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INTELLECTUAL CAPITAL AND FIRM SIZE IMPACT ON PROFITABILITY AND FIRM VALUE ON FINANCIAL SECTOR

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Abstract: This study aimed to analyze the effect of intellectual capital and firm size on profitability and firm value in financial sector. Population in this study were 51 financial sector listed on IDX for 2019 period, while a sample of 48 firms were selected by using purposive sampling technique. Data were analyzed using path analysis by also utilizing AMOS program. Results of this study revealed that: intellectual capital had a positive and significant effect on profitability. While intellectual capital had a negative and significant effect on firm value. Firm size had a negative but insignificant effect on profitability, on the other hand, firm size had a negative and significant effect on firm value; and profitability had a positive and significant effect on firm value. Therefore, these results support signaling theory which believes that good firm profitability will have an impact on increasing firm value.

Keywords: Intellectual Capital, Firm Size, Profitability, Firm Value, AMOS

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1. Introduction

In the globalization era, business world is getting more advanced and competition between firms is getting stronger, firms are expected to be able to position themselves to survive and develop. Every firm attempts to improve its performance in order to achieve its goals, one of which is maximizing shareholder wealth (Herawaty, 2011). This condition can be reflected by the firm value which reflects selling value of the firm. Maximizing firm value means that main goal of firm can be maximized so that it can have a big impact on its sustainability in the future. Financial sector is a sub-sector of service firms whose presence is expected to improve directions of development strategy which has so far only been concerned with physical growth, while balance factor with social and environmental elements is neglected. Service firms connect various sectors and consumers as well as capital that can drive economic growth since contribution of service sector reaches 58% of the National Gross Domestic Product (GDP) (BPS, 2020). Financial sector plays a significant role in moving the Indonesian economy. This can be viewed from its role as a source of financing, a means for public to invest in financial instruments, and an industry that carries out the financial intermediation function. In fact, since beginning of 2020, the world has been experiencing an extraordinary phenomenon, namely Coronavirus (Covid-19) pandemic, which is a virus that attacks human respiratory system. This pandemic has an impact on all industries in Indonesia, including financial sector. Financial sector is experiencing difficulties due to restructuring of financing to debtors, which has led to a decrease in income as well as difficulties in collecting installments from debtors.

Firm value, which is often associated with share price, is one of important points that firms need to consider. A high firm share price is reflected in a high firm value and vice versa. When tracked, financial sector index follows movement of composite stock price index (IHSG), where the lowest decline in financial sector occurred in 2020 due to Covid-19 pandemic. However, in general, it can be concluded that ups and downs of financial sector index will have an effect on changes in value of composite share price index (https://finance.yahoo.com).
Furthermore, signaling theory emphasizes importance of information issued by firm for making investment decisions outside firm (investors). If information submitted contains a positive value, market will react when an announcement is received. Market participants first interpret and analyze information as a good signal or a bad signal. This condition will have an impact on changes in firm value. Studies conducted by (Khan *et al*., 2013; Sucuachi & Cambarihan, 2016; Yang *et al*., 2010) claimed that profitability had an effect on firm value.
This study aimed to analyze the effect of intellectual capital and firm size on profitability and firm value of financial sector firms listed on Indonesia Stock Exchange (IDX) for the 2015-2019 period.

2. Literature Review

Resources based theory believes that a firm has resources which can encourage firm to have a competitive advantage and be able to direct firm to have good long-term performance. The fact that valuable and scarce resources can be directed can create a competitive advantage so that resources they have can last a long time and are not easily copied, transferred or replaced (Ulum, 2017). Firm resources can only be a source of competitive advantage or sustained competitive advantage when those resources are considered valuable. Firms can implement general strategies that do not give one firm a particular competitive advantage.
Signalling theory (Ross, 1977) explains reasons for a firm to provide financial statement information to external parties related to information asymmetry between firm management and outside parties. Information asymmetry can occur since management has broader information about firm than outside parties. Information published as an announcement will provide a signal for investors in making investment decisions.
Profitability reflects financial ratios used to analyze firm's ability to earn profits or gains during a certain period. High firm profitability shows firm's ability to generate profits because the greater the profit, the greater the firm's ability to pay dividends. High firm profitability can attract investors, which in turn encourages an increase in firm value (Dwiastuti & Dillak, 2019). Studies conducted by (Khan *et al.*, 2013; Nurkhin *et al*., 2017; Sucuachi & Cambarihan, 2016; Yang et al., 2010) affirmed that profitability had an effect on firm value, but it is different from a study conducted by (Nugroho & Abdani, 2017).
H_1 : profitability had a positive and significant effect on firm value
Ulum (2017) strongly advocated that intellectual capital is a knowledge resource regarding intangible values that affect a firm's ability and competitiveness. Every firm has unique knowledge, skills, values and solutions that can be transformed into market values. Management of intangible resources helps firms to achieve competitive advantage, increase productivity and market value. The better the management of intellectual capital, the better the firm will have a competitive advantage, which will have an impact on increasing firm profitability. Studies by (Kamal *et al.*, 2011; Zehri *et al*., 2012) believed that intellectual capital had an effect on profitability, but it is different from results of studies conducted by (Alhassan & Asare, 2016; Maditinos *et al*., 2011). Excellent intellectual capital will help firm fulfill stakeholder interests (Yuskar & Novita, 2014). Thus, intellectual capital has an important role in increasing firm value. Firm value can increase if firm's intellectual capital can be managed

