



# Intellectual Capital and Capital Structure Effect on Firms' Financial Performances

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## Abstract

**Objective** – This study aims to determine the influence of intellectual capital and capital structure on financial performance in manufacturing companies in Indonesia.

**Design/methodology** – The data were collected from all 140 manufacturing companies from 2015 to 2019. While most studies of intellectual capital were conducted by using multiple regression analysis, we investigate the impact of intellectual capital and capital structure on the financial performance by using weighted least square regression.

**Results** – The results showed that intellectual capital has a significant positive effect on firms' financial performances, but the capital structure has a negative effect. The results of this study are beneficial for managers to consider increasing intellectual capital to create a competitive advantage in the midst of fierce competition of the ASEAN Economic Community era. In addition, managers need to consider the optimum capital structure to fulfill funding needs, hence financial distress can be minimized.

**Limitation/suggestion** - This study is a quantitative study limited to the availability of the data. Also, a number of outliers were found in the data and treated prior to the analysis.

**Keywords:** Financial Performance, Intellectual Capital, Capital Structure.

## 1. Introduction

Intellectual capital (IC) is an important intangible asset in the modern business era because it is a driving force for the creation of value-added and corporate wealth (Fier & Mitchell, 2003). The company initially only relied on tangible (structural) assets in managing their business, but increasing fierce competition caused companies to start considering intangible assets (Pucci et al., 2015; Shih et al., 2010). One of the intangible assets is IC that enables the company to create competitive advantages because of its characteristics, rare and hard to imitate (Kamukama et al., 2011; Mavridis, 2004). This is also exposed by the resource-based theory (RBT) which also explains that companies need to explore their intangible assets because its characteristics that are not easily imitated by competitors will create a competitive advantage for the company. In addition, differences in a company's performance are mainly caused by the uniqueness of the resources and capabilities, not because of the structural assets (Sampurno, 2013).

Indonesia needs an IC in the ASEAN Economic Community (AEC) era to create creative and innovative competitive strategies. The higher IC owned by the company, the higher company's ability to create innovation, and hence, the company's sustainability can also be maintained (Subramaniam & Youndt, 2005).

The emphasis on IC in the AEC era will allow Indonesian companies to compete with companies from other countries (Kamukama et al., 2011). This competitive ability will attract a wider market and results in the improvement of financial performance (Allameh, 2018). Therefore, companies need to increase their IC.

Increasing the IC level certainly results in the need for more capital, and the company needs to find sources of funds. Sources of corporate funding can be classified into internal and external sources. Internal funding sources come from retained earnings, while external funding sources come from debt and equity (Sugeng, 2017). According

to the pecking order theory, the company's funding must be fulfilled from internal funding sources (retained earnings) first. However, if these internal funds are inadequate, then the debt is the next alternative (Brealey et al., 2008). Choosing sources of funds from debt will provide benefits such as interest payments that can reduce taxes (Sheikh & Wang, 2013). A company decision to find sources of funds is often referred to as the capital structure decision. This decision is important for every company because it relates to the rate of return and the company's ability to deal with its environment (Abor, 2005).

Previous research shows that IC has a positive effect on a company's financial performance (Alfraih, 2018; Chen et al., 2005; Ginesti et al., 2018; Inkinen, 2016; Ozkan et al., 2017; Pew et al., 2007; Pucci et al., 2015). However, IC can also negatively affect financial performance (Firer & Mitchell, 2003). Contrast to previous studies, research conducted by Chowdhury et al., (2018) finds that IC does not affect financial performance, while the capital structure in previous studies has a positive effect on financial performance (Ahmad et al., 2012; Gill et al., 2011; Kyereboah-Coleman, 2007). The results of other studies indicate that capital structure has a negative effect on financial performance (El-Sayed Ebaid, 2009; Dawar, 2014). These inconsistent results encourage us to test these relationships in a different context. The difference between this study and previous research is the addition of capital structure as an independent variable, whereas in previous studies it only uses one independent variable, IC. The reason for adding capital structure variables is to develop competitive advantage strategies; to increase IC companies need additional funding sources. Hence, our study aims to investigate the impact of IC and capital structure on firms' performance. Different from other studies who mostly used samples from service and financial companies, our used all manufacturing companies listed from 2015.

