

The Effect of Ownership Structure and Intellectual Capital on Firm Value with Firm Performance as an Intervening Variable

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This study aims to examine and analyse the effect of ownership structure and intellectual capital on firm value with the firm's performance as an intervening variable. The research sample was taken from the Indonesia Stock Exchange in 2016; it consisted of 302 firms that fulfilled the requirements of this research. Data were analysed by using the Structural Equation Modelling (SEM) analysis method with the SmartPLS 6.0 program. This study found empirical evidence that: (1) ownership structure can increase firm value, the implication being that the structures of foreign ownership, managerial ownership and institutional ownership have been able to directly increase the firm value; (2) intellectual capital is able to increase firm value, meaning that the Value Added Intellectual Coefficient (VAIC TM) can directly increase firm value; (3) ownership structure can improve firm performance, showing that foreign ownership structures, managerial ownership and institutional ownership can improve firm performance; (4) intellectual capital can improve firm performance, demonstrating that the Value Added Intellectual Coefficient (VAICTM) has been able to motivate firm performance; (5) firm performance can increase firm value, indicating that firm performance that is proxied by ROA and ROE can be improved; (6) firm performance fully mediates the effect of ownership structure on firm value; and (7) firm performance fully mediates the effect of intellectual capital on firm value.

Key words: *Ownership structure, intellectual capital, firm performance and firm value.*

Introduction

The establishment of a firm has two objectives: short-term goals and long-term goals. In the short term, the firm aims to achieve maximum profits by using the resources it has, while in the long-term the firm's main goal is to optimise the firm value. If the firm value is high, the owner will prosper. Firm value is an important concept for investors and creditors, because it is a crucial indicator in assessing the firm as a whole. Firm value is the price that would be paid by the buyer if the firm were sold. The firm value is a reflection of the addition of the total equity of the firm to the firm's debt. Firm value is the value of future earnings in expectations that are recalculated with the right interest rate (Winardi, 2001).

Firm value is very important because it reflects the firm's performance, so can affect investors' perceptions of the firm. The firm expects financial managers to take the best actions for the firm by maximising firm value so that the owner's or shareholders' prosperity (welfare) can be achieved (Nugroho, 2014).

Firm value is a developing value for shareholders, and is reflected in the market price of its shares. Firm value can provide maximum shareholder wealth if the stock price increases; if the share price is high, it will generate wealth for the shareholders. To achieve maximum firm value, a good financial performance is needed to increase the firm's value.

The firm's financial performance is one of the main factors considered by investors when determining their investment decision. Improving financial performance is a necessity for a firm to retain a high firm value and attract investors. On the other hand, the development of stock prices cannot be separated from the firm's financial performance: if the firm's performance is high, the stock price will tend to increase; however, there are times when stock prices do not always reflect the firm's performance because other factors have an impact.

One of the factors that influences the firm value is the ownership structure, which is considered to be one of the core internal mechanisms of corporate governance. Among the researchers who have discussed the relationship between firm ownership structure and value creation that will impact firm performance are Elvin and Norhan (2016), Xia (2008) and Vintila and Gherghina (2015).

The ownership structure illustrates the share ownership composition among government, institutional, public, foreign, family or managerial sectors. The ownership structure is believed to be able to influence the course of the firm's performance to maximise firm value, due to the control exercised (Akdon & Wahyudi, 2006).

The ownership structure in Indonesia has different characteristics from that of companies in other countries. Most companies have concentrated ownership structure characteristics, so the founder can occupy a position as a board of directors or commissioners. Unification of the interests of shareholders, debt holders and management often creates a problem of agency. Agency relations arise when one or more people (principal) employ another person (agent) to provide a service and delegate decision-making authority to the agent (Jensen & Meckling, 1976). Jensen and Meckling (1976) state that agency conflict is caused by, among other things, decision-making about fundraising activities (financing decisions) and about how funds are invested.

The firm's ability in science and technology is one of the most important competitiveness factors. Human resources and science have created benefits and competitive advantages in companies (Chen et al., 2005). As the development of science and technology and tight competition have progressed, business processes have also developed from a business-based to a knowledge-based focus, so the main characteristics of the firm become knowledge based (Sawarjuwono & Kadir, 2003). In other words, business started to be introduced to the knowledge-based economy (Basuki & Kusumawardhani, 2012). According to Pulic (1998), the main goal of a knowledge-based economy is to create added value, which requires a new understanding of physical capital and intellectual potential.

The capacity and effectiveness of the firm in producing and delivering information and knowledge will determine the value and excellence of the firm in the long run (Bontis et al., 2000). Intellectual capital is often defined as knowledge resources in the form of employees, customers, processes or technologies that companies can use in the process of creating value for the firm (Bukh et al., 2005). According to Stewart (2002), intellectual capital is seen as knowledge and experience, which are used to create wealth. Bontis and colleagues (2000) identify intellectual capital as a set of intangible resources (capabilities and competencies) that drive organisations to create firm performance and value. A firm's performance should be measurable in terms of results and describe the empirical conditions of the firm from various agreed sizes. To ascertain the performance that has been achieved, a performance assessment is carried out. The word 'assessment' is often interpreted to mean a process of judgement, while firm performance is something that is produced by a firm in a certain period with reference to the set standards. Thus, a firm's performance assessment implies a process or system of assessment regarding the implementation of the work ability of a firm (organisation) based on certain standards (Brandon & Drtina, 1997; Kaplan & Norton, 1996; Lingle & Schiemann, 1996).

