Intellectual Capital and Financial Performance (Empirical Study on The Automotive Industry And Components Listed On The Indonesia Stock Exchange For The 2016-2019)

Yati Mulyati[1]
Faculty of Business and Economics, Widyatama University, Bandung, Indonesia
Yati.mulyati@widyatama.ac.id

Muhammad Akbar Tri Hendriawan[2]
Faculty of Business and Economics, Widyatama University, Bandung, Indonesia
tri.hendriawan@widyatama.ac.id

Muhammad Fajar[3]
Faculty of Business and Economics, Widyatama University, Bandung, Indonesia
fajar.2327@widyatama.ac.id

Rafi Ramdhani[4]
Faculty of Business and Economics, Widyatama University, Bandung, Indonesia
rafi.ramdhani@widyatama.ac.id

Arini Putri Athifadiya[5]
Faculty of Business and Economics, Widyatama University, Bandung, Indonesia
arini.athifadiya@widyatama.ac.id

Achya Aisya Suhendar[6]
Faculty of Business and Economics, Widyatama University, Bandung, Indonesia
achya.aisya@widyatama.ac.id

Mohd Haizam Saudi[7]
Faculty of Business and Economics, Widyatama University, Bandung, Indonesia

Abstract

Intellectual capital research is still an interesting topic to study. Therefore, this study aims to determine the effect of intellectual capital and company size on the company's financial performance empirical studies in the automotive industry and components registered with the Indonesian Stock Exchange for the 2016-2019 period. The dependent variable in this study is the company's financial performance, while the independent variables are intellectual capital and company size. This research is descriptive, verification and data analysis used is panel data regression. The data used are secondary data sourced from published financial reports. Determination of sampling using purposive sampling method, so that the sample collected as many as 41 samples. The results of the study prove that intellectual capital has an influence on the company's financial performance, while the size of the company has no effect on the company's financial performance.

Introduction

The era of globalization demands that the industry can show the company's performance to be continuously better. The existence of globalization allows free markets to occur, automotive products freely enter the country, on the other hand Indonesian products must be able to participate in the international arena. The competitiveness of automotive products is getting stronger, competing with domestic and foreign competitors. It is time for the industry in Indonesia to be more prepared and able to compete against current conditions. Competitive products are not something companies should do as a form of company performance. The company's performance must be supported by the company's ability to generate profitability for stakeholders. The company's financial performance is the determination of certain measures that can measure the success of a company in generating profits (Rahayu & Azzahra, 2021). One of the ratios to measure the company's performance is the profitability ratio by using ROA (Return On Assets) to reflect business profits and company efficiency in the utilization of total assets (Hermawan, Rahayu, Jamaludin, Rahayu, & Biduri, 2021). In addition to profitability, the company's liquidity and solvency must also be maintained. So that high profitability indicates the company's growth and is able to survive in the future. To support the high performance of the company, the company must be supported by large assets. Supported by tangible assets in the form of land, buildings, equipment, this is not enough, but companies need to be supported by intangible assets in the form of innovation, information systems, organizational management and knowledge of the resources owned by the company. competition so that the company's performance is maintained. Innovation, information systems and knowledge resources as a form of intangible assets owned by the company. Intellectual capital is an intangible asset with the ability to provide value to the company (Ionita & Dinu, 2021; Xu & Liu, 2021) .Intellectual Capital can be measured by Value Added Intellectual Capital (VAIC) (Pulic, 1998), with VAIC can provide information about the efficiency of value creation (value creation) of tangible assets and intangible assets owned by the company. Efficient use of a combination of tangible assets and intangible assets is expected to improve the company's financial performance. The size of the company determines the size of the company, whether it is classified as a small, medium or large company. The size of the company can be determined from the total assets owned. The greater the total assets owned by the company, the bigger the company. A large company size is certainly expected to be able to produce high company profitability so that financial performance will be good. Therefore, this research aims to determine the influence of intellectual capital on financial performance and the effect of company size on financial performance in the automotive and component sector industries for the 2016-2019 period.