properly. Studies by (Lestari & Sapitri, 2016) claimed that intellectual capital hadn't an effect on firm value.

H_2 : intellectual capital had a positive and significant effect on profitability

H_3 : intellectual capital had a positive and significant effect on firm value

Firm size describes whether a firm is small or large reflected in total assets and total sales. Firm size affects capital that will be used for firm's operational activities and ability to generate profits. A bigger firm size reflects a good firm performance which certainly has an impact on increasing firm profitability. Studies conducted by (Chadha & Sharma, 2015; Dawar, 2014; Işık, 2017; Quang & Xin, 2014) declared that firm size had an effect on profitability, but it is different from studies by (Niresh & Velnampy, 2014; Gill & Biger, 2011). A large firm is basically considered to have a stable financial performance, thus attracting investors to invest, which can be seen from increase in firm share price. It encourages an increase in firm value. In addition, a study conducted by (Chandra *et al.*, 2019) asserted that firm size had an effect on firm value, but it is different from studies by (Chadha & Sharma, 2015)

H_4 : firm size had a positive and significant effect on profitability

H_5 : firm size had a negative and significant effect on firm value

3. Method

Figure 2 illustrate the overview of this research's design :

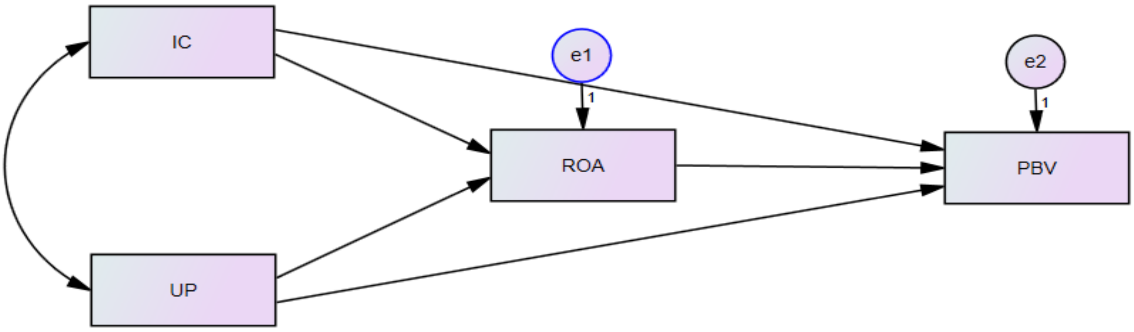

Figure 1: Research Design

Population in this study was financial sector listed on Indonesia Stock Exchange (IDX) for the 2019 period. Sampling was carried out by using a purposive sampling technique with criteria of financial sector firms listed on IDX before 2015 and never delisted from IDX. Thus, a total sample size of 48 companies was obtained. This study consisted of exogenous variables including intellectual capital (X_1) and firm size (X_2), and endogenous variables including profitability (Y_1) and firm value (Y_2).

Table 1. Operationalization of Variables

No.	Variable	Ratio	Sources
1.	Profitability (Y_1)	$ROA = \frac{Net\ come}{Total\ Asset}$	(Akeem et al., 2014; Al Ani & Al Amri, 2015; Quang & Xin, 2014)
2.	Firm Value (Y_2)	$PBV = \frac{Stock\ Price}{Book\ Value}$	(Quang & Xin, 2014; Chadha & Sharma, 2015; Dawar, 2014)
3.	Intellectual Capital (X_1)	VAIC = VACA + VAHU + STVA	(Ulum, 2017; Kamal *et al.*, 2011; Zehri *et al.*, 2012)
4.	Firm Size (X_2)	$Firm\ Size = \ln(total\ assets)$	(Al Ani & Al Amri, 2015; Quang & Xin, 2014)

Sources: Various article, 2020

Data were collected by visiting Indonesia Stock Exchange websites (www.idx.co.id and www.yahoofinance.com). Other data were collected through literature review by citing books, journals, articles, mass media, and previous journals related to study conducted. Data analysis technique used in study was path analysis using AMOS statistical program, namely descriptive statistics test and research hypothesis testing.