Saleh and colleagues (2007) states that intellectual capital has become an important source for companies to achieve economic success. In addition, the role of intellectual capital in creating corporate value is important because intellectual capital is also one of the pillars of

competitive advantage and shows better financial performance. Here, intellectual capital consists of human capital, capital structure (internal structure) and relational capital (external structure). Human capital is knowledge held by employees in the form of innovation, flexibility, tolerance, motivation, satisfaction, learning capacity, loyalty, training and formal education. Firm value is closely related to human capital and structural capital that are part of intellectual capital.

Elvin and Norhan (2016) have studied the impact of ownership structure on firm performance, finding that ownership structure has a positive effect on the firm's financial performance. In contrast, Sudarma (2004) found that ownership structures actually had a negative impact on a firm's financial performance. While Vintila and Gherghina (2015) found that the structure of ownership has a negative influence on firm value, the opposite results were found by Xia (2010) and Martin-Reyna and Durán-Encalada (2012), who suggest that a positive correlation exists between ownership structure and firm value.

Bontis and colleagues (2000), Chang and Jasper (2008), Kamal and colleagues (2009) and Zehri et al. (2012) examined the influence of intellectual capital on the financial performance of companies, found that intellectual capital had a positive influence on the firm's financial performance. While the research conducted by Iranmahn and colleagues (2014), Nuryaman (2015), Alisufli and Safaiee (2015) showed a positive influence of intellectual capital on firm value, this contradicted the work of Bemby and colleagues (2015), who found a negative relationship between intellectual capital and firm value, with managerial ownership a moderating variable.

Based on the above explanation, the formulation of the problem in this study can be summarised using several research questions:

- 1 Does the ownership structure affect the firm value?
- 2 Does intellectual capital affect the firm value?
- 3 Does the ownership structure affect the firm's performance?
- 4 Does intellectual capital affect the firm's performance?
- 5 Does the firm's performance affect the firm value?
- 6 Does the ownership structure affect the firm value through the firm's performance?
- 7 Does intellectual capital affect the firm value through the firm's performance?

The results of this study are expected to contribute to determining firm policies, and can be used as consideration in decision-making. Moreover, they are expected to be useful for giving information and as material for consideration regarding performance, financial condition, growth and value of a firm, so that investors and creditors can make the right decisions with regard to investing.

Theoretical Review

Agency Theory

Agency theory explains the relationship that occurs between the principal and the agent, where the owner and shareholders of the firm are the principal while the management is the agent (Elyanto, 2013). Jansen and Meckling (1976) state that agency theory is a contractual relationship that occurs between principals who use agents to carry out services according to the principal's interests in the event of separation of ownership and control of the firm. The principal appoints an agent to manage the firm, which contains delegation of authority from the principal to the agent in making firm decisions on behalf of the owner. Thus the agent will have more information than the principal. This inequality of information is more often referred to as information asymmetry.

Information asymmetry is unbalanced information that is caused by the lack of information distribution between the principal and the agent, resulting in problems arising due to difficulties in monitoring and controlling the agent's actions (Emirzon, 2007).

Jansen and Meckling (1976) state that agency theory emphasizes the importance of delegating authority from the principal (firm owner) to agents (firm management), where agents have an obligation to manage firm in accordance with the interests of the principal. The delegation of authority causes management to have power and control over the firm's survival, because management is required to always be transparent in the management activities of the firm. For this reason, through management financial statements can show one form of responsibility for the performance of the firm, information contained in financial statements can be used by firm stakeholders to assess the firm's condition.

Resource based theory

According to the Market Based View (MBV), the conditions and characteristics of the external environment are the main inputs and determinants of strategies to achieve high performance. Under the Resource Based View (RBV), the internal environment or internal resources are the main inputs and determinants of strategies to achieve high performance (Hitt et al., 2011). This is in line with the strategic management approach, which makes the external and internal environments inputs in strategy formulation (Thompson & Strickland, 1999).

Barney (1991) says that Resource Based Theory (RBT) is a way of thinking that has developed in strategic management theory, and in the context of the competitive advantage of companies, which believes that companies will achieve excellence if they have superior resources. In the view of RBT, the company will excel in business competition and get good financial performance if it owns, controls and utilises important strategic assets, namely

tangible and intangible assets, and is able to unite the two to be used as potential strategies in achieving a competitive advantage.

Company resources can be divided into three types: tangible, intangible and human resources. There are four criteria for resources in a company in order to achieve sustainable competitive advantage:

1. Resources must add positive value to the company. Resources provide value if they help companies to take advantage of market opportunities or help reduce market threats. There is no advantage of having resources if you do not add or increase the value of the company.
2. Resources must be unique or rare among potential competitors that exist today. Resources must be rare or unique to offer a competitive edge. Resources owned by several companies in the market cannot provide a competitive advantage, because they cannot design and implement a unique business strategy compared to other competitors.
3. Resources must be difficult to imitate. Resources can be the basis of sustainable competitive advantage if companies that do not hold these resources cannot replicate these resources.
4. Resources cannot be replaced with other resources by competing companies, nor can resources be replaced with alternative resources.

Ownership Structure

The ownership percentage is determined by the ratio of the percentage of shares to the total shares of the firm. Someone who owns shares in a firm can be said to be the owner of the firm even though they may only own a few shares.

According to Jansen and Mecking (1976), the term ‘ownership structure’ is used to show that the important variables in capital structure are not only determined by debt and equity, but also by the percentage of shares owned by management and institutions. One form of corporate governance mechanism that can be used to equalise principal and agent interests is concentration of ownership. According to Demsetz and Lehn (1985), the principal has a way to monitor the agent through concentration of ownership, so the agent acts in accordance with the interests of the principal.