Literature Review

Stakeholder theory is the theory that underlies this research. Stakeholder theory describes that stakeholder are considered to have power. Stakeholders here include shareholders, customer employees, suppliers, creditors and also the government. This group more or less has a role in disclosing information in financial statements (Riahi-Belkaoui, 2003). This theory also reveals that accounting profit is a return for shareholders, while value added is a more accurate measure created by management and then distributed to stakeholders. Value added which is considered to have higher accuracy is associated with return which is considered as a measure for shareholders. Thus, both (value added and return) can explain the strength of stakeholder theory in relation to measuring organizational performanceThe company's financial performance is very essential for management because it can assess the outcomes of business units that have been achieved either by individuals or groups within an organization. Financial performance can be assessed from the profitability of a company which is reflected in the Return on Assets (ROA). According to Chen, Cheng, and Hwang (2005), ROA is an indicator of company efficiency in utilizing existing assets and controlling firms' financing policy. Furthermore, return on Equity is an indicator of the company's rate of return on shares owned by shareholders. Financial performance measurement has several purposes (Benrqya & Jabbouri, 2021). The first objective is to determine the level of liquidity, namely the company's ability to meet financial obligations when billed. The second objective is to determine the level of solvency, which is to show the company's ability to

meet its financial obligations if the company is liquidated, which includes both short-term and long-term liabilities. The third objective is to determine the level of profitability, which shows the company's ability to earn profits during a certain period. The fourth objective is to determine stability, namely the company's ability to conduct its business in a stable manner, which is measured by considering the company's ability to pay installments regularly to shareholders without experiencing obstacles.

With this aim, financial performance appraisal has several roles for the company. Financial performance appraisal can measure the level of costs of various activities that have been carried out by the company, to determine or measure the efficiency of each part, process or production as well as to determine the degree of profit that can be achieved by the company concerned, to assess and measure the work results of each the part of the individual who has been given authority and responsibility, and to determine whether or not new policies or procedures need to be used to achieve better results (Benrqya & Jabbouri, 2021; Hutchings, 2021)

Intellectual Capital

In a company, assets are not only tangible but can be in the form of intangibles, such as goodwill, patents, brands and so on. Intellectual Capital (IC) as an intangible asset is very important in a company. Intellectual capital is knowledge, intellectual property, or experience that can create and increase company wealth (García-Meca, Parra, Larrán, & Martínez, 2005).*Intellectual capital* is an intangible asset with the ability to provide value to companies and society including patents, intellectual property rights, copyrights, and franchises. (Ionita & Dinu, 2021); Pulic (1998); (Xu & Liu, 2021) developed an indirect measurement tool for intangible assets in the form of intellectual capital using the Value-Added Intellectual Capital (VAIC™) method. This method is designed to provide information about the efficiency of value creation from tangible assets and intangible assets owned by the company. Efficient use of a combination of tangible assets and intangible assets is expected to improve the company's financial performance. According to (Sudibyo & Basuki, 2017) Intellectual capital is divided into different components, namely human capital, relational capital, and structural capital. HC includes the knowledge, skills, and experience of the company's employees, RC is a good relationship or network of associations owned by the company to stakeholders, examples of this relationship include supplier relationships, customer loyalty, goodwill, and relations with the government and society in general. SC refers to the knowledge inherent in organizational structure processes, including corporate culture, knowledge, technology, and the availability of information systems. The calculation starts with the company's ability to create Value Added (VA). VA is obtained from the difference between the output and input. Output value (OUT) is total revenue and includes all products and services produced by the company for sale, while input (IN) includes all expenses used by the company to produce goods or services.

Pulic (1998) states that the components of VAICTM include, firstly Value Added of Capital Employed (VACA) is an indicator for VA created by one unit of physical capital. It is assumed that if 1 unit of Capital Employed (CA) generates a greater return than other companies, then the company is better at utilizing CA. This better CA utilization is part of the company's IC. In calculating VACA, it is obtained from the comparison between Value Added (VA) divided by Capital Employed (CA). Second, Value Added Human Capital (VAHU), VAHU shows how much VA is generated by spending funds on labor. The relationship between VA and human capital (HC) indicates the ability of HC to create added value within the company. VAHU calculation formula is a comparison between Value Added (VA) divided by human capital (HC). Third, Structural Capital Value Added (STVA), STVA describes the contribution of Structural Capital (SC) in value creation. STVA measures the number of SCs required to produce a VA. STVA results can be obtained from the comparison between Structural Capital (SC) divided by Value Added (VA). Value Added Intellectual Capital (VAIC) is obtained by adding up the three components above, so that it can be formulated:

Company size

Company size is one of the criteria considered by investors in investing strategies. The size of the company can be expressed in total assets or total sales, the greater the total assets and sales, the greater the size of the company (Dewi & Situmorang, 2021). Firm size is measured using the log of total assets (Ehsan & Kaleem, 2012).

