ATTRIBUTES OF THE SUPERVISORY BOARD IN ENHANCING INNOVATION PERFORMANCE

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Abstract: Supervisory board’s attribute as determinants of innovation performance has been investigated by previous research using a one-tier board system, such as in the US and UK. There is limited evidence in such a study in continental European corporate governance systems, such as Indonesia. A study using data from Indonesia with a unique two-tier board system may enrich the corporate governance literature. This study explores the supervisory board’s attributes in enhancing a company’s innovation performance by using gender, tenure, and foreigners. The agency theory is applied to this study. The purposive sampling method was used to obtain data from 222 companies listed on IDX from 2014-2018. Using multivariate analysis, the result showed that gender and foreign supervisory board have no significant impact in enhancing better Company’s innovation, with the ability to create better performance. However, the supervisory board’s tenure has a significant positive relationship with innovation performance. Hence, the company size negatively influences innovation performance. This study has practical and theoretical implications, and they discuss in detail in the paper.

Keywords: Gender, Tenure, Foreign boards, innovation

INTRODUCTION

Currently, the success of an organization today is determined by the innovation and development of resources implemented. Innovation-based organizational behaviour positively impacts company performance, including financial results and customer relationships. According to Dewi and Putra (2017), innovation performance is used to increase the efficiency and quality of a company. Innovation is also considered a fundamental element of the Company to survive in the global market (Zhang et al., 2015), face the era of globalization (Dedahanov et al., 2017) and reduce the risk of bankruptcy (Raharja & Yuliani, 2019). Dekoulou and Trivellas (2017) stated that companies could maintain relationships with business partners effectively and efficiently, thereby creating a high value in customer relationships. Innovation performance depends on investment in Research and Development (R&D) and the positive correlation between cost and innovation performance. Therefore, R&D expenditures play an essential role in increasing innovation to achieve company goals (Buchdadi et al., 2018).

A company’s success depends on the innovations implemented in corporate governance. Previous researches have been focused on the management board (Ilona et al., 2021) or board of director (Pondrinal et al., 2022). Another factors that influence innovation performance is the characteristics of the supervisory board, which is measured by gender, tenure, and foreigners. Diversity in the supervisory board is
considered to be able to provide creative and innovative ideas to increase the value and performance of the Company. This is in line with Gu and Zhang (2017), which stated that the existence of supervisory board drives innovative performance. According to Ritter-Hayashi et al. (2019), gender diversity positively impacts innovation performance. It is not only interpreted as the difference between women and men. However, it is the process used to obtain information before taking action (Ariningsih & Mertha, 2017). Gender is always related to the way decisions are made and the level of problem-solving. An interesting phenomenon is a belief that women play an important role in the business world (Nugroho & Widiasmara, 2019) because they tend to increase directors' effectiveness in the flow of information and financial performance better (Zaitul et al., 2019).

The length of the supervisory board’s tenure in the Company tends to influence innovation performance. According to Kartikaningdyah and Putri (2017), the longer the tenure, the more their ability to have more insight into the business environment and the policies taken for long-term project work (Hidayati, 2017). The existence of a foreign supervisory board is considered to have a positive effect on the Company (Assenga et al., 2018) due to their different values, norms, and knowledge (Makkonen et al., 2018), thereby providing more diverse experiences (Muttkin & Subramaniam, 2015). This article composes four sessions: introduction, methods, result discussion, and conclusion. Before discussing methods, the following explanation is about the theory and research concept: innovation performance, supervisory board gender diversity, supervisory board tenure, and foreign directors.

Agency theory is caused by information asymmetry between company management and shareholders. Generally, it explains the interests of shareholders and company management that are always in conflict. This is limited by improving corporate governance by means of broader disclosures, thereby reducing information asymmetry. Hence, Watts and Zimmerman (1986) stated that good company performance increases corporate social responsibility. The board of directors is fully responsible for the company’s survival, striving to show good performance and obtain higher values. This can attract investors (Jaradat, 2015). Therefore, agency problems often occur in Limited Liability Companies (PT) due to the separation between owners and managers.