The percentage of share ownership of a firm will determine the level of control of the firm’s management. According to Shleifer and Vishny (1997), the owner with a large percentage of ownership can conduct supervision because they can obtain information and they have voting rights that can control management. In particular, shareholders with ownership rates above

51 per cent will have direct control rights over the firm and management, including in determining the firm's debt policy.

Intellectual Capital

It can be concluded that intellectual capital is a firm-owned resource that will provide future benefits. It provides a diversity of different organisational values such as increasing the benefits of acquiring innovations from other companies, consumer loyalty, cost reductions and productivity improvements (Hariyati, Tjahjadi & Soewarno, 2019). The elements of intellectual capital are divided into three categories: knowledge related to employees (human capital); knowledge related to customers (customer capital or relational capital); and knowledge related to the firm (structural or organisational capital) (Bontis et al., 2000).

Williams (2001) states that intellectual capital as information and knowledge is applied to work to create value. Bontis and colleagues (2000) state that, in general, the researchers identified three main constructs of intellectual capital: human capital, structural capital and customer capital. Human capital represents individual knowledge stock in an organisation, in the form of its employees; it is a combination of genetic inheritance, education, experience and attitude about life and business. Structural capital covers all non-human storehouses of knowledge in the organisation, including databases, organisational charts, process manuals, strategies, routines and all things that make the value of the firm greater than the value of the material. Customer capital is the knowledge inherent in marketing channels and customer relationships, which an organisation develops through the business process (Bontis et al. 2000).

Value Added Intellectual Coefficient (VAIC™)

The Value Added Intellectual Coefficient (VAIC™) method was developed by Pulic (1998). It is designed to provide information about the efficiency of value creation, tangible assets and intangible assets. VAIC™ is used because it is considered a suitable indicator of intellectual capital in empirical research. There are several reasons for the use of VAIC™. First, VAIC™ provides a basic and consistent standard for financial figures that are generally available from the firm's financial statements (Pulic, 1999), allowing more effective comparative analysis. Second, all data used in the calculation of VAIC™ is based on audited information, so calculations can be considered objective and verifiable (Pulic, 1998, 2000). VAIC™ is an analytical procedure designed to enable management, shareholders and other relevant stakeholders to effectively monitor and evaluate the efficiency of added value with total firm resources and each main resource component. VAIC™ begins with the firm's ability to create added value, which is the most objective indicator to assess business success and demonstrate the firm's value-creation ability (Pulic, 1998).

Pulic (1998) explains that value added is calculated from the difference between output and input. Tan and colleagues (2007) state that output represents revenue and includes all products and services sold in the market, while input includes all expenses used in obtaining revenue. According to Tan and colleagues (2007), the important thing in this model is that labour expenses are not included in input. Pulic (1998) states that, 'The labor expenditures are not calculated as costs any more but represent an active component of value creation.' This means that labour expenses are not considered a cost because they are an active component of the process of value, which means the costs associated with labour are not treated as a cost but rather as an investment.

Pulic (1988) states that the main components of VAICTM can be seen from firm resources: physical capital (VACA – Value Added Capital Employed), human capital (VAHU – Value Added Human Capital) and structural capital (STVA – Structural Capital Value Added). VAICTM is well known as Value Creation Efficiency Analysis, which is an indicator that can be used in calculating value efficiency generated by the firm; it is obtained by combining CEE (Capital Employed Efficiency), HCE (Human Capital Efficiency) and SCE (Structure Capital Efficiency) (Pulic, 1998).

Firm Performance

Performance is the work ability that is indicated by the work results. Performance is: (1) the process or manner of performing; (2) a notable action or achievement; and (3) the performing of a play or other entertainment.

Firm performance is something that is produced by the firm in a certain period; it refers to the standards set. Firm performance should be measurable results and describe the empirical conditions of a firm of various agreed sizes. To find out the performance achieved, a performance assessment is carried out.

The purpose of performance assessment is to motivate personnel to achieve organisational goals and adhere to predetermined standards of behaviour, to produce actions and results desired by the organisation. Behavioural standards can be management policies or formal plans, as outlined in strategic plans, programs and organisational budgets. Performance assessment is also used to suppress undue behaviour and to stimulate and enforce behaviour that should be desired, through feedback on performance results in term of time and rewards, both intrinsic and extrinsic.

Firm Value

Firm value is often associated with stock prices, which are investors' perceptions of the value of the firm. If the stock price is high, the firm value will be high. This is because the firm's stock price reflects the overall assessment of investors for each equity owned. According to Van Horne (1998), 'the value is represented by the market price of the firm's common stock, which is a function of the firm's investment, financing and dividend decisions'. Having high firm value will make the market believe in the firm's performance and the firm's prospects in the future. Maximising firm value is very important for a firm, because it also means maximising shareholder prosperity, which is the firm's main goal. Salvatore (2005) states that the main goal of the firm according to the theory of the firm is to maximise the value of the firm. Sartono (2010: 8) agrees, stating that the main goal of the firm is not to maximise profit but rather to maximise shareholder prosperity through maximising the value of the firm. Companies must implement financial management professionally so the maximisation of firm value is successfully carried out and the firm's prospects and future are clear.

Conceptual Framework

The conceptual framework is shown in Figure 1.