VACA = Value Added/ Capital
VAHU = Value Added/ Human Capital
STAVA = Structure Capital/ Value Added
VAIC = VACA + VAHU + STAVA

Intellectual Capital and Financial Performance

According to the understanding of other experts, Intellectual Capital is an intangible asset (Intangible Assets), including information and knowledge owned by business entities that must be managed properly to provide a competitive advantage for business entities (Erandi & Sachitra, 2021). High intellectual capital in a company will increase competitiveness through profit creation, positioning strategy, technological innovation, consumer loyalty, and increased productivity (Kokeza & Paunović, 2021) Intellectual Capital is believed to play an important role in improving financial performance. Previous research has proven that Intellectual Capital has a positive influence on the company's financial performance (Iqbal, Sutrisno, & Roekhudin, 2021) and (Chen et al., 2005).
H1: Intellectual Capital has an effect on Financial Performance

Company Size and Financial Performance

The size of the company, which is proxied by the size of the total assets owned by the company, describes the size of the company. The greater the total assets, the larger the size of the company, so that it reflects the strong performance (Tsoutsoura, 2004). This is supported by research (Choi, Kwak, & Choe, 2010), which states that company size has a positive effect on company performance because an increase in company size will be followed by the addition of common stock which causes the company's financial performance to increase. Company size is calculated using the formula, company size = log of total assets (Ehsan & Kaleem, 2012).The research of Lin (2007) and Wright, Kroll, Mukherji, and Pettus (2009) found that firm size has a positive effect on performance. So, the larger the size of the company, the better its financial performance. However, different results were shown by research by Huang (2002) and Talebnia, Salehi, Valipour, and Shafiee (2010) who found that there was no effect of firm size on firm performance. This shows that the size of the company is not a guarantee that the company will have good performance.
H2: Firm size has an effect on Financial Performance

Methodology

This research uses quantitative research methods and secondary data sourced from company financial documents or reports as research data. The research data was processed by statistical testing using the e views 11 data processing program, the results of the statistical test were then analyzed and interpreted the data. The object of the research is the Automotive and Component Industry companies that are listed on the Indonesia Stock Exchange during the 2016-2019 observation period. The company's financial statements are used as research data, then the research population is determined. In determining the research data using the purposive sampling method with the following criteria: automotive and component companies listed during the observation period, companies that consistently publish annual financial reports ending on December 31, and complete financial statements available on the website.www.idx.co.id. The results of the sample criteria carried out obtained a sample of 11 companies, with a total sample of 41.The Independent Variable in this study is Intellectual Capital as measured by Value Added Intellectual Capital (VAIC) which is the sum of Value Added Capital Employed (VACA), Value Added Human Capital (VAHU) and Capital Value Added Structure (STAVA) Pulic (1998) Other independent variables is the size of the company measured using the total asset value of the company (Ehsan & Kaleem, 2012). And financial performance is proxied using Renturn on Assets (ROA) Chen et al. (2005),

The data obtained from the sample results are secondary data, the data will then be tested for statistics, but first the classical assumption test is carried out. Assumption test includes normality test, multicollinearity test, heteroscedasticity test and autocorrelation test. The normality test aims to see whether the research data used is normally distributed. In this study, the normality test uses histogram output data by looking at the probability value, when the probability value is more than 0.05 then the data is normally distributed. The heteroscedasticity test is a test to see that the regression model occurs when there is an inequality of variance from the residuals of another observation. Heteroscedasticity test was carried out using the Gesjler test. The autocorrelation test was conducted to test the linear regression model whether there was a correlation between the confounding errors during the observation period. Durbin Waston is the method used to perform the autocorrelation test. Multicollinearity test was used to test the correlation between independent variables in the regression model. In testing the hypothesis using the t test to see the effect that occurs between the dependent variable and the independent variable, with a significance level of 5%. Furthermore, panel data regression was used to answer the research hypothesis.