This paper is structured as follows. After the introduction, literature review including the theoretical framework used in the study and hypothesis development are presented. Next, research method is explained. This is followed by results and discussion session. Finally, conclusion and recommendation are outlined along with the limitations and future research avenues.

## **2. Theoretical Framework and Hypotheses Development**

### *Intellectual Capital (IC)*

IC is an intangible asset including knowledge that makes the company more productive in achieving its goals (Edvinsson & Sullivan, 1996). IC becomes a source for creating wealth and makes a higher value of the company's assets. IC has two major components: human capital and structural capital (Edvinsson & Sullivan, 1996). Human capital includes knowledge, skills, innovation, and other abilities possessed by employees to carry out their tasks (Bontis, 2001). Structural capital is everything in a company that supports employee's productivity such as hardware, software, databases, organizational structures, organizational rules, industrial procedures, strategic plans, patents, and trademarks (Bontis, 2001; Edvinsson & Sullivan, 1996). Structural capital consists of customer capital and organizational capital (Lövingsson et al., 2000). Customer capital is the value obtained by the company due to good relations with customers (Sampurno, 2013). Organizational capital including innovation capital and process capital is the accumulation of knowledge supported by a system to increase innovation and ability of the company (Lövingsson et al., 2000).

IC has been recognized as a driver to create value-added for companies in the midst of fierce competition (Alfraih, 2018; Mavridis, 2004). However, IC cannot create value-added without the existence of capital employed, consisting of physical capital and financial capital (Pulic, 2000). Several studies emphasize the potential of IC in increasing competitive advantage, creating value-added and generating wealth for the company

(Firer & Mitchell, 2003; Kamukama et al., 2011; Ramadan et al., 2017). Companies should increase their investment in IC to improve competence and innovation in the face of an uncertain future (Mavridis, 2004; Wang et al., 2016). IC enables companies to manage their resources effectively and efficiently (Kamukama et al., 2011). Companies can improve financial performance and share prices by relying on IC (Yang, 2018). Several studies find a positive effect of IC on financial performance (Alfraih, 2018; Chen et al., 2005; Ginesti et al., 2018; Inkinen, 2016; Ozkan et al., 2017; Pew et al., 2007; Pucci et al., 2015; Smriti & Das, 2018; Tran & Vo, 2018). However, the results of other studies show that IC has a negative effect on financial performance (Firer & Mitchell, 2003).

Studies that used VAIC™ as an indicator of IC shows that IC has a positive effect on financial performance (Chen et al., 2005; Ginesti et al., 2018; Ozkan et al., 2017; Pew et al., 2007; Smriti & Das, 2018; Tran & Vo, 2018). Contrast to previous studies that used VAIC™ as an indicator of IC, research conducted by Pucci et al., (2015) used a balanced scorecard and found a direct positive relation between IC and performance, also a positive relationship between the combination of marketing assets and IC.

IC not only affect current performance, but also future financial performance (Pew et al., 2007). Research conducted by Chen et al., (2005) found a positive effect of IC on market value and financial performance, then IC also can be an indicator to assess future financial performance. The results of other studies found that IC disclosure has a positive effect on financial performance (Alfraih, 2018).

Firer & Mitchell (2003) claims that IC negatively affect financial performance. This result is different from previous studies because the sample used is more than one type of company and the observation period is just one year. A study conducted in the Bangladesh textile industry shows that IC does not affect financial performance (Chowdhury et al., 2018). The absence of IC's influence on financial performance is due to the characteristics of the textile industry that cannot adopt technology and less skilled human resources. Whereas human resources are an IC component that can create value-added for companies and technology can be a supporter.

### *Capital Structure*

Capital structure is the composition of company funds from debts (short-term and long-term debt) and equity capital (preferred shares and ordinary shares) (Sjahrial, 2014). The capital structure chosen by the company is the capital structure that can maximize the prosperity of the shareholders (Sjahrial, 2014). The company can use a combination of debt and equity as its capital structure. However, the company will choose to increase its capital structure from debt (Al-Najjar & Taylor, 2008). This is due to several advantages held by debt compared to equity, including (1) lower capital costs, (2) tax benefits, (3) positive financial signals to investors, (4) reducing agency problems because creditors are involved in monitoring on management, (5) debt does not reduce shareholder control over the company (Sugeng, 2017). However, using debt also has a weakness that is the occurrence of financial distress that leads to bankruptcy (Brigham & Houston, 2013).