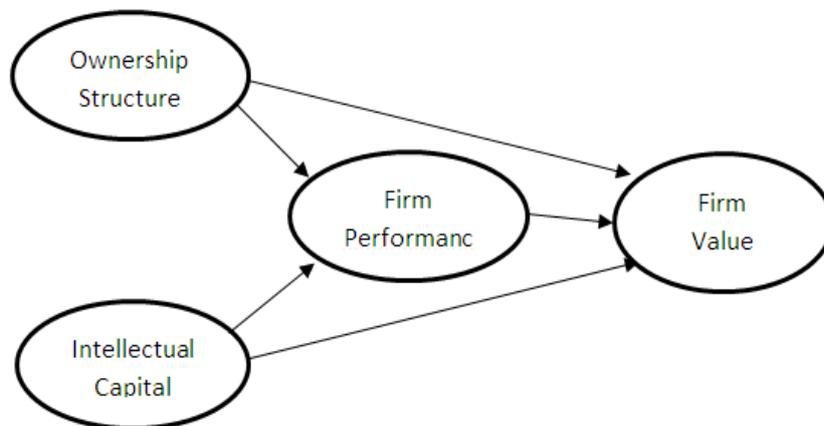


Figure 1. Conceptual framework

Hypothesis

There is a significant effect of ownership structure and intellectual capital on firm performance and firm value, as well as the significant influence of the firm's performance on firm value; the firm's performance is also able to mediate the relationship between ownership structure and firm value with the firm's intellectual capital.

Research Methods

Research Approach

This study uses a quantitative approach, explanatory research, with the intention of emphasising the testing of theories or concepts through measuring variables and procedures for analysing data with statistical tools for the purpose of testing hypotheses.

Operational Definition of Variables

The dependent variable in this study, firm value, was measured using, Tobin's Q and PBV:

$$\text{Tobins Q} = (\text{EMV} + \text{D}) / (\text{EBV} + \text{D})$$

$$\text{PBV} = (\text{Closing Stock Prices}) / (\text{Stock Sheet Per Value Book})$$

Independent variable (1), ownership structure, is divided into three main indicators: foreign ownership, managerial ownership and the respective institutional ownership, each measured by percentage:

$$\text{Ownership} = (\text{Amount of stock owned}) / (\text{Total stock circulated}) \times 100\%$$

Intellectual capital is measured by the VAICTM method, the three components of which are human capital efficiency (HCE), structural capital efficiency (SCE) and capital employed efficiency (CEE) (Pulic, 1998, 2000).

Mediation variable: The firm's performance in this study is measured by ROA and ROE:

$$\text{ROA} = (\text{Profit after tax}) / (\text{Total assets})$$

$$\text{ROE} = (\text{Profit after tax}) / (\text{Total equity})$$

Types and Data Sources

Secondary data is used in this study. This is a source of research data obtained by the researcher indirectly through intermediary media, or obtained and recorded by other parties. The data sources used in this study are financial reports obtained from the Indonesia Stock Exchange (IDX), using data-collection techniques including studying the required documents or data, followed by recording and calculation by collecting information to solve the problem based on relevant data carried out to all companies listed on the Indonesia Stock Exchange (IDX) in 2016.

Data Analysis Result

Several steps were taken to process data by using WarpPls 6.0 to find the relationship between the independent variable, dependent variable and mediation variable. The results of data processing are shown below.

The Estimation of Outer Model Measurement

Outer model measurement is done by measuring reflective indicators, which are judged based on the relationship between the item score or component score estimated based on the value of the outer loading factor. The following is an outer model measurement based on three criteria: convergent validity, discriminant validity and composite reliability.

Convergent Validity

The measurement model validity test can be seen from the correlation between the score indicators and the score constructs (loading factors) criteria used to assess that an outer model has met the convergent validity requirements, namely the loading factor criteria of each indicator. A score of more than 0.70 can be valid for the p-value if <0.05 is considered significant (Sholihin & Ratmono, 2013: 66).

The results of data processing (Table 1) show there are two proxies that do not fulfil the criteria for convergent validity and must be removed: the SK2 proxy and the SK 3 proxy for the ownership structure variable.

Table 1: The results of combined loadings and cross-loadings factor

	SK	MI	NP	KP	P value
SK1	0.911	-0.074	-0.008	0.061	<0.001
SK2	0.122	0.184	0.123	-0.262	0.016
SK3	-0.945	-0.047	0.009	0.025	<0.001
MI	-0.000	1.000	-0.000	0.000	<0.001
NP1	-0.013	-0.003	0.967	-0.016	<0.001
NP2	0.013	0.003	0.967	0.016	<0.001
KP1	0.016	0.061	-0.086	0.953	<0.001
KP2	-0.016	-0.061	0.086	0.953	<0.001

Table 2 shows the loading-factor after the elimination process.

Table 2: The loading factor of all variable after elimination

Variable	Proxy	Loading-factor	P-value	Information
SK	SP1	1.000	<0.001	Fulfil convergent validity
MI	MI	1.000	<0.001	Fulfil convergent validity
NP	NP1	0.967	<0.001	Fulfil convergent validity
	NP2	0.967	<0.001	Fulfil convergent validity
KP	KP1	0.953	<0.001	Fulfil convergent validity
	KP2	0.953	<0.001	Fulfil convergent validity

Based on Table 3, ownership structure variables with SK1 proxy have a loading factor of 1.000, more than -0.000 , 0.000 , -0.000 and 0.000 . It can be said that the SK1 proxy fulfils the criteria for discriminant validity. Intellectual capital variables with a proxy of MI have a loading-factor of 1.00.