Innovation Performance is the Company’s ability to determine ideas to create or introduce new products by incorporating strategic orientation (Permadi et al., 2018). Meanwhile, according to Diaz-Fernandez et al. (2017), innovation performance is a competitive advantage obtained from creative ideas to produce quality and efficiency that are beneficial to the Company. Innovation is also related to improving performance through product regeneration, development, and expansion of new systems. Mcginnis and Ackelsberg (1983) stated that companies develop good business strategies through innovation performance. The main factor in innovation performance is to continue to build closer relationships with suppliers and customers (Satriagung, 2018). A more intimate relationship is based on the level of trust between one another. The second factor is the importance of knowledge-sharing behaviour in organizations because good performance is created due to better knowledge-sharing behaviour in companies.

Gender diversity in companies optimizes the implementation of corporate governance following the decisions making process of women and men due to varying viewpoints, thoughts, and problem-solving methods (Martinez-Jimenez et al., 2020).
According to Tasya and Ceisviyanny (2019), men possess a rational, independent and considerate attitude towards any action, while women are more thorough and ethical in making decisions (Maula & Rahaman, 2018). Ullah et al. (2020) stated that gender diversity improves smooth communication between stakeholders and investors as beneficiaries of the Company. In addition, it provides new competitive ideas that will enhance the Company's innovation performance (Lisaime & Sri, 2018). Abad et al. (2017) reported that gender negatively and significantly affected corporate governance. However, this is contrary to Abdul et al. (2018) research, which stated that gender diversity had a positive effect on the total remuneration of the supervisory board.

H1: Gender influences innovation performance.

The length of a supervisory board’s tenure shows that an individual's performance is outstanding. Therefore, the Company continues to utilize its services. Zheng (2010) stated that the longer tenure, the lower the possibility of career problems. Consequently, it is always advisable to avoid conflicts in decision-making, seek the manager's opinion (Rao & Tilt, 2016), and reduce problems by establishing good relationships with colleagues and subordinates (Khelil et al., 2016). The supervisory board whose tenure is extended develops a more appropriate cognitive structure for innovative performance and tends to evaluate the scope of the Company's risk disclosure. This contradicts Kwalomine (2018)’s study, which stated that the length leads to rigidity in the Company's structure, with less ability to change the old strategy, thereby reducing the innovation performance. Susanti et al. (2018) reported that tenure positively and significantly affected company profitability.

H2: Tenure partially influences innovation performance.

According to the agency theory, the supervisory board needs to perform an effective oversight function to protect the interests of shareholders, such as through the diversity of citizenship. The presence of foreign individuals on the board of directors can add to the diverse knowledge not possessed by the domestic board of directors. In addition, foreign citizenship tends to improve the Company's image because they are more professional and competent in their fields. According to (Assenga et al., 2018), the various cultural differences between citizens from other countries to their place of work ease connections with foreign investors due to their professional mode of operation and the ability of the Company to receive information related to international networks (Ibrahim & Haneefah, 2016). Harjoto et al. (2019) stated that diversity of nationalities improves corporate social performance.

H3: The foreign supervisory board partially influences Innovation Performance

METHODS

The study comprises 555 companies listed on the Indonesia Stock Exchange (IDX) from 2014-2018. From this number, the random sampling method was used to obtain data from 222 companies. Innovation Performance is defined as a fundamental factor utilized by companies to survive in a rapidly changing world to achieve success and outperform competitors (Dedahanov et al., 2017). According to Chao et al. (2017), innovation performance is measured using Intensity Research and Development (IRD), which compares the total expenditure of R&D with the cumulative revenue of a company. According to Simpson et al. (2010) and Yeni et al. (2020), gender is defined as a society’s norm or rules of behaviour. It is measured by comparing the number of women to the
overall number of supervisory board in the Company.

Tenure is defined as the supervisory board’s duration of service in a company (Kwalomine, 2018). This study measures it by adding up all tenures and dividing it by the number of directors in the Company. According to Putri and NR (2019), a foreign supervisory board comprises individuals from other countries, working in a company with loyalty and professionalism. Colakoglu et al. (2020) defined it by measuring the existence of foreigners in a company. Alabdullah (2018) described company size as the total assets owned by an organization. The greater the company’s assets, the higher the capital invested (Mawei & Tulung, 2019). According to Prasetyo and Widiasmara (2019), profitability is the company’s ability to obtain profits from sales and investment income. The indicator used in this study is in accordance with (Kwalomine, 2018) research, which utilized the Return on Assets (ROA) to measure a company’s effectiveness in generating profits by utilizing its assets.