Capital structure can be measured by using capital structure ratio indicator or better known as debt ratio, namely debt to asset ratio (DAR) and debt to equity ratio (DER). DAR describes how much portion of company assets funded from debt sources, while DER describes the ratio of funding fulfilled from debt to equity (Sugeng, 2017). Capital structure is one of the company's strategies to improve profit (Duasa et al., 2014), also can inhibit or encourage managers to work harder for the interests of shareholders (El-Sayed Ebaid, 2009). Several studies have been conducted to examine the impact of capital structure on financial performance, but it still shows different results.

Studies that used the ratio of short-term debt (SDA), long-term debt (LDA) and total debt (DAR) as indicators of the capital structure shows that capital structure has a positive effect on financial performance (Ahmad et al., 2012; Gill et al., 2011; Kyereboah-Coleman, 2007). Contrastly to these results, research conducted by Abor (2005)

and Goyal (2013) shows that only short-term debt has a significant positive effect on financial performance. Dawar (2014) found a negative influence of capital structure on financial performance. This result supported by Sheikh & Wang (2013) which also found that capital structure has a negative effect on financial performance.

#### *Resource-Based Theory (RBT)*

RBT comes from four views: (1) traditional work on distinctive competencies, (2) Ricardian economics, (3) provision of economics (theory of the growth of the firm), (4) the anti-trust implication of economics (Barney & Arian, 2008). RBT is a theory explaining that resources and capabilities are the source of sustainable competitive advantage for companies to achieve better financial performance (Barney, 2012). These resources and capabilities consist of tangible and intangible assets including company management skills, processes, and routines of the company, information, and knowledge that can be used by companies to choose and implement strategies (Barney et al., 2011). Four indicators of potential resources to create competitive advantage are valuable, rare, hard to imitate, and non-substitutable (Barney et al., 2011).

RBT assumption is a unique set of resources and capabilities owned by every company that forms the basis of their strategy and the main source of company return (Sampurno, 2013). Companies need to explore differences compared to other companies, so it will create a competitive advantage that can increase company profitability. According to RBT perspectives, differences in company performance are mainly caused by the uniqueness of the company's resources and capabilities, not because of structural assets (Sampurno, 2013). Companies that use their resources and capabilities to take advantage of opportunities and neutralize threats will increase net income, reduce costs, or both (Barney, 2012).

#### *Pecking Order Theory*

Pecking order theory is a theory developed by Myers (1984) based on the arguments of several previous theories such as agency theory, signaling theory, tax shield argument (Sugeng, 2017). This theory comes through Donaldson's (1961) study on financial practices in large companies which shows that management strongly supports internal funding and overrides external funding (Myers, 1984). Pecking order theory explains the sources of funds sequence favored by companies that begin with internal funding sources and if internal funding sources are inadequate, then preferably funding from external sources is debt (Brealey et al., 2008).

Internal funding sources are prioritized because there are no costs incurred and internal funding does not expose management or become the object of external monitoring. Debt is a preferred source of external funds compared to equity due to several factors including tax savings, a positive signal to investors, and an agent of monitoring management that encourages management performance more efficiently and productive. Equity ranks last because the capital costs are higher than debt and equity issuance will be responded negatively by investors, so it can decrease share prices (Sugeng, 2017).

