

# **The Influence of Intellectual Capital on Company Performance Moderated by Knowledge Assets (Empirical Study on 2014-2018 LQ45 Index)**

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## **Abstract**

This study aims to examine the effect of intellectual capital on company performance moderated by knowledge assets. The population in this study are companies that are members of the Indonesia Stock Exchange LQ45 index for the 2014-2018 period. The sampling method used was purposive sampling method and obtained 40 research samples. Data analysis in this study with Partial Least Square using SmartPLS version 3.0. Based on the research results, it was found that intellectual capital had a positive effect on company performance, knowledge assets had a negative effect on company performance and knowledge assets strengthened the effect of intellectual capital on company performance.

**Keywords:** Intellectual Capital; Knowledge Assets; Company Performance

## **1. INTRODUCTION**

Emulation of business push company to exploit resources had precisely utilize. Company alter the way of approach to business, previously base on labour becoming to base on knowledge, so that can continue to survive (Wijayani, 2017). Change of way of this approach cause business perpetrator realize that to be able to survive in emulation of business not merely laying in extant asset which owned, but also at innovation, information system, organizational management and organization resource had (Sabrina, 2014).

Phenomenon Intellectual Capital in Indonesia emerged after the existence of PSAK No.19 (revised 2015) on intangible assets. Based on PSAK No. 19, an intangible asset is an asset non-monetary that is identified and has no physical form and is owned for use in producing or delivering goods or services, leased to other parties or for administrative purposes (IAI, 2015).

Intellectual capital is considered an essential company asset because it can affect the strategic performance of the business. The company's ability to create value for itself depends on the company's ability to manage its intellectual capital properly and efficiently. And the impact of using intellectual capital efficiently has a different impact on each sector (Amin et al., 2018).

Talking about intellectual capital, of course, cannot be separated from intellectual assets, because intellectual capital is a collection of intellectual assets. Intellectual assets can be codified such as investments in research and development (R&D), patents, copyrights, customer lists, software, licenses, product development and business combinations which are all reported in the company's annual report and considered as keys driving strategic growth and profitability for the company (Amin *et al.*, 2018).

Knowledge Assets (KA) is the source specific power company which plays an important role in value creation process for the company. Knowledge Assets are considered as input, output, and moderator in creating value for companies (Amin et al., 2018). Knowledge Assets arise from the company's activities to manage the knowledge they have or what is better known as Knowledge Management (KM). Managing the knowledge that is owned as an asset, so that the company is able to respond to market changes proactively and is able to become the company's advantage (Lusa, 2012).

The application of knowledge management within the company to manage the knowledge that is owned into an asset (knowledge assets) which has its own uniqueness so as to improve company performance and the company's ability to create value. The efficient use of knowledge assets by a company will be able to strengthen the effect of the use of its intellectual capital so that the company's performance will be better with the use of these two resources.

This study aims to examine the effect of intellectual capital (IC) on company performance moderated by knowledge assets (KA). This study replicates the research of Amin et al., (2018) which examines the relationship between intellectual capital and financial performance: the moderating role of knowledge assets in companies listed on the Australian Stock Exchange (ASX). The thing that distinguishes it from previous research is the object of research used and the period of observation. The research objects that will be used in this research are all companies that are included in the LQ45 index listed on the Indonesia Stock Exchange and the observation period is five years from 2014 to 2018.

Intellectual capital (IC) is an invisible asset and is a combination of human, process and customer factors that give a company a competitive advantage (Wijayani, 2017). In general, intellectual capital can be identified as consisting of three main elements (Bontis et al., 2000 in Ulum, 2009), namely:

- a) Human Capital (HC)
- b) Structural Capital (SC)
- c) Customer Capital (CC)

Knowledge Assets (KA) is part of the company's intangible assets related to knowledge, expertise, information, ideas, best practices, intellectual property and other capabilities (Kamusbisnis.com). Knowledge Assets are specific resources owned by a company and are widely recognized as resources that play an important role in the value creation process in the company (Amin et al., 2018).

Financial performance is an indicator that is often used to measure the performance of a company. Financial performance is a description of the company's financial condition within a certain time and is measured using financial ratios, so that it reflects the good and bad performance of the company (Fahmi, 2012). To be able to describe the company's performance in a period, it is necessary to analyze the company's financial statements. In this study, financial performance is measured by ROA, ROE, EPS and SALEGR.