Table 3: Comparison of loading-factors and other variables

Indicator	loading	>	Loading-factor against other constructs				Information
			SK	MI	NP	SP	
SK1	1.000	>		-0.000	0.000	-0.000	Fulfilled
MI	1.000	>	-0.000		-0.000	0.000	Fulfilled
NP1	0.967	>	-0.010	-0.002		-0.017	Fulfilled
NP2	0.967	>	0.010	0.002		0.017	Fulfilled
KP1	0.953	>	0.021	0.065	-0.085		Fulfilled
KP2	0.953	>	-0.021	-0.065	0.085		Fulfilled

Table 4: Comparison of loading-factors and other variables

	SP	MI	NP	KP
SK	1.000	-0.051	0.044	0.013
MI	-0.051	1.000	0.118	0.406
NP	0.044	0.118	0.967	0.740
KP	0.013	0.406	0.740	0.953

more than -0.000 , -0.000 , 0.000 and 0.000 . It can be said that the proxy of MI has met the criteria for discriminant validity.

The firm value variable has two proxies: NP1 and NP2. The firm value variables with NP1 proxy have a loading factor of 0.967, more than -0.010 , -0.002 , -0.017 and -0.011 . So that it can be said that the NP1 proxy meets the criteria of discriminant validity, the firm value variables with a NP2 proxy have a loading factor of 0.967, greater than 0.010, 0.002, 0.017 and 0.011. It can therefore be said that the NP2 proxy meets the discriminant validity criteria.

The firm performance variable has two proxies: KP1 and KP2. Firm performance variables with a KP1 proxy have a loading factor of 0.953, greater than 0.021, 0.065, -0.085 and -0.102. It can therefore be said that the NP1 proxy meets the criteria for discriminant validity. firm performance variables with NP2 proxy have a loading factor of 0.953, more than -0.021, -0.065, 0.085 and 0.102. It can therefore be said that the NP2 proxy meets the criteria of discriminant validity.

Based on Table 4, it can be seen that all variables have met the criteria for discriminant validity. The ownership structure has a square root AVE of 1000, more than -0.051, 0.044, 0.013 and -0.002. Intellectual capital has a square root AVE of 1000, more than -0.051, 0.118, 0.406 and -0,016. The firm value has an AVE square root of 0.967, more than 0.044, 0.118, 0.740 and 0.020. The firm's performance has an AVE square root of 0.953, more than 0.013, 0.406, 0.740 and -0.025.

Composite Reliability

The composite reliability test aims to measure the reliability of each construct, which must have composite reliability of 0.70 so that it can be said to be reliable. Table 5 shows that the results of composite testing reliability of each construct are 1.000 for ownership structure, 1.000 for intellectual capital and 0.966 for firm value. Based on this value, all constructs can be said to have met the composite reliability criteria.

Table 5: Composite reliability coefficients

	SK	MI	NP	KP	Criteria	Information
Composite reliability	1.000	1.000	0.966	0.952	0.70	Meets composite reliability

The Estimation of Inner Model Measurement

The next step is conducting structural evaluation (inner model), which includes the model fit test (model fit), path coefficient (β), P value and R squared (R^2). In the compatible model test, there are three test indexes, namely average path coefficient (APC), average R^2 (ARS) and average variance factor (AVIF) with APC and ARS criteria accepted with p-value <0.05 and AVIF <5 (Sholihin & Ratmono, 2013: 61). The path coefficient and p value are used to determine whether the hypothesis is accepted or rejected. Decision H_0 is accepted if the p value $\geq 0,1$; H_a is accepted if the p value <0.1. R^2 is used to measure how far the independent variable goes towards explaining the dependent variable, from weak to moderate and strong. Each has a value of ≥ 0.25 ≥ 0.50 and ≥ 0.75 .

Table 6: General SEM analysis result

	Index	P value	Criteria	Information
APC	0.276	P<0.001	p<0,05	Accepted
ARS	0.473	P<0.001	p<0,05	Accepted
AVIF	1.053 Ideally < 3.3		Acceptable if < 5	Accepted

The output results explain that APC has an index of 0.276 with a value of P <0.001, while ARS has an index of 0.473 with P <0.001. APC and ARS have met the criteria because they have a value of p <0.05. The AVIF value that must be <0.05 has been fulfilled because, based on that data, AVIF is 1.053. Thus the inner model can be accepted.

Hypothesis Testing Results

Direct Influence Hypothesis Test Result

The Effect of Ownership Structure on Firm Value

Figure 2 shows a research model, along with the results obtained based on data processing by using the WarpPLS 6.0 program:

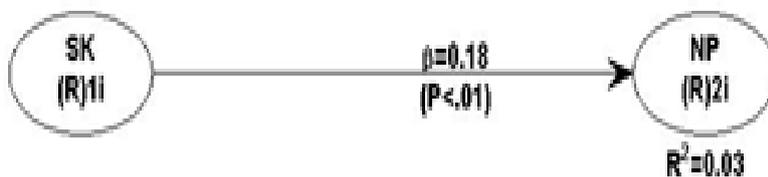


Figure 2. The effect of ownership structure on firm value

Based on Figure 2, it can be seen that SK (ownership structure) affects NP (firm value) with a value of β 0.18 and p value <0.01. R2 value of 0.03 means that the ownership structure can explain the value of the firm by 3 per cent, with 97 per cent explained by other variables. Hypothesis 1 has a p value of <0.05 with a positive β value, which means the ownership structure has a positive effect on firm value. Hypothesis 1 is therefore accepted.