#### *IC and Firms' Financial Performances*

Financial performance refers to how well a company uses its assets to generate revenue, usually evaluated through financial statement analysis (Wang et al., 2016). Companies will be able to repair and improve their financial performance if they can manage IC properly (Allameh, 2018). This is because IC has unique characteristics and not easily imitated by other companies, so it can create a competitive advantage for companies (Kamukama et al., 2011). According to the RBT, companies have resources and capabilities as a source in creating a competitive advantage in order to achieve better financial performance (Barney, 2012). From the available resources, the company must further explore its intangible resources (Sampurno, 2013). This theory also suggests that dif-

ferences in company performance are caused by unique factors of the company's resources and capabilities, not because of the structural industry (Barney, 2012). The resource-based theory argument is supported by several previous studies which show that IC has a positive effect on financial performance (Alfraih, 2018; Chen et al., 2005; Ginesti et al., 2018; Inkinen, 2016; Ozkan et al., 2017; Pew et al., 2007; Pucci et al., 2015; Smriti & Das, 2018; Tran & Vo, 2018). Based on previous theory and research, the following hypotheses can be formulated:

H1 : IC has a significant positive effect on financial performance.

#### *Capital Structure and Financial Performance*

The capital structure decision is a vital decision for the company because the profitability is directly influenced by this decision. The right selection and use of capital are some of the keys to a company's financial strategy. Therefore, companies need to make consideration carefully to determine capital structure decisions (Velnampy & Niresh, 2012). The company can use a combination of debt and equity as its capital structure. However, companies will choose to increase their capital structure from debt to reduce agency costs and obtain tax savings (Al-Najjar & Taylor, 2008).

According to pecking order theory, if internal funds are inadequate then the company must prioritize external funding through debt because the benefits provided are tax deductions due to interest payments (Brealey et al., 2008; Sudana, 2015). Using debt on the capital structure will encourage managers to work harder so that it can improve the company's financial performance (El-Sayed Ebaid, 2009). Studies conducted at microfinance institutions in Ghana shows that companies with high debt levels have better performance because they can reach more clients (Kyereboah-Coleman, 2007). The results of other studies indicate that capital structure has a positive effect on the company's financial performance (Ahmad et al., 2012; Gill et al., 2011). Based on the theory and research that has been done, the second hypothesis is formulated as follows.

H2 : Capital structure has a significant positive effect on financial performance.

### **3. Research Method**

This study collected data from Indonesia manufacturing companies from 2015 to 2019 through Osiris database. 2015 was chosen because it is the starting year of AEC. This study specifically used manufacturing companies because this industry has the highest contribution to the GDP Central Bureau of Statistics (2017). and is the most affected by the AEC (Ministry of Finance, 2014). However, in 2015, the growth target of this industry was not achieved Supriadi (2016) and was lower than 2014 growth rate Central Bureau of Statistics (2017). Hence, we chose manufacturing companies to as samples of this study. Not all manufacturing companies are involved in this study. There are 190 manufacturing companies listed on the Indonesian Stock Exchange (BEI, 2020), but 140 companies are listed from 2015. Hence, our sample is 140 companies resulted in 700 data.

The dependent variable in this study is financial performance (Y), measured by using profitability ratios, return on assets (ROA) (Berlin et al., 2009; Chen et al., 2005; Elmagrhi et al., 2020; Sheikh & Wang, 2013; Tran & Vo, 2018). Independent variables in this study are IC ( $X_1$ ) and capital structure ( $X_2$ ). Capital structure ( $X_2$ ) was measured by using debt to asset ratio (DAR) (Al-Najjar & Taylor, 2008; Berlin et al., 2009; El-Sayed Ebaid, 2009; Gill et al., 2011). IC was measured by using VAIC<sup>TM</sup> formula developed by Pulic (2000) and consists of three components including Capital Employed Efficiency (CEE), Human Employee Efficiency (HEE), Structural Capital Efficiency (SEE) (Chen et al., 2005; Firer & Mitchell, 2003; Ginesti et al., 2018; Mavridis, 2004; Ozkan et al., 2017; Pew et al., 2007; Pucci et al., 2015; Smriti & Das, 2018; Tran & Vo, 2018; Wang et al., 2016). These three components form the VAIC<sup>TM</sup> equation as follows.

$$VAIC^{TM} = CEE + HCE + SCE$$

Note:

VAIC <sup>TM</sup>	= Value added coefficient of IC
CEE	= VA/CE; capital employed coefficient
HCE	= VA/HC; human capital coefficient
SCE	= SC/VA; structural capital coefficient
CE	= book value of net assets
HC	= wages and salaries expense
SC	= VA – HC
VA	= output-input whereas: output is all revenue received by companies, however, the input is all-expense paid by companies except employee expense.