## **2. RESEARCH METHODOLOGY**

This study uses a quantitative method because it is presented in the form of data. This is in accordance with the opinion of Bryman (2017) which states that the quantitative research process starts from theory, hypothesis, research design, selecting subjects, collecting data, processing data, analyzing data, and writing conclusions.

Data used in this research was from a secondary data sources such as from the Indonesian Stock Exchange official website and also from each of companies official website that used as an object of this research. According to Darmawan (2013:13), a secondary data source is data derived from documents, publications, or research reports from relevant agencies, or from other sources that can support the research.

Variable independent in this research is Intellectual Capital (IC). Intellectual Capital (IC) is an intangible asset that has a role important in increasing the competitive level of the company as well as in terms of increasing company profits (Wijayani, 2017). Measurement IC in this study will be measured using the pulic model (*Value Added Intellectual Coefficient* atau VAIC<sup>TM</sup>). VAIC<sup>TM</sup> is a suitable method for measuring IC because all data used are based on accounting data and can be verified (Maryantini dan Putri, 2018). The VAIC<sup>TM</sup> method has 3 (three) components, namely VACA (Value Added Capital Employed), VAHU (Value Added Human Capital), and STVA (Structural Capital Value Added). The dependent variable in this study is the company's financial performance. Financial performance is a description of the company's financial condition within a certain period of time and is measured using financial ratios, so as to reflect the good and bad performance of the company (Fahmi, 2012). Measurement of financial performance in this study uses 4 (four) indicators, namely, ROA (Return On Asset), ROE (Return On Equity), EPS (Earning Per Share) and SG (Sales Growth) referring to research Amin et al., (2018 ). The moderating variable used in this study is Knowledge Asset (KA). Knowledge Asset (KA) is a company-owned strategic and specific resource capable of providing long-term competitive advantage for the company (Amin et al., 2018). Measurement of Knowledge Assets (KA) in this study is measured using Research & Development Intensity (RDI).

The population to be studied in this study are companies that are members of the LQ45 Index (2014-2018). The method that will be used in sampling is purposive sampling. The sample selection process resulted in 8 sample firms. The research period is three years from 2014 to 2018, resulting in 40 firm-year observations. In this study, hypothesis testing used PLS (Partial Least Square) analysis. The PLS (Partial Least Square) analysis stages include assessing the measurement model (Outer Model) and structural models (Inner Model).

### **2.1 The Influence of Intellectual Capital on Company Performance**

Intellectual Capital is a crucial company resource for the company. With the existence of Intellectual Capital, the company will be able to produce a competitive advantage and good performance (Devi et al., 2017). Based on Resource Based Theory, the company will have advantages and good performance if it is able to manage and utilize strategic resources (tangible and intangible assets) that are owned properly and correctly (Wijayani, 2017). In other words, the company will be able to compete and have a strategic competitive advantage if the company is able to properly manage its Intellectual Capital so that the company's performance will be better. Based on the description above, the hypothesis regarding the effect of intellectual capital on company performance is formulated as follows:

H1: Intellectual capital has a positive effect on company performance

### **2.2 The Influence of Knowledge Assets on Company Performance**

According to Knowledge Based Theory, the company will be able to survive, sustain and even grow if the company able creating, using and transferring owned knowledge. Good management of Knowledge Asset is a key company in gaining a competitive advantage against its competitors, because Knowledge Asset is a strategic asset that can help companies gain a competitive advantage because of its scarcity, the more companies are able to manage Knowledge Asset well.

Then the company's performance will be even more increased. Based on the description above, the hypothesis related to knowledge assets on company performance is as follows:

H2: Knowledge assets have a positive effect on company performance

### 2.3 The Influence of Knowledge Asset Moderates the Relationship between Intellectual Capital and Company Performance

Intellectual Capital is not able to create value by itself but through the influence of knowledge assets. According to Knowledge-Based Theory, the company will be able to have long-term competitive advantages if the company is able to integrate its knowledge so that it is not easy for competitors to imitate. So, the higher the efficiency level of the company's knowledge assets and intellectual capital, it will lead to better business performance and make the business competitive (Amin et al., 2018). Based on the description above, the related hypothesis is as follows:

H3: Knowledge assets strengthen the influence of intellectual capital on company performance

## 3. RESULTS AND DISCUSSION

The first step used by the researcher to analyze the data used in this research is by using the statistic descriptive testing. The result of statistic descriptive testing used in this research showed in Table 1.

