).

However, the results of this study are contrary to agency theory and some previous studies. The study found that the gender diversity of the board of directors in consumer goods industry companies had a negative and insignificant impact on the firm performance. The existence of a female board of directors in the firm is ineffective in improving the firm performance (Mardiyati & Murdayanti, 2016).

The results of this study are supported by Anggraeni et al. (2014), Mardiyati and Murdayanti (2016), Rafinda et al. (2018), and Arulvel and Pratheepkanth (2019) which suggests that gender diversity has no effect on the firm performance. This is due to the existence of a minority female board of directors so that female board members do not have significant skills to provide knowledge such as prestige, legitimacy, skills and connections to external resources (Anggraeni et al., 2016). The existence of a female board of directors is also considered due to family relationships with shareholders, making it incompetent in their fields (Mardiyati, 2016).

In addition, the mean value of gender diversity variable of 0.17 or 17.09% indicates a still low proportion of the existence of female boards in the firm. Therefore, the female board of directors does not have a significant influence in providing maximum knowledge, skills, and connections in making important decisions for management that can improve the firm performance.

The Influence of the board of director on the firm performance

The test result t shows a coefficient value of 0.01 with a probability of 0.00. This means that the board of directors has a positive and significant impact on the firm performance and supports the second alternative hypothesis.

The existence of the board of directors in the firm is able to improve the firm services (Handayani, 2013), focus more on the duties and authorities of the field controlled by the (Sukandar, 2014). A large number of board of directors will have a positive impact on the firm performance (Aprianingsih & Yushita, 2016; Rosadi, 2016; Rahmawati et al., 2017). A larger board of directors can enable better and detailed division of tasks according to the expertise of each board member. This certainly causes the board of directors to be able to handle the firm complex operations (Rosadi, 2016), and create a wide network with external parties of the firm (Rahmawati et al., 2017). The results of this study show that companies will tend to increase the number of boards of directors in the composition of the firm board in order to improve the firm performance.

The Influence of the Board of Commissioners on the Firm Performance.

The board of commissioners has a coefficient value of 0.01 with a probability of 0.11. So it can be said that the board of commissioners has a positive and insignificant effect on the firm performance and rejects the third alternative hypothesis proposed.

Board of commissioners in agency theory disclose that the board of commissioners serves as control over management opportunistic behavior and helps align interests between shareholders and managers (Young et al., 2001). So that if the number of commissioners increases, it will improve the system of supervision of misconduct. The increasing number of commissioners...
will also improve the supervisory system for managers to be more active in running the firm operations and minimize misappropriation (Martsila & Meiranto, 2013).

However, the results of this study are contradictory and show that the board of commissioners has no effect on the firm performance. This research is supported by research from Darwis (2009), Sukandar (2014), Dewi et al. (2018), and Sukmajati and Sudrajad (2018). So it can be concluded that the small number of board of commissioners in a firm does not significantly affect the firm performance. This is because the function of the board of commissioners in the firm is only as a control, supervisor and advisor to management so that it is not directly involved in the firm operations and does not have much effect on the firm performance.

**Influence of Independent Commissioners on Firm Performance**

The fourth hypothesis in this study states that the proportion of independent commissioners has a positive and significant effect on the firm performance. The results of the t statistical test show a coefficient value of 0.078814 and a probability of 0.0054, so the fourth hypothesis is accepted.

In line with agency theory, a greater number of independent commissioners are able to increase roles in negotiable and control the actions of executive directors relating to opportunistic actions (Jensen & Meckling, 1976). The results of the study are also in line with O’Connell & Cramer (2010), Dewi et al. (2018), Badawi (2018) and Arulvel and Pratheepkanth (2019). A larger proportion of commissioners can improve the supervisory function of management, thereby encouraging and supporting the firm development process, resource management and minimizing risk more effectively and efficiently (Badawi, 2018). The larger independent board of commissioners is also believed to be able to encourage the board of commissioners to act more objectively in protecting all stakeholders in the firm. Therefore, the firm will tend to meet the needs of independent commissioners for firm board positions that can affect the firm performance.

**The Influence of Intellectual Capital on Firm Performance**

The fifth hypothesis in the study is that intellectual capital positively and significantly affects the firm performance. Statistical test results provide a coefficient value of 0.013981 with a probability of 0.0000. These results show that intellectual capital positively and significantly affects the firm performance. Thus, the fifth hypothesis in the study was accepted.

Resource Based Theory (RBT) suggests that the better utilization of intellectual capital in the firm activities will create a competitive advantage, so as to increase net income and impact on the firm performance increase (Badawi, 2018). The results of the study are also in line with research from Chen et al. (2005), Baroroh (2014), Triastuty and Riduwan (2017), (Badawi (2018), and Landion and Lastanti (2019). The process of structured firm routines, technology and adequate operational systems and good working procedures are able to optimize the value added of the firm, so that the management of assets can be done efficiently and the utilization of invested capital is able to generate greater profits (Baroroh, 2014). In addition, the better the firm in managing the three components in intellectual capital will show the better the firm in managing the firm financial performance. Intellectual capital positively affects the firm performance shows that the use of intellectual capital in the firm can create value added for companies that are concerned with the firm performance.

**CONCLUSIONS AND RECOMMENDATIONS**

This study aims to test the influence of variable gender diversity, board of directors, board of commissioners, independent commissioners and intellectual capital on the firm performance. The results showed that the board of directors, the proportion of independent commissioners and intellectual capital positively and significantly influenced the firm performance. Meanwhile, gender diversity and the board of commissioners have no significant impact on the firm performance. Companies are advised to pay attention to factors that significantly affect the firm performance such as the board of directors, the proportion of independent commissioners and intellectual capital. The results of this study can be useful for investors to consider investments or capital investments that will be made by paying attention to factors that affect the firm performance. The limitations of this study are found in the measurement of gender diversity variables. Proxies of the proportion of female boards of directors in the study were unable to show significant results of gender diversity to the firm performance. Therefore, researchers are then expected to use other proxies to measure gender diversity such as the Blau Index or other measurements. In addition, the results showed that there were only three variables out of five.
variables that affected the firm performance, namely the board of directors, the proportion of independent commissioners and intellectual capital. As for gender diversity variables and the board of commissioners has no effect on the firm performance. Thus, for further researchers it is recommended to add other independent variables that affect the firm performance such as political connection, firm size, managerial ownership and so on.

REFERENCES


Ilmu And Riset Akuntansi, 6(2), 702–722.