In testing hypotheses, this study considers control variables commonly used in previous studies to test IC and capital structure such as company size, sales growth, company age and type of industry (Al-Najjar & Taylor, 2008; Chen et al., 2005; Dawar, 2014; Firer & Mitchell, 2003; Gill et al., 2011; Ginesti et al., 2018; Sheikh & Wang, 2013; Smriti & Das, 2018; Tran & Vo, 2018; Wang et al., 2016). Company size ( $Z_1$ ) was measured by using this formula.

$$\text{Size} = \text{Ln} (\text{Total assets})$$

- 1) Sales growth ( $Z_2$ ) was measured by using this formula.

$$\text{Sales Growth} = \frac{\text{sales}_t - \text{sales}_{t-1}}{\text{sales}_{t-1}}$$

- 2) The age of the company ( $Z_3$ ) is calculated from the listed year of the company until the period of this research.
- 3) Type of industry ( $Z_4$ ) was measured by using a dummy variable, which is giving a score of 1 to companies that have high IC value and score of 0 for low IC companies. The classification of companies according to the IC level showed in table 1.

Prior testing the hypotheses, we conducted data screening, found some outliers, and winsorized them using 5<sup>th</sup> and 95<sup>th</sup> percentile. Winsorizing is the best method to treat outliers and ensure the robust classical statistics (Kennedy et al., 1992). We then carried out multiple linear regression analyses with the following equation.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon \quad (1)$$

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 Z_1 + \beta_4 Z_2 + \beta_5 Z_3 + \beta_6 Z_4 + \varepsilon \quad (2)$$

The results show that the data were heteroskedastic<sup>1</sup>. For this reason, we conducted weighted least square (WLS) regression to overcome heteroscedasticity. The next section reports the results based on WLS regression.

**Table 1.** Industry Classification

High-IC Intensive Industries	Low-IC Intensive Industries
Automobile and Components	Commercial Services and Supplies
Banks	Consumer Durables and Apparels
Capital Goods	Consumer Services
Commercial Services and Supplies	Energy
Consumer Services	Food, Beverage, and Tobacco
Diversified Financials	Food Staples and Retailing
Health Care Equipment and Services	Materials
Insurance	Retail
Media	Transportation
Pharmaceuticals, Biotechnology, and Life Science	Utilities

<sup>1</sup> This is the only classical assumption violated in the regression. There is no multicollinearity and autocorrelation as all VIFs are less than 3 and Durbin Watson is 1.817.

Real Estate  
Semi-Conductors and Semi Conductors  
Equipment  
Software and Services  
Technology, Hardware, and Equipment  
Telecommunication Services

Source: Woodcock & Whiting (2009)

Intellectual  
Capital,  
Capital  
Structure  
Effect,  
Financial  
Performances

**4. Results and Discussion**

*Descriptive Statistics*

Table 2 shows the descriptive statistics of the dependent, independent, and control variables of this study. The mean value of financial performance shows that the average financial performance of manufacturing companies in Indonesia in 2015-2019 is low at 3.78%. This may be caused by the implementation of AEC which results in tougher competition. Companies that are able to compete will be able to improve their financial performance, which in this case is shown by a maximum value of 92.1%.

The mean and standard deviation value of IC shows that the average of manufacturing companies has a low IC value. This value indicates that companies still rely a lot on their tangible assets, although some companies have begun to consider intangible assets such as IC. However, the standard deviation value of 668.2 indicates that there is a significant difference the level of intellectual capital between companies. This value indicates that companies still rely a lot on their tangible assets, although some companies have begun to consider intangible assets such as IC.

Capital structure has a mean value of 56% shows that the average of manufacturing companies in Indonesia still relies on debt as their capital structure. The unfavorable market conditions and also a large number of imported goods caused several companies are a loss. Therefore, companies require greater capital. This is evidenced by the maximum value of the capital structure which reaches 507%.

