

INTELLECTUAL CAPITAL AND FIRM PERFORMANCE: THE ROLE OF WOMEN DIRECTORS

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Abstract :

This study aims to examines the effect of intellectual capital on firm performance. Then, this study also examines whether the presence of woman director can strengthen the effect of intellectual capital on firm performance that operates in banking industries in Indonesia. The data used in this study was obtained from Bloomberg and OSIRIS database and also the firm's annual reports during 2014-2018. The results found that women directors can strengthen the positive effect between intellectual capital and firm performance. This result showed that the presence of gender diversity in directors would make businesses have special human capital because the variety of human capital within the board that makes these resources special will affect actions within the company that have an impact on performance. This study contributes in the theoretical field by adding a reference to the effect of intellectual capital on performance with women directors as a moderating variable. This study also gives new perspective in Indonesia as emerging market especially in financial industry, while most of the studies are conducted in US and Europe.

Keywords: Intellectual Capital, Women Directors, Firm Performance

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1. INTRODUCTION

In developing country such as Indonesia, the capital markets play an increasingly important role in the growth of the global economy. Since the enactment of the ASEAN Economic Community (AEC) by the end of 2015, the economic growth in the ASEAN countries has been improved, including Indonesia. Based on the enactment of AEC, ASEAN countries will become a more dynamic and competitive region. Therefore, every organization needs to utilize efficient resources so that the company can improve and increase its performance so that the company is able to create value added and compete in a competitive market.

Based on Resource-based Theory (hereinafter referred to as RBT) the firm's

competitive advantage could be driven by Intellectual Capital (hereinafter referred to as IC) (Barney, 1991). Chen et al. (2005) and Wang (2008) explain that the company's success will be achieved by the continuous competitive advantage of IC. IC tend to be relied upon by companies engaged in knowledge-intensive fields such as service industries because of their corporate activities that make them more likely to invest in IC, including the banking industry.

The effect of IC on firm performance has been examined. Several studies have shown that firm performance could be improved by IC (Firer & Stainbank, 2003; Chen et al., 2005; Tan et al., 2007; Ulum, 2008; Clarke et al., 2011; Mondal & Ghosh, 2012; Ozkan et al., 2017). However, not all research results were consistent (Firer &

Williams, 2003; Maditinos et al., 2011). However, Grant (1996) explained that IC does not provide a competitive advantage without proper organization and placement. Therefore, corporate governance is important in terms of the role of the board of director because of their abilities to control the company to optimize the management of IC, so as to improve performance.

One of the issues on board diversity is the diversity of gender. Resource dependence theory (hereinafter referred to as RDT) suggests that diversity in board of director brings unique information capable of assisting better decision making (Carter et al., 2010). In this study, the diversity of directors is seen from gender, which is women directors. Terjesen, Sealy, and Singh (2009) concluded that the presence of gender diversity in directors would make businesses have special human capital. Researchers suggest that the variety of human capital within the board that makes these resources special will affect actions within the company that have an impact on performance.

In some countries, the existence of women in board have already established regulations on board of director composition. In 2006, Norway became the first country that applied gender quotas to board of director by deciding that at least 40 percent of women in board of director. According to Staffing Industry Analysts (2015), some countries in ASEAN are trying to implement gender quotas. In 2016, Malaysia required 30 percent quota of women director. In Singapore, it is already discussed that the increasing of gender diversity in board of director was needed. Based on explanation above, this study predict that women directors can strengthen the impact of IC on performance. This is because in the previous studies, it is hard to find the role of women directors in effect to IC and performance in Indonesia as the institutional setting.

Resource-Based Theory (RBT)

Resource-based theory serves to explain and predict what can be the basis for competitive

advantage and firm performance (Barney et al., 2011). From an RBT perspective, sustainable competitive advantage is closely linked to the company's ability to maintain valuable, scarce and irreversible resources also allocate and deploy these resources effectively (Barney, 1991).