The classical assumption test and panel data regression analysis were used to test the feasibility of the data using the following equation:

\[
IRD = \alpha + \beta_1 \text{GDD} + \beta_2 \text{TN} + \beta_3 \text{DDA} + \beta_4 \text{SIZE} + \beta_5 \text{ROA}
\]

Description:
- IRD = Innovation performance
- GDD = supervisory board gender
- TN = supervisory board tenure
- DDA = Foreign supervisory board
- SIZE = Company Size
- ROA = Profitability.

RESULTS AND DISCUSSION

This study uses Eviews 9 and SPSS 23 in data processing; therefore, the summary is obtained as follows:

Table 1. Results of Descriptive Statistical Analysis of Research Data

<table>
<thead>
<tr>
<th></th>
<th>IRD (Ratio)</th>
<th>GDD (Ratio)</th>
<th>TN (Ratio)</th>
<th>DDA (Ratio)</th>
<th>SIZE (Millions)</th>
<th>ROA (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.027</td>
<td>0.142</td>
<td>5.951</td>
<td>0.150</td>
<td>17.081.905</td>
<td>4.118</td>
</tr>
<tr>
<td>Median</td>
<td>0.000</td>
<td>0.000</td>
<td>4.400</td>
<td>0.000</td>
<td>2.889.965</td>
<td>2.560</td>
</tr>
<tr>
<td>Max</td>
<td>0.780</td>
<td>0.870</td>
<td>24.170</td>
<td>1.060</td>
<td>175.558.765</td>
<td>43.260</td>
</tr>
<tr>
<td>Min</td>
<td>0.000</td>
<td>0.000</td>
<td>0.500</td>
<td>0.000</td>
<td>2.704</td>
<td>-32.200</td>
</tr>
<tr>
<td>Std. Dev</td>
<td>0.060</td>
<td>0.189</td>
<td>4.957</td>
<td>0.237</td>
<td>39.363.090</td>
<td>10.375</td>
</tr>
<tr>
<td>Obs</td>
<td>1110</td>
<td>1110</td>
<td>1110</td>
<td>1110</td>
<td>1110</td>
<td>1110</td>
</tr>
</tbody>
</table>

Note IRD (Innovation Performance), GDD (Board of Directors Gender), TN (Board of Directors Tenure), DDA (Foreign Board of Directors), SIZE (Company Size), ROA (Profitability).

Based on table 1, out of 1110 observations, the innovation performance variable has the smallest value of 0.000. This shows that some companies do not include R&D costs in recording their financial statements. Gender with a mean of 0.142 indicates an imbalance in the company’s number of women and men. Meanwhile, tenure has the
lowest value of 0.500, which means that the Company changes its board of directors yearly. The foreign board of directors ranged from 0,000 to 1,060, with approximately 126 companies not in its possession. The above results show that there are still companies in this study that are small-sized (PT. Korprindo International Tbk) with a bad level of profitability (ROA) (PT. Modern International Tbk (MDRN)).

According to Gujarati (1995), a normality test was conducted to determine the regression model of the variable studied was normally distributed. It was further processed using the Kolmogorov-Smirnov One-Sample Test with the assistance of SPSS 23. The results showed that the 2-tailed probability is 0.052. Therefore, it is normally distributed. Furthermore, based on the multicollinearity test, when the value of tolerance and VIF (Variance Inflation Factor) is less than 10, it is concluded that there is no correlation between the independent variables. Meanwhile, the heteroscedasticity test was carried out using the Bruesch-Pagan-Godfrey method with a significance value greater than 0.05. The test results stated that all the variables studied were free from symptoms of multicollinearity and heteroscedasticity.

Table 2. Hausman Test

<table>
<thead>
<tr>
<th>Test Summary</th>
<th>Chi-Sq. Statistic</th>
<th>Chi-Sq. d.f.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section random</td>
<td>20.618</td>
<td>5</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Table 2 above shows that the Chi-square probability value is 0.001 <0.05. Thus, it was concluded that Ho was rejected, and the model that should be used as the Fixed Effect model.