	Variables	Minimum	Maximum	Mean	Std. Deviation
Y	Finc Perfm	-38.590	92.100	3.783	10.011
X <sub>1</sub>	IC	-2514.720	17487.710	27.625	668.208
X <sub>2</sub>	Cap struct	0.040	5.070	0.560	0.539
Z <sub>1</sub>	Size	10.370	26.590	19.672	3.837
Z <sub>2</sub>	Sales growth	-0.990	24.190	0.095	1.005
Z <sub>3</sub>	Age	0.000	42.000	20.321	9.182
Z <sub>4</sub>	Type of ind	0.000	1.000	0.250	0.433

Note: this table is based on the raw data, not the winsorized data.

**Table 2.** Descriptive Statistics

The results of the Pearson correlation in Table 3 show that IC has a positive correlation with financial performance, while the capital structure has a significant negative correlation. Control variables also correlate with the dependent variables. Interestingly, high IC companies are negatively correlated with the IC.

Variables	1	2	3	4	5	6	7
1 Y Finc Perfm	1						
2 X <sub>1</sub> IC	.120**	1					
3 X <sub>2</sub> Cap struct	-.426***	-.280***	1				
4 Z <sub>1</sub> Size	.269***	-0.074	-.155***	1			
5 Z <sub>2</sub> Sales growth	.245***	-0.018	-0.06	.088*	1		
6 Z <sub>3</sub> Age	.130**	-0.002	0.028	-0.000	-0.053	1	
7 Z <sub>4</sub> Type of ind	.205***	-.163***	-.132***	.122**	0.025	0.061	1

Note: this table is based on the winsorized data. Correlation is \*\*\* significant at the 0.001 level, \*\* at p < 0.01 and \* at p < 0.05.

*Regression Results*

The results of WLS regression can be seen in table 4. The statistical F in both model shows p-value of less than 0.05 which means that IC and capital structure (and all control variables) altogether have a significant effect on financial performance. R-squared value in model 1 is 0.245 meaning that IC and capital structure can explain 24.5% variation of firms' financial performances. From the table, it can be interpreted that if  $X_1$  (IC) and  $X_2$  (capital structure) are respectively has a value of 0, then the financial performance of 6.92%. If IC value increases by 1%, then financial performance will increase by 25.1% assuming other independent variables value of 0. However, if the value that increases by 1% is capital structure, then financial performance will decrease by 11.19%. Model 2 shows a higher  $R^2$  and all variables included in the model are significantly affect firm performance with the signs for  $X_1$  and  $X_2$  are consistent with model 1.

Variables	Model 1	Model 2
Constant	6.924***	5.518
$X_1$ IC	0.251***	0.246***
$X_2$ Cap struct	-11.194***	-9.989***
$Z_1$ Size		0.185***
$Z_2$ Sales growth		8.992***
$Z_3$ Age		0.089***
$Z_4$ Type of ind		2.096***
$R^2$	.245	0.343
F test p-value	0.000	0.000

Note: Coefficients are \*\*\* significant at the 0.001 level, \*\*at  $p < 0.01$ , \*at  $p < 0.05$

*Discussion*

This study found a positive significant effect of IC on the financial performance, and the impact is quite big at 25%. It can be said that the higher the IC level of a company, the higher the financial performance. The results of this study support previous research conducted by (Alfraih, 2018; Chen et al., 2005; Ginesti et al., 2018; Inkinen, 2016; Ozkan et al., 2017; Pew et al., 2007; Pucci et al., 2015; Smriti & Das, 2018; Tran & Vo, 2018). However, it does not support research conducted by Firer & Mitchell (2003) and Chowdhury et al., (2018). The results of this study indicate that manufacturing companies in Indonesia are starting to consider IC in the AEC era to increase their competitive advantage so that the financial performance will improve.

IC is important in every company regardless of the type of industry because there is human capital that is able to carry out big changes for the company (Bontis, 2001). IC allows companies to create competencies to deal with uncertainty in the future (Wang et al., 2016). In addition, IC can improve a company's ability to create innovation, so that the company's sustainability will be maintained (Subramaniam & Youndt, 2005).