4. Result and Discussion

Result Analysis

Sugiyono (2012:147) strongly advocated that descriptive statistics are used to analyze data by describing or representing collected data without making generalized conclusions or generalizations. Table 2 illustrates the descriptive statistics for each year for each variable.

Table 2. Average of Each Variable per Year

	2015	2016	2017	2018	2019	Average
Profitability	1.73	2.06	1.48	1.62	0.76	1.53
Firm Value	1,03	1,65	2,21	1,88	1,87	1.73
Intellectual Capital	3.31	2.82	2.91	3.15	2.69	2.98
Firm Size	16.64	16.81	16.93	16.98	17.05	16.88

Sources: Processed Data, 2020

From table 2 it could be observed that average profitability for each year shows a decreasing trend except for 2018 which there is an increase. Overall, 5 years average profitability value of financial sector firms from 2015 to 2019 was 1.53 times with a standard deviation value of 3.46. The highest profitability value was obtained by PT. Panin Sekuritas Tbk. (PANS) in 2016 amounted to 10.92 times. In 2016, net profit of firm was IDR 259.50 billion, while asset value was only IDR 2,377.37 billion. Thus, firm could use their assets to generate net profit. The lowest profitability value was found in PT. Minna Padi Investama Sekuritas Tbk. (PADI) in 2019 amounted to -27.14 times. In 2019, net loss of firm was IDR 113.54 billion, while its asset value was IDR 418.40 billion. Accordingly, firm had not been able to take advantage of assets to generate net profit.

In terms of firm value, table 2 shows that there is an increase from the year 2015 to 2017, and then from 2018 to 2019 there was a decrease. Overall, 5 years average firm value of financial sector firms from 2015 to 2019 was 1.73 times with a standard deviation of 2.84. The highest firm value was obtained by PT. Asuransi Kresna Mitra Tbk. (ASMI) in 2019 amounted to 21.71 times. Market value of firm share decreased in 2018 which increased in 2019 amounted to 83%. The lowest firm value was obtained by PT. BFI Finance Indonesia Tbk. (BFIN) in 2015 amounted to 0.11 times. Here, market value of firm decreased in 2018 and in 2019;the lowest decrease occurred in 2019 amounted to 18.75%.

Further, the intellectual capital variable from table 2 shows a fluctuating trend in the year from 2015 to 2019 for the yearly average of the values of intellectual capital. Overall, 5 years average of intellectual capital value of financial sector firms from 2015 to 2019 was 2.98 times with a standard deviation value of 2.15. The highest intellectual capital value was obtained by PT. Paninvest Tbk. (PNIN) in 2015 amounted to 19.53 times. Accordingly, firm was able to utilize its intangible assets as an attempt to produce better performance. Besides, the lowest intellectual capital value was obtained by PT. Minna Padi Investama Sekuritas Tbk. (PADI) in 2016 amounted to -10.64 times. It means that firm had not been able to effectively utilizeits intangible assets to improve its performance.

Table 2 also illustrates that the average of the firm size, the firm size trend remains close to constant. Overall, 5 years average firm size value of financial sector firms from 2015 to 2019 was 16.88 times with a standard deviation of 1.94. The highest firm size value was obtained by PT. Bank Rakyat Indonesia Tbk. (BBRI) in 2019 amounted to 21.07 times. Asset value of firm continued to increase during study period; value increased by 9.26% in 2019 compared to previous period. The lowest firm size value was obtained by PT. Minna Padi Investama Sekuritas Tbk. (PADI) amounted to12.94 times. Asset value fluctuated during study period, which decreased by 23.02% in 2019 compared to previous period.

Results of hypothesis testing basically could be used to partially determine the effect of endogenous and exogenous variables. The result of the hypothesis testing can be seen in table 3.