The Effect of Intellectual Capital on Firm Value

Based on figure 3, it can be seen that MI (intellectual capital) has an effect on NP (firm value) with a value of β 0.30 and p value <0.01. The R² value of 0.09 means that intellectual capital can explain the value of the firm by 9 per cent, with 91 per cent explained by other

variables. Hypothesis 1 has a p value <0.05 with a positive β value which means that intellectual capital has a positive effect on firm value. Hypothesis 2 is therefore accepted.

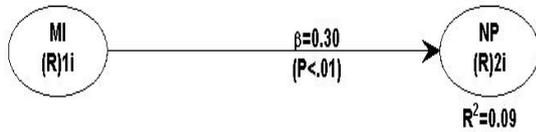


Figure 3. The effect of intellectual capital on firm value

The Result of the Indirect Effect Hypothesis Test

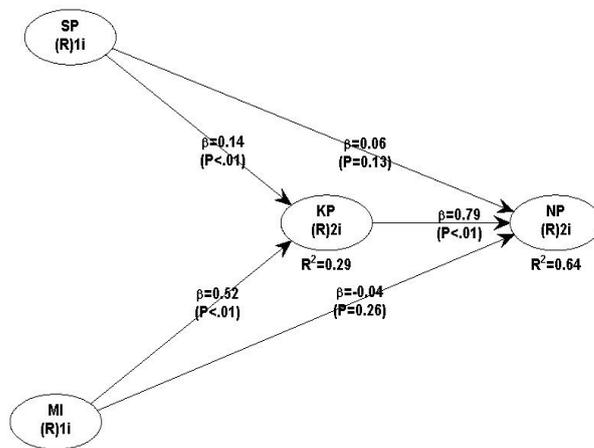


Figure 4. Indirect effect

Table 7: Panel B PLS Results (path coefficient, R^2 dan P values)

Panel B. Full models		
Variable	Patch to	
	Firm performance	Firm value
Ownership structure	0.136 (0.008)**	0.065 (0.128)
Intellectual capital	0.516 (<0.001)**	-0.038 (0.256)
Firm performance		0.792 (<0.001)**
R²	0.293	0.645

The Effect of Ownership Structure on Firm Performance

Based the picture above, it can be seen that path coefficients and p-values from ownership structure to firm performance show a significant effect of 0.13 and 0.008 and R^2 value of 0.293 means the ownership structure mechanism can explain the firm's performance by

2.7 per cent, with 97.3 per cent explained by other variables. Hypothesis 3 has a p value of <0.05 with a positive β value; this means that the ownership structure has a positive effect on firm value. Hypothesis 3 is therefore accepted.

The Effect of Intellectual Capital on Firm Performance

Based the picture above, it can be seen that path coefficients and p-values from intellectual capital to firm performance show a significant effect of 0.516 and <0.001 and R^2 value of 0.293. It means the ownership structure mechanism can explain the firm's performance by 2.7 per cent, with 97.3 per cent explained by other variables. Hypothesis 4 has a p value of <0.05 with a positive β value, which means that intellectual capital has a positive effect on firm performance. Hypothesis 4 is therefore accepted.

The Effect of Firm Performance on Firm Value

Based the picture above, it can be seen that path coefficients and p-values from firm performance to firm value show a significant effect of 0.792 and <0.001 and R^2 value of 0.645. This means that the firm's performance mechanism can explain the firm's value of 66.2 per cent, with 33.8 per cent explained by other variables. Hypothesis 5 has a p value of <0.05 with a positive β value, which means that the firm's performance has a positive effect on firm value. Hypothesis 5 is therefore accepted.

The Effect of Ownership Structure on Firm Value Through Firm Performance

The direct effect of SK (ownership structure) to NP (firm value) shows a significant effect of 0.18 with a p value of <0.001 ($p < 0.05$). After entering the KP variable (firm performance) in the model, though, the direct effect of SK to NP becomes insignificant at 0.13. This allows KP as a full mediator but it must be able to fulfil the next conditions. The indirect effect of SK to NP by mediating firm performance (KP) shows a significant indirect effect, namely path coefficients and p-values from SK to KP of 0.136 and 0.008 ($p < 0.05$), while path coefficients and p-values of KP to NP were 0.792 and <0.001 ($p < 0.05$). This was supported by the P value of indirect effect for a path with two segments, which showed a significant effect of SK to NP of 0.004 ($p < 0.05$). Hypothesis 5 is therefore accepted. Firm performance (KP) is a full mediator of the relationship of ownership structure on firm value because all conditions have been fulfilled.

The Effect of Intellectual Capital on Firm Value Through Firm Performance

The direct effect of MI (intellectual capital) to NP (firm value) shows a significant effect of 0.30 with a value of $p < 0.001$ ($p < 0.05$). After entering the KP variable (firm performance) in

the model, though, the direct effect of MI to NP becomes insignificant at 0.26. This allows KP as a full mediator but it must be able to fulfil the next conditions. The indirect effect of MI to NP by mediating firm performance (KP) shows a significant indirect effect; they are path coefficients and p-values from SK to KP of 0.516 and <0.001 ($p < 0.05$), while path coefficients and p-values of KP to NP were 0.792 and <0.001 ($p < 0.05$). This was supported by the P value of indirect effects for paths with two segments, which showed a significant effect of MI to NP <0.001 ($p < 0.05$). Thus the goal hypothesis is accepted, namely the firm performance (KP) as a full mediator of the relationship of intellectual capital and firm value because all conditions have been fulfilled.