The results of this study are in line with RBT which explains that companies have resources (tangible and intangible) as a source of competitive advantage to achieve better financial performance (Barney, 2012; Barney et al., 2011). However, companies have to explore more of their intangible assets because their rare and non-replicable characteristics will create a competitive advantage (Kamukama et al., 2011; Mavridis, 2004; Sampurno, 2013). The main factor causing differences in company performance is the uniqueness of company resources and capabilities, not the structural industry or tangible assets (Barney, 2012). In line with this, Mavridis (2004) found that the companies with the best performance are the company that uses their intellectual capital well compared to their physical capital.

This study also found that capital structure has a significant negative effect on financial performance which means that the higher level capital structure, the lower financial performance. The results of this study support previous research conducted by

(Dawar, 2014; Sheikh & Wang, 2013). However, the results of this study do not support research conducted by (Ahmad et al., 2012; Gill et al., 2011; Kyereboah-Coleman, 2007).

Debt can negatively affect financial performance because the high debt will cause tight agreements or increasing the lenders' influence which can limit the manager's ability to manage the operation effectively (Sheikh & Wang, 2013). In addition, high levels of debt will cause companies to experience financial distress which can lead to bankruptcy. Therefore, companies need to consider the optimum capital structure to determine the maximum level of debt that can provide benefits for the company. If the debt level is maximum, then the company should use funding sources from the issuance of equity (Sudana, 2015; Sugeng, 2017).

The results of this study are not following pecking order theory which states that if an internal funding source is insufficient to fulfill funding needs, then the preferred external funding sources are debt. This is because debt can provide benefits such as tax savings and can be a monitoring agent that encourages management performance more efficient and productive, so it can improve financial performance (Barney & Arikan, 2008; Sugeng, 2017).

The negative effect of debt on financial performance can also be caused by economic conditions in Indonesia. In 2015, the average loan interest rate in Indonesia was 13.64% that increase compared to three previous years. In 2016 and 2017 the average loan interest rates were 12.87% and 12.86%. Although it did not increase, the average interest rate was still in double digits even though the Central Bank of Indonesia had implemented a policy of lowering the BI 7-day repo rate (VOA, 2017). The high-interest rate on loans causes the interest expense to be paid by the company is higher, so the risk of financial distress will also increase.

## 5. Conclusion, Recommendation, and Limitation

This study focuses on the influence of IC and capital structure on financial performance in manufacturing companies in Indonesia from 2015 to 2019. Based on the hypothesis testing, there are two conclusions. First, IC has a significant positive effect on financial performance. These results are consistent with previous research which found a positive influence of IC on financial performance (Alfraih, 2018; Chen et al., 2005; Ginesti et al., 2018; Inkinen, 2016; Ozkan et al., 2017; Pew et al., 2007; Pucci et al., 2015; Smriti & Das, 2018; Tran & Vo, 2018). In addition, this finding is also in accordance with the RBT assumption that companies will get better financial performance if they prioritize to use their intangible assets (intellectual capital) compared to their tangible assets (physical capital).

Second, capital structure has a negative effect on financial performance. These results are consistent with previous research conducted by (Dawar, 2014; Sheikh & Wang, 2013). Theoretically, this finding does not support the assumption of pecking order theory which states that companies that use debt will get the benefit of tax savings that can improve financial performance. Debt has a negative effect on financial performance caused by three factors including (1) high debt causes tight agreements or high lender influence that limits managers to manage operation effectively, (2) debt causes financial distress, (3) the high-interest rates on loans in the study period caused the interest expense to be paid by the company is higher.

The results of this study can be a consideration in decision making by several parties. For companies, managers can consider improving and management IC effectively. Regarding the source of funds, companies need to consider the optimum capital structure in fulfilling funding needs. For investors, the IC level can be one of the judgments in making investment decisions. For creditors, the level of capital structure can be a consideration to assess the risk level of the company in making lending decisions.

This study uses VAIC<sup>TM</sup> as an indicator of IC measurement, but many measurements can be used to measure IC, especially to measure customer capital. Future research can use mixed methods to add a qualitative point of view to measure customer

capital and quantitative to measure other IC components. Also, the data consists some outliers and winsorizing is chosen as the treatments method. Future research may winsorize and trim the outliers and compare the results to investigate better method in dealing with outliers.

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