Table 3. Hypothesis Testing Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-0.434</td>
<td>0.091</td>
<td>-0.472</td>
<td>0.636</td>
</tr>
<tr>
<td>GDD</td>
<td>-0.400</td>
<td>0.246</td>
<td>-1.620</td>
<td>0.106</td>
</tr>
<tr>
<td>TN</td>
<td>0.022</td>
<td>0.010</td>
<td>2.025</td>
<td>0.028</td>
</tr>
<tr>
<td>DDA</td>
<td>-0.471</td>
<td>0.287</td>
<td>-1.640</td>
<td>0.101</td>
</tr>
<tr>
<td>LOGSIZE</td>
<td>-0.163</td>
<td>0.058</td>
<td>-2.783</td>
<td>0.005</td>
</tr>
<tr>
<td>ROA</td>
<td>-0.001</td>
<td>0.002</td>
<td>-0.617</td>
<td>0.537</td>
</tr>
<tr>
<td>F-Statistic</td>
<td>21.957</td>
<td>R-squared</td>
<td></td>
<td>0.876</td>
</tr>
<tr>
<td>Prob (F-Statistic)</td>
<td>0.000</td>
<td>Adjusted R-squared</td>
<td>0.836</td>
<td></td>
</tr>
</tbody>
</table>

Table 3 shows that the supervisory board’s Gender variable (GDD) has a probability of 0.106, which means that it has no effect on Innovation Performance (IRD). These results are not in line with the study carried out by Abad et al. (2017), which found that gender diversity improves corporate governance and encourages good communication between investors and stakeholders. Furthermore, Ullah et al. (2019) stated that the presence of women on the board of directors can increase the company’s value because it tends to improve problem-solving and decision-making techniques (Ritter-Hayashi et al., 2019). The supervisory board’s Tenure Variable (TN) shows probability and coefficient values of 0.028 and 0.022, which means that it positively and significantly influences innovation performance. This result is in line with the study conducted by Al-maghzom et al. (2016), which stated that the length of the supervisory board’s tenure
has the ability to reduce problems in the Company because they can understand the condition of the Company and its business environment, thereby, enabling them to properly implement innovations (Setiawan, Hapsari, and Wibawa, 2018).

The Foreign supervisory board (DDA) showed a probability value of 0.101. Therefore, it does not affect Innovation Performance. This is in line with the research of (Assenga et al., 2018), which stated that a foreign board of directors positively affects the Company's innovation performance. According to Ibrahim and Hanefah (2016a), the presence of citizens from other nationalities in the Company brings about different backgrounds, such as religion, norms, and ethnicity. Company Size has a probability of 0.005 and a coefficient of -0.163. This means that an increase in size tends to reduce its innovation performance. This result is in line with Astufi and Nuraina (2017), which stated that the size of the Company's assets facilitates profit management due to mismanagement at the performance level. However, these results contradict Noorkhaista and Sari (2017) study, which stated that a greater company size could direct the Company towards increasing opportunities for empowerment and prestige in managers. Profitability (ROA) showed a value of 0.537; therefore, it is concluded that it does not affect innovation performance. The results of this study are not in line with the research conducted by (Nugroho & Widiasmara, 2019), which reported that companies with high profitability ratios tend to show good performance due to their ability to work effectively in managing their funds, thereby, making a continuous profit.

CONCLUSION

In conclusion, gender, the foreign supervisory board, and profitability have no partial influence on innovation performance. Meanwhile, the supervisory board's tenure and company size positively and negatively affect innovation performance, respectively. This study has practical implications in that the company stakeholders can consider the director's tenure to predict the Company's innovation performance. However, the company investor should be careful with company size when selecting the Company to be invested in since the large Company tend to have low innovation performance. In addition, the study also contributes to the agency theory in the sense that directors with high tenure, which indicates high experience tend to monitor effectively. Therefore, effective monitoring can improve the Company's innovation activity and increase innovation performance. This study has several limitations and provides future researchers with research avenues. First, this study sees the innovation performance from agency theory and next investigator can see the innovation performance from other perspectives, such as resource dependency theory. Second, this study uses a limited sample, and future research can expand the sample size by integrating other industries. Finally, this study determines the direct relationship, and the next researcher can consider different model approaches, such as moderating or mediating regression model.

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