Resource Dependence Theory

Resource dependence theory (hereinafter referred to as RDT) suggested by Pfeffer and Salancik (1978) provides a theoretical foundation for the board diversity. RDT believes that the board should connect companies with other external organizations in order to address environmental dependence. Hillman et al. (2000) build RDP and prove that a diversity of directors can provide businesses with valuable and varied resources. In addition, diversity has the potential to enhance the input given to management by the Board because of the unique information that comes from the diversity of directors.

According to RDT, diversity of directors can offer new information that will help to make smarter choices (Carter et al., 2010). A more representative board would also have more useful services, which may contribute to improved firm performance (Carter et al., 2010). The diversity of directors was seen in this study in terms of gender. Adams and Ferreira (2009) suggest that women director practice greater caution in tracking and taking positions on committees responsible for transparent reporting and reporting consistency, such as audit committees and corporate governance. Adams, Gray, and Nowland (2010) claim that women executives have more critical thought. The study also indicates that investors support the appointment of a woman director to the board.

Intellectual Capital And Firm Performance

Value creation and the sustainability of corporate growth requires the role of the IC. This is supported by RBT which explains that IC is the firm's competitive advantage (Barney, 1991). According to RBT's perspective, the creation of

sustainable competitive advantage is closely related to the company's ability to maintain valuable, scarce and irreplaceable resource and allocate and disseminate these resources effectively (Barney, 1991). Given the sustainable competitive advantage, the company that owns it will be able to win the competition on the market so that it can create value and achieve optimal firm performance.

Several studies have shown that firm performance could be improved by IC (Firer & Stainbank, 2003; Chen et al., 2005; Tan et al., 2007; Ulum, 2008; Clarke et al., 2011; Mondal & Ghosh, 2012; Ozkan et al., 2017). From above explanations, we could propose following hypotheses:

H1: Intellectual capital has a positive effect towards firm performance of banking firms in Indonesia.

Intellectual Capital, Woman Director And Firm Performance

Grant (1996) explained that IC does not provide a competitive advantage without proper organization and placement. Therefore, corporate governance is important in terms of the role of the board of director because of their abilities to control the company to optimize the management of IC. One of the issues on board diversity is the diversity of gender (Garcia-Meca et al., 2015; Innayah et al., 2020; Innayah et al., 2021). Gender diversity in board will result in more precise deliberation and discussion of tighter issues often considered unacceptable to male directors (Huse & Solberg, 2006). Women can morally contribute with a fresh perspective to solve complex problems, which can reduce the formulation of information strategies (Francoeur et al., 2008); supporting the development of good communication and the establishment of better relationships (Hillman et al., 2007). The previous studies have found that women in board of director can improve firm performance (Deszo & Ross, 2012; Lucknerath-Rovers, 2013; Post & Bryon, 2015; Isidro & Sobral, 2015). From above

explanations, we could propose following hypotheses:

H2: Women directors strengthen the positive effect of intellectual capital on firm performance of banking firms in Indonesia.

2. METHOD

Sample

The population used in this study was banking industry in Indonesia which obtained from the Bloomberg database, OSIRIS database and company annual reports. The sampling technique used in this study was purposive sampling with the criteria i.e. banking firms in Indonesia with complete data used in this study during 2014-2018. Due to incomplete data on the variables selected, the final sample used in this study is amounted to 29 banks with a total of 145 firm-year observations of Banks in Indonesia. The banking industry was chosen because the banking industry has an important role to play in maintaining economic stability, so the they need to be monitored properly.