The Effect of Intellectual Capital on Firm Value Through Firm Performance

The direct effect of MI (intellectual capital) on NP (firm value) shows a significant effect of 0.30 with a value of $p < 0.001$ ($p < 0.05$). But after entering KP variable (firm performance) in the model, the direct effect of MI to NP becomes insignificant at 0.26. This allows KP as a full mediator, but it must be able to fulfil the next conditions. The indirect effect of MI to NP by mediating firm performance (KP) shows a significant indirect effect; they are path coefficients and p-values from SK to KP of 0.516 and <0.001 ($p < 0.05$). While path coefficients and p-values of KP to NP were 0.792 and <0.001 ($p < 0.05$). This was supported by the P value of indirect effects for paths with two segments, which showed a significant effect of MI to NP <0.001 ($p < 0.05$). Thus the goal hypothesis is accepted, namely the firm performance (KP) as a full mediator of the relationship of intellectual capital and firm value because all conditions have been fulfilled.

Conclusion

This study aimed to determine the effect of ownership structure and intellectual capital on firm performance and firm value as mentioned earlier, and the effect of firm performance on firm value; firm performance is able to mediate the relationship between ownership structure and firm value and intellectual capital with firm value, and with these factors having a dominant effect on firm value.

The significant variables in the study can be interpreted as follows:

- Ownership structure can increase firm value; the implication is that the structure of foreign ownership, managerial ownership and institutional ownership has been able to directly increase firm value.
- Intellectual capital is able to increase firm value; this means the VAIC TM can directly increase firm value.



- Ownership structure can improve firm performance, which shows that the structure of foreign ownership, managerial ownership and institutional ownership has been able to improve firm performance
- Intellectual capital can improve firm performance; this indicates that the VAIC TM has been able to drive the firm's performance effectively.
- Firm performance can increase firm value; this shows that the firm's performance proxied by the ROA and ROE is able to increase firm performance.
- Firm performance fully mediates the effect of ownership structure on firm value.
- Firm performance fully mediates the effect of intellectual capital on firm value.

Proposed direction for future research

Referring to the results and discussion of this research, it can be suggested that the research indicators be expanded, rather than being limited to three variables in this study; it may also be worth increasing the research variables.



REFERENCES

- Akdon, H. & Wahyudi, D. R. (2006). *Conflict Management in Organization*. Bandung : Alfabeta, Anggota Ikatan Penerbit Indonesia (IKAPI). (in Bahasa)
- Alisufli, H. dan Safaiee, Z. (2015). The Relationship Between Intellectual Capital, Firm Value And Transparency. *International Journal of Current Research*, 7(12), 24562-24568
- Basuki, & Kusumawardhani, T. (2012). Intellectual capital, financial profitability, and productivity: An exploratory study of the Indonesian pharmaceutical industry. *Asian Journal of Business and Accounting*, 5(2), 41–68.
- Barney, J.B.(1991). Firm resources and sustained competitive advantage. *Journal of Management*. 17, 99-120. <https://doi.org/10.1177/014920639101700108>
- Bemby, B.S., Mukhtaruddin, Dr., Hakiki, A. & Ferdianti, R. (2015). Intellectual Capital ,Firm Value And Ownership Structure As Moderating Variable: Empirical Study On Banking Listed In Indonesia Stock Exchange Period 2009-2012. *Asian Social Science*. 11(16). <https://doi.org/10.5539/ass.v11n16p148>
- Bontis, N., Keow, W.C.C, & Richardson, S. (2000). Intellectual Capital and Business Performance in Malaysian Industries. *Journal of Intellectual Capital*, 1(1), 85-100, <https://doi.org/10.1108/14691930010324188>
- Brandon. C. & Drtina, E. (1997). *Management Accounting : Strategy and Control*.Canada: McGraw Hill Companies. Inc
- Bukh, P.N, Christensen, K.S., & Mouritsen, J. (2005). Disclosure of Information in Intellectual Capital in Danish IPO Prospectus. *Accounting, Auditing and Accountability Journal*, 18(6), 713-732. <https://doi.org/10.1108/09513570510627685>
- Chen, M-C., Cheng, S-J, & Hwang, Y. (2005). An Empirical Investigation of The Relationship Between Intellectual Capital and Firm's Market Value and Financial Performance. *Journal of Intellectual Capital*. 6(2), 159-176. <https://doi.org/10.1108/14691930510592771>
- Demsetz, H. and Lehn, K. (1985). The Structure of Corporate Ownership: Causes and Consequences. *Journal of Political Economy*, 88, 1155-1177, <https://www.jstor.org/stable/1833178>