Table 3. Path Analysis Result

Endogenous Variable	Exogenous Variable	Original Sample	T Statistics	P Value
Profitability	Intellectual Capital	0.590	11.098	***
	Firm Size	-0.020	-0.371	0.711
Firm Value	Intellectual Capital	-0.196	-2.544	0.011
	Firm Size	-0.239	-3.824	***
	Profitability	0.175	2.297	0.022

Sources: Processed Data, 2020

The following are results of hypothesis testing:

a. Results of path analysis revealed that beta coefficient value of relationship between intellectual capital and profitability was 0.590. Besides, result of t-statitstics test was 11.098, indicating that intellectual capital had a significant and positive effect on profitability in financial sector.

b. Results of path analysis revealed that beta coefficient value of relationship between firm size and profitability was -0.020. Result of t-statitstics test was -0.371, indicating that firm size had a negative but insignificant effect on profitability of financial sector.

c. Results of path analysis revealed that beta coefficient value of relationship between intellectual capital and firm value was -0.196. Result of t-statitstics test was -2.544, indicating that intellectual capital had a negative and significant effect on firm value in financial sector.

d. Results of path analysis revealed that beta coefficient value of relationship between firm size and firm value was -0.239. Result of t-statitstics test was -3.824, indicating that firm size had a negative and significant effect on firm value in financial sector.

e. Results of path analysis revealed that beta coefficient value of relationship between profitability and firm value was 0.175. Result of t-statitstics test was 2.297, indicating that profitability had a positive and significant effect on firm value in financial sector.

Discussion

Intellectual capital is principally a firm’s intangible resources which are able to create a competitive advantage and encourage an increase in firm performance. Resource Based Theory believes that a firm that is able to manage its resources properly will certainly have a competitive advantage and is believed to be able to create added value for firm which affects its financial performance improvement. This theory is in line with results of hypothesis testing which found that intellectual capital had a significant positive effect on profitability. Thus, firm's ability to manage and control its intangible assets and strategic capital can help firm itself compete, which in turn can increase its profits. This result is in line with the research (Kamal *et al.*, 2011; Zehri *et al*., 2012).

A large firm is basically considered to have a stable financial performance, thus attracting investors to invest, which can be seen from increase in firm stock price. It can encourage an increase in firm value. This statement is not in line with results of hypothesis testing which proved that intellectual capital had a significant negative effect on firm value. In financial sector, investors only pay attention to one of three components of intellectual capital, namely VACA, as their consideration in determining firm value. It is considering the fact that operational activities of Indonesian firms are still dominated by use of physical and financial assets to improve their performance and market value, while the other two components tend to be overlooked. This result is not in line with the research (Lestari & Sapitri, 2016; Yuskar & Novita, 2014).

Importantly, firm size reflects size of a firm as seen through total assets owned by firm. A larger firm size reflects a good firm performance which has an impact on increasing firm profitability. This statement is not in line with results of hypothesis testing which concluded that firm size had insignificant effect on profitability. Financial sector firms have fairly stable financial performance compared to other sectors since this sector plays an important role in smooth running of financial transactions in Indonesia. Based on descriptive statistics, it can be seen that average asset value of firm had increased during study period. However, the increase was stable for both large and small firms. Accordingly, it explains that firm size does not have an impact on profitability value. This result is in line with the research (Niresh & Velnampy, 2014; Gill & Biger, 2011).

A large firm is basically considered to have a stable financial performance, thus attracting investors to invest, which can be seen from increase in firm share price. It can encourage an increase in firm value. This statement is in line with results of hypothesis testing which claimed that firm size had a significant negative effect on firm value. Firms with large asset values encourage management to be more flexible in utilizing existing assets. It results in a lack of efficiency in supervision of operational activities and strategies by management so as to reduce firm value. This result is in line with the research (Chandra *et al.*, 2019)

High firm profitability shows firm's ability to generate profits because the greater the profit, the greater the firm's ability to pay dividends. Accordingly, high firm profitability can attract investors to firm, which in turn encourages an increase in firm value. Results of this study support signaling theory which believes that the higher the firm profitability, the more investors will get a positive signal from firm which can encourage an increase in firm value. Financial sector are a sector with a relatively stable business growth rate so that they are able to attract investors to make an investment. This result is in line with the research (Khan *et al.*, 2013; Nurkhin *et al.*, 2017; Sucuachi & Cambarihan, 2016; Yang et al., 2010)

5. Conclusions

Financial sector firms play an important role in national economy. They focus on activities that streamline financial transactions and carry out function of financial intermediation. It encourages them to compete to meet needs and desires of society in financial sector. To achieve this goal, firms cannot only rely on tangible assets but they need to also utilize intangible assets as an attempt to gain competitive advantage. Firms which have capability to make good use of tangible and intangible assets can increase their performance and competitive advantage. This is able to attract investors to invest in firms which has an impact on increasing firm value.

Last but not least, further studies are expected to involve other financial variables to detect factors affecting profitability and firm value. In addition, this study is also expected to contribute to financial management related to factors that can affect changes in firm profitability in an effort to maximize firm value in the future.

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