Variables

Intellectual Capital (VAIC). IC measured using VAIC which was developed by Pulic (2000, 2004). VAIC measured by the following equation:

$$VAIC_t = HCE_t + SCE_t + CEE_t$$

Where:

VAIC_t = Value added intellectual coefficient at t

HCE_t = VA_t / HC_t; human capital efficiency coefficient at t

SCE_t = SC_t / VA_t; structural capital efficiency coefficient at t

CEE_t = VA_t / CE_t; capital employed efficiency coefficient at t

VA_t = OP_t + EC_t + D_t + A_t; OP_t is operating income; EC_t is employee costs; (D_t) is depreciation; and A_t is amortization

HC_t = total salary dan wages at t
 SC_t = VA_t - HC_t; structural capital at t
 CE_t = book value of the net assets at t

Composition of Women Directors (WomanDir). According to Garcia-Meca et al. (2015), Innayah et al. (2020) and Innayah et al. (2021), the composition of the Women Directors is measured by the proportion of the women directors' composition:

Proportion of Women Directors Composition =
 Number of Women Directors / Number of Board
 of Directors

Firm Performance (Firm_Perf). Same with the studies from Firer and Williams (2003), Chen et al. (2005) and Mondal and Ghosh (2012), the firm performance is measured by ROA (return on assets):

ROA = Profit before tax / Average total assets.

Board Size (BoardSize). Board is measured with the number of directors in the board of directors.

Bank Size (BankSize). Bank Size is measured by natural logarithm of bank total asset at year t.

Net Interest Margin (NIM). Net interest margin is measured by dividing revenue from net Interest with total earning assets.

Regression Model

This study uses panel data regression model analysis, which are fixed effect or random effect regression. Our study found out the most suitable panel data regression model by using Hausman test (Gujarati & Porter, 2009). The hypotheses testing in this study were using six equation models. The equation models used are as follows:

Model 1. VAIC on Firm Performance

$$\text{Firm_Perf} = \beta_0 + \beta_1 \text{VAIC} + \beta_2 \text{BoardSize} + \beta_3 \text{BankSize} + \beta_4 \text{NIM} + \varepsilon_t$$

Model 2. Interaction Model between VAIC and Women Director on Firm Performance

$$\begin{aligned} \text{Firm_Perf} = & \beta_0 + \beta_1 \text{VAIC} + \beta_2 \text{WomanDir} \\ & + \beta_3 \text{VAIC} * \text{WomanDir} \\ & + \beta_4 \text{BoardSize} + \beta_5 \text{BankSize} \\ & + \beta_6 \text{NIM} + \varepsilon_t \end{aligned}$$

Where:

Firm_Perf = Firm Performance
 VAIC = Intellectual Capital
 WomanDir = Proportion of Women Directors
 VAIC*WomanDir = Moderating Variables of the Women Directors on IC
 BoardSize = Control Variable of Board Size
 BankSize = Control Variable of Bank Size
 NIM = Control Variable of Net Interest Margin
 ε_t = error term

3. RESULT AND DISCUSSION

Descriptive Statistic

Table 1 shows the descriptive statistical values of the variables used in this study. Based on Indonesia Financial Service Authority (Otoritas Jasa Keuangan) Regulation (POJK, 2014), banks are required to have three members of the board of directors. Based on the descriptive statistics, the average number of directors in the Indonesian banking sector sampled in this study is seven people, so that the number meets the POJK requirements.

As previously explained, there are no official regulations regarding the existence of women directors in Indonesia. However, Worldbank in 2011, through the International Finance Corporation (IFC) established a program to increase understanding and awareness of the existence of women directors in developing countries, including Indonesia. Based on the descriptive statistics, the average number of women directors in Indonesian banks who were sampled in this study were 18,9% of the total number of directors which is two person. This indicates that banks in Indonesia are starting to be interested in paying attention to the presence of women in top management. The Firm_Perf

variable has a mean value of 1.463, while the Intellectual Capital (measured by VAIC) variable has a mean value of 4.103. Overall, the

descriptive statistics of each variable can be seen in Table 1 below.