- Elvin, P. & Norhan, N. I. (2016). Ownership Structure, Corporate Governance and Firm Performance. *International Journal of Economics and Financial Issues*, 6(S3), 99-108, <https://doi.org/10.1108/10867371211266937>
- Elyanto, A. A. (2013). *Analysis of Audit Committee Characteristic toward Financial Distress*. Fakultas Ekonomika dan Bisnis. Universitas Diponegoro Semarang. (in Bahasa)
- Emirzon, J. (2007). *Good Corporate Governance Principles: New Paradigm in Business Practices Indonesia*. Yogyakarta: Genta Press (in Bahasa)
- Hariyati, H., Tjahjadi, B., & Soewarno, N. (2019). The mediating effect of intellectual capital, management accounting information systems, internal process performance, and customer performance. *International Journal of Productivity and Performance Management*. <https://doi.org/10.1108/IJPPM-02-2018-0049>
- Hitt, M.A, Ireland, D.I, & Hoskisson, R.E. (2011). *Strategic Management: Competitiveness and Globalization*, 9th Edition, Canada: South-Western
- Iranmahn, M., Moeinaddin, M., Shahmoradi, N., & Heyrani, F. (2014). The Effect of Intellectual Capital on Cost of Finance and Firm Value. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 4(2), 1-8.
- Jensen, M. C. & Meckling, W. H. (1976). Theory Of The Firm: Managerial Behavior, Agency Cost And Ownership Structure. *Journal of Financial Economics*, 3(4), 305-360, [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X)
- Kamal, M.H.M., Mat, R., Rahim, N.A., Husin, N., & Ismail, I.B. (2009). Intellectual Capital And Firm Performance Of Commercial Banks In Malaysia. *Asian Economic and Financial Review*, 2(4), 577-590
- Kaplan, R.S. & Norton, D.P. (1996). *The Balanced Scorecard: Translating Strategy into Action*. Boston: Harvard Business School Press.
- Lingle, J.H. dan Schiemann, W.A. (1996). From balanced scorecard to strategic gauges: is measurement worth it? *Management Review*, 5(3), 56-61
- Martin-Reyna, J.M.S. & Durán-Encalada, J.A. (2012). Ownership Structure, Firm Value and Investment Opportunities Set: Evidence from Mexican Firms. *Journal of Entrepreneurship, Management and Innovation (JEMI)*, 8(3), 35-57. <https://doi.org/10.7341/2012833>
- Nugroho, R. (2014). *Public Policy*. Jakarta: PT. Elex Media Komputindo



- Nuryaman. (2015). The Influence of Intellectual Capital on The Firm's Value with The Financial Performance as Intervening Variable. *Procedia - Social and Behavioral Sciences*, 211(2015), 292 – 298, <https://doi.org/10.1016/j.sbspro.2015.11.037>
- Pulic, A. (1998). Measuring the Performance of Intellectual Potential in Knowledge Economy. Paper presented at the the 2nd McMaster World Congress on Measuring and Managing Intellectual Capital, Austria.
- Pulic, A. (1999). Basic Information on VAIC™. – An Accounting Tool For IC Management *International Journal Technology Management*, 702-714, <https://doi.org/10.1504/IJTM.2000.002891>
- Pulic, A (2000). VAIC - An Accounting Tool for IC Management. *International Journal of Technology Management*, 20(5). <https://doi.org/10.1504/IJTM.2000.002891>
- Saleh, Norman Mohd, Rahman, Mara Ridhuan Abdul, dan Hasan. Mohamat Sabri. (2007). Ownership Structure and Intellectual Capital Performance in Malaysian Companies Listed in MESDAQ. *Asian. Academy of Management Journal of Accounting and Finance*, 5(1), 1–29, <https://ssrn.com/abstract=1153908>
- Salvatore, D. (2005). *Managerial Economics*. Fifth Edition. Singapore: Thomson Learning
- Sartono, A. 2010. *Manajemen Keuangan Teori dan Aplikasi*. Edisi Keempat. BPFE, Yogyakarta
- Sawarjuwono, T. & Kadir, P.A. (2003). Intellectual Capital: Perlakuan, Pengukuran, dan Pelaporan (Sebuah Library Resarch). *Jurnal Akuntansi dan keuangan*. 5(1), 35-57.
- Shleifer. A and R. Vishny. (1986). Large Shareholders and Corporate Control. *Journal of Political Economics*, 95, 461-488, <https://doi.org/10.1086/261385>
- Sholihin, M., & Ratmono, D. (2013). Analisis SEM-PLS dengan WarpPLS 3.0 untuk Hubungan Nonlinier dalam Penelitian Sosial dan Bisnis. Yogyakarta: CV Andi Offset.
- Sudarma, M. (2003) Pengaruh Struktur Kepemilikan saham, Faktor Intern, Faktor Ekstern terhadap Struktur Modal dan Nilai Perusahaan, Disertasi program Pasca sarjana Universitas Brawijaya Malang
- Stewart, T. (2002). *Intellectual Capital: Organization New Wealth*. Jakarta: PT. Elex. Media Komputindo
- Thompson, A. A. Jr. & Strickland III, A.J (1999). *Strategic Management: Concepts and Case*, 11th ed, McGraw-Hill Companies.



- Van Horne, J.C. (1998). *Financial Management And Policy*, 11th Edition, Prentice Hall, New Jersey
- Vintila, G. & Gherghina, S.C. (2015). Does Ownership Structure Influence Firm Value? An Empirical Research towards the Bucharest Stock Exchange Listed Companies. *International Journal of Economics and Financial Issues*, 5(2), 501-514
- Williams, M. (2001). Are intellectual capital performance and disclosure practice related? *Journal of Intellectual Capital*, 2(3), 192-203.
<https://doi.org/10.1108/14691930110399932>
- Chang, W.S. & Jasper, J. (2008). A Human Capital-Driven Framework and the Role of Technological Capital in Measuring Intellectual Capital. *SSRN Electronic Journal*, 1-13
- Winardi, J. (2001). *Motivation and Motivating in Management*. Jakarta: Raja Grafindo persada (in Bahasa)
- Xia, L. (2008). Founder Control, Ownership Structure and Firm Value: Evidence from Entrepreneurial Listed Firms in China. *China Journal of Accounting Research*, 1(1),
[https://doi.org/10.1016/S1755-3091\(13\)60004-0](https://doi.org/10.1016/S1755-3091(13)60004-0)
- Zehri, Cokri, Abdelbaki, A., Bouabdellah, N. (2012) How Intellectual Capital Affects a Firm's Performance? *Australian Journal of Business and Management Research*, 2(8), 24-31