The following were the results of descriptive statistics in this study (Table 1).

**Table 1.** Descriptive Statistic

	N	Min	Max	Mean	Std. Dev
VAIC™	40	2,567	8,618	5,024	1,541
RDI	40	0,005	8,475	1,058	2,358
ROA	40	0,018	0,467	0,109	0,123
ROE	40	0,049	1,358	0,297	0,377
EPS	40	44	1433	608,3	390,5

Based on the results of descriptive statistics, it can be seen that the minimum, maximum, mean and standard deviation of the processed data and it can be seen that the research data has good quality.

**Table 2.** Outer Loadings and Convergent Validity

	IC	KA*IC	KA	KP
IC*KA		1,00		
Performance				1,00
RDI			1,00	
VAIC	1,00			

Based on the results above, it can be seen that the loading factor value of all indicators has a value of 1,00. The loading factor value provides an idea of how much the indicators are related to their respective constructs. It can be concluded that the construct has a good convergent validity value because the loading factor value has met the criteria, namely the value of the construct loading factor > 0,70.

**Table 3.** Assessing Reliability

	CA	CR	AVE	DV
IC	1,000	1,000	1,000	1,000
KA*IC	1,000	1,000	1,000	1,000
KA	1,000	1,000	1,000	1,000
KP	1,000	1,000	1,000	1,000

The construct is said to have good reliability if the composite reliability value, Cronbach's alpha is above 0.80 and the AVE value is above 0.50. Based on the output results above, it can be seen if the construct has good reliability because the values of composite reliability, Cronbach's alpha and AVE are above the recommended criteria. The root value of Average Variance Extracted (AVE) also turned out to be higher than the correlation value between other constructs, this means that the construct had high discriminant validity.

Based on the results of the R Square output, in this study the independent variable is able to explain the dependent variable by 29.9% while 70.1% is explained by other variables.

**Table 4.** F Square

	IC	KA*IC	KA	KP
IC				0.211
KA*IC				0.247
KA				0.250
KP				

The value of F Square is used to see the effect size of the research model. Based on the output results above, it can be seen that the effect size of intellectual capital, knowledge assets and the interaction of knowledge assets and intellectual capital on company performance is 0.211, 0.247 and 0.250, respectively, which means they have a medium effect size value.

**Table 5.** Path Coefficient

	Original Sample	T-Statistics	P-Value
IC -> KP	0,529	1,706	0,044
KA*IC->KP	0,984	2,337	0,010
KA -> KP	-1,765	4,363	0,000

Based on the results of the Path Coefficient output, the following information can be obtained:

1. The first hypothesis which states that intellectual capital has a positive effect on company performance is accepted. There is a positive relationship between intellectual capital on the company's performance, this can be seen from the coefficient value amounting to 0.529. The p-values of your intellectual capital are valuable 0.044 which is smaller than 0.05.
2. The second hypothesis which states that Knowledge Asset has a positive effect on Company Performance is rejected. Knowledge Asset has a negative interaction with performance Company, this can be seen from the coefficient value of -1.765 and also knowledge assets, it can be seen that knowledge assets has a negative effect on company performance in terms of value p-values  $0.00 < 0.05$
3. The third hypothesis which states that Knowledge Asset strengthens the influence of Intellectual Capital on Company Performance is accepted. The moderation construct has a positive interaction on performance company, this can be seen from the coefficient value of 0.984. The p-values show that knowledge assets strengthen the relationship of intellectual capital to company performance because p-values  $0.010 < 0.05$

#### **The influence of intellectual capital on company performance**

Based on the results of the analysis using Smart PLS, it can be concluded that intellectual capital has a positive effect on company performance. Intellectual capital is an intangible asset that can provide a company with a competitive advantage. The better the intellectual capital management in the company, the better the competitive advantage the company will get. Good management of intellectual capital relies on the capabilities of human resources, the better the competence of human resources, the more efficient the management of intellectual capital owned and will provide a sustainable competitive advantage for the company. When the company has a sustainable competitive edge due to the efficient utilization of intellectual capital, the company will be able to survive in business competition with its competitors and can even win the competition, if companies are able to maintain a competitive advantage sustainable they have. Resource-Based Theory is considered relevant in this context increase in company performance. When the company owns the source valuable, rare, inimitable and irreplaceable power it will produce a competitive advantage for that company culminating in increased company performance. This theory agrees with the results of the analysis that has been carried out on intellectual capital, where intellectual capital is a capable resource provide a competitive advantage for the company because of its uniqueness and the rarity