Table 1. Descriptive Statistic for Selected Variables

Variable	Max	Min	Mean	Std. Dev.
Firm_Perf (%)	3.04	0.56	1.463	0.659
VAIC	4.46	3.82	4.103	0.191
WomanDir	0.5	0	0.186	0.143
VAIC*WomanDir	2.23	0	0.793	0.632
Board_Size	11	4	7.228	2.143
Bank_Size	20.22	15.46	17.475	1.377
NIM	9.65	3.85	5.592	1.230

Results of Hypotheses Testing

Table 2. Results of Hypotheses Testing

Independent Variable	Dependent Variable	
	Model 1 Firm_Perf	Model 2 Firm_Perf
Const	-4.628055 (-8.28)***	-3.87491 (-7.51)***
VAIC	.9304255 (4.56)***	.8495287 (3.90)**
WomanDir	.6873424 (9.65)***	-1.903283 (-5.67)***
VAIC*WomanDir		.6364854 (7.08)***
Board_Size	.0097351 (4.41)**	.0093592 (5.92)***
Bank_Size	.0863633 (5.50)***	.0629967 (2.79)**
Nim	.101196 (15.50)***	.0953996 (15.6)***
R² Within	0.6678	0.6840
F	3339.23	607.02
Prob > F	0.0000	0.0000
Note: *** significant at 1%; ** significant at 5%; * significant at 10%		

Table 2 shows the results of the overall hypothesis testing in this study. Hypothesis 1 testing aims to measure the positive effect of intellectual capital on firm performance (ROA). Hypothesis 1 testing showed a significant positive effect of VAIC towards Firm_Perf with coefficient of 0.930 at 1% level of significance.

This indicates that if a company can use the IC owned more efficiently, it can lead to improved financial performance at the company. The result is in line with the previous studies conducted by Firer and Stainbank (2003), Chen et al. (2005), Tan et al., (2007), Clarke et al. (2011) which show that intellectual capital has positive effect

on firm performance. In the banking sector, similar results were found by Ulum (2008), Mondal and Ghosh (2012) and Ozkan et al. (2017).

Hypothesis 2 testing aims to measure whether women directors strengthen the positive effect of intellectual capital on firm performance of banking firms. Firm performance is measured by financial performance, namely ROA. Hypothesis 2 testing shows that there is significant positive effect between VAIC*WomanDir and Firm_Perf interaction variables with coefficient of 0.636 at a significance level of 1%. Therefore, hypothesis 2, which states that strengthen the positive effect of intellectual capital on firm performance of banking firms, is supported.

Terjesen, Sealy, and Singh (2009) explain that the presence of gender diversity in directors would make businesses have special human capital. Researchers suggest that the variety of human capital within the board that makes these resources special will affect actions within the company that have an impact on performance. The results indicated that if there were women directors in the company, they can organize the intellectual capital, so the firm performance would be increased. The results can be explained by the phenomenon of the glass ceiling, which means that there is an invisible barrier for women to occupy a higher position at a level in the company (Bexter and Wright, 2000) so that if women are in the position of directors, they have additional competencies that are not owned by men.

4. CONCLUSION, IMPLICATIONS AND SUGGESTIONS

Conclusion

This study aims to examine the effect of intellectual capital on performance with women directors as a moderating variable. This study conducted in banking sector in Indonesia over the period of 2014-2018. The first objective of this study was to find out the positive effect between intellectual capital and firm performance in

banking industry in Indonesia. The results showed that that the use of intellectual capital efficiently and effectively will make the company achieve higher performance. This study also examines whether women directors can strengthen the effect of intellectual capital on performance. The results showed that women directors can strengthen the effect of intellectual capital and performance.

Implication and Suggestion

This study has several implications in both theoretical and business fields. First, this study contributes in the theoretical field by adding a reference to the effect of intellectual capital on performance with women directors as a moderating variable. This study also gives new perspective in Indonesia as emerging market especially in financial industry, while most of the studies are conducted in US and Europe. Second, this study contributes to the practical field by reinforcing the effect of intellectual capital on performance improvement, so companies need to manage intellectual capital as well as possible in order to encourage performance improvement. Third, this study can be a consideration for policy makers to review the need for minimum requirements in setting quotas for the existence of women directors more attention to the experience and capabilities of the board of directors.

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