#### **The influence of knowledge assets on company performance**

Based on the results of the analysis using Smart PLS, it can be concluded that knowledge assets have a negative effect on company performance. Knowledge Asset is part of intangible assets related to knowledge, expertise, information, ideas, intellectual property and other abilities. Knowledge Asset is widely recognized as a resource that has an important role in value creation in a company. Management of knowledge assets to be able to provide a competitive advantage for companies requires a large cost and a long time. The sacrifices made by this company are not in line with the results provided by the management. Stakeholder theory is in accordance with the results of the analysis carried out where the company will prioritize a harmonious relationship with its stakeholders, where the company will do various a way that is able to increase the value of the company in the eyes stakeholder. If the management is carried out on existing assets if

you have given the desired result, the company will avoid managing other assets that have a negative impact or provide a less real impact on company performance

#### **The influence of knowledge assets moderates the relationship of intellectual capital to company performance**

Based on the results of analysis using SmartPLS, it can be concluded that knowledge assets moderate the relationship of intellectual capital to company performance. Knowledge Asset is a strategic resource that can provide a competitive advantage for companies. Efficient use of knowledge assets will be able to strengthen the impact of intellectual capital so that company performance will increase by utilizing these two intangible assets. The efficient use of these two assets can improve the competence of the company's human resources so that it is hoped that this competency improvement will improve the company's operational performance. Resource-Based and Knowledge-Based theories are considered capable to explain the relationship between knowledge assets that arise from the process internal research and development companies will add the impact that intellectual capital has on the company so that the company will be more competitive and its performance will increase. Good use of knowledge company-owned assets will amplify the impact given from intellectual capital management that has been done by the company. This increase will give that company competitive ability getting better than its competitors. This has an impact on increase in company performance which will continue to increase in line by managing the two intangible assets efficiently.

## **4. CONCLUSION**

This study examines the effect of intellectual capital on company performance moderated by knowledge assets in companies incorporated in the Indonesia Stock Exchange LQ45 index for the period 2014-2018. Intellectual Capital is measured using the VAICTM (Value Added Intellectual Coefficient), Knowledge Asset is measured using RDI (Research and Development Intensity), while Company Performance is measured using four measuring tools, namely: ROA (Return On Asset), ROE (Return On Equity), EPS (Earning Per Share) and SALESGR (Sales Growth). Based on the results of research involving 40 sample companies, the following conclusions were obtained that Intellectual Capital has a positive effect on company performance. Efficient utilization of intellectual capital will provide sustainable competitive advantage for the company due to uniqueness and its rarity. Knowledge Asset has a negative effect on company performance. This is because the management of knowledge assets rests on ability individual human resources company in translating existing knowledge becomes a competitive advantage, a sacrifice undertaken by the company to obtain these assets is not running in line with the results contributed to operational performance company. Knowledge Asset (KA) moderates the influence of Intellectual Capital (IC) on Company Performance. Utilization of knowledge assets owned will increase the existing intellectual capital and that will result on increasing the competence of the company's human resources. Increased competence means more efficient management of physical assets and intangible assets that exist so that performance the company will be more optimal. Based on the results of the research that had been done, the suggestions that could be given were future research is expected to be able to add other independent variables in order to get better research results. For example, by adding a variable Good Corporate Governance (GCG) (Maryantini and Putri, 2018) or Corporate Social Responsibility (CSR) (Ratnasari et al, 2015) which has an influence on company performance. Increase the population by expanding the observation sector so that the sample obtained is wider and the research results are better. For example the banking sector, the manufacturing sector, the food and beverage sector, the pharmaceutical sector. Increase the research period in order to be able to see the impact of longer intangible assets so that the research results obtained are better. Add other moderating variables in order to get better research results. For example, by adding a variable type of industry or leverage (Soewarno, 2011). The reason for adding a variable type of industry or leverage is because these two things will provide a clearer picture for researchers in which industry is a company that has good company performance and conditions that will put pressure on the company so that the company will try its best to improve its performance. This research, measuring knowledge assets can only use RDI, due to the limited research data available on the company's annual financial report. The next researcher can add the RYLI (Royalty Intensity) indicator by comparing royalty income compared to the company's total revenue, so that the research results obtained are better. Future research is expected to change the data analysis method to the MRA analysis method using the SPSS statistical test tool (Soewarno, 2011).

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