Table 1
Variable Measurement

Variable	Symbol	Measurement
Financial Performance	FP	ROA = Net Income (EAT)/ Equity
Intellectual Capital	IC	VA = Value Added (output-input)
		CE = Capital Employed
		HC = Human Capital
		SC = Structure Capital
		VAIC = Value Added Intellectual Capital
		VACA = VA/CE
		VAHU = VA/ HC
		STAVA = SC/VA
		VAIC = VACA + VAHU + STAVA
Company Size	Size	Ln Asset

Source: Chen et al. (2005); (Ehsan & Kaleem, 2012; Pulic, 1998)

Result and Discussion

Result

The results of the classical assumption test, which include normality test, multicollinearity test, heteroscedasticity test and autocorrelation test. The normality test depicted on the histogram graph illustrates that the data has a normal distribution, besides that the sample used is 41 samples more than the minimum sample of 30. The multicollinearity test with tolerance and Variance Inflation Factor (VIF) values met the requirements, so there was no multicollinearity in the data. Furthermore, the heteroscedasticity test using the Gesjler test showed that there was no heteroscedasticity and the results of the autocorrelation test with a Durbin Waston value of 0.856 and fulfilled the requirements, so it was concluded that there was no autocorrelation.

Table 2
Descriptive statistics

	ROA	VAIC	ASSET
mean	0.065024	1,941,939	2,942,896
median	0.0456	1,831,700	2,897,880
Maximum	0.7133	9,203,000	3,349,450
Minimum	-0.134	-7,511,600	2,631,470
Std. Dev.	0.128632	2,180,533	1,835,773
Skewness	3,251,295	-1,175,531	0.62223
Kurtosis	1,694,997	1,238,312	3,007,664
Observations	41	41	41

Source: processed eviews 11

In table 2 the results of statistical processing obtained the value of financial performance proxied by the maximum ROA of 0.7133, while the minimum value of -0.134 and the average value of 0.0065. From this data, it can be seen that not all automotive and component companies during the observation period experienced an increase in profits, so that profits tended to be inconsistent, especially experiencing growth evenly. The intellectual capital value as measured by the VAIC value shows an average acquisition of 1,831, a maximum value of 9,203 and a minimum value of -7,512. In line with the acquisition of the ROA value, the VAIC value also decreased and decreased inconsistently. Company size is indicated by the amount of total assets owned by the company. From the statistical data, it shows that the highest asset value of 33,494 is an asset owned by PT. Astra International, while the lowest asset value of 26,314 belongs to MAS, Tbk. The distribution of the minimum, maximum and average values of assets does not have a striking gap, so it can be said that the company has asset values that are not much different.

Table 3
Analysis of Panel Data Regression

Variable	Coefficient	Std.Error	t-Statistic	Prob
C	0.5274	0.2808	1.878	0.0068
IC	0.0459	0.0044	1,402	0.0000
SIZE	-0.0187	0.0095	-1,973	0.0557
R-squared		0.7539		
Adjusted R-squared		0.7409		
Mean dependent var		0.0650		
Durbin-Watson stat		0.8560		
F-statistics		582081		
Prob(F-statistic)		0.0000		

Source: processed eviews 11

The results of panel data processing obtained the following regression equation:
ROA = 0.5274 + 0.0459 VAIC – 0.0187 SIZE +
The regression equation illustrates that there is a positive growth of intellectual capital but a negative growth of firm size.

Table 4
Hypothesis test

Variable	Coefficient	t-Statistic	Prob	Result
C	0.5274	1.878	0.0068	
IC	0.0459	1,402	0.0000	Effect
SIZE	-0.0187	-1,973	0.0557	no effect

Source: processed eviews 11

In table 4, the probability value of intellectual capital is 0.000 and shows it is smaller than 0.05, so the hypothesis is in accordance with the theoretical concept built, and it can be interpreted that intellectual capital has an effect on financial performance. While the probability value of company size is 0.0557, this value exceeds the allowable standard error value, thus indicating that the size of the company has no effect on the value of the company. The results of the panel data test listed in table 3 show the Adjusted R-squared value obtained at 0.7409, indicating that intellectual capital and company size can affect financial performance by 74.09%, while the difference can be influenced by other variables that the authors did not examine.

Discussion

The results of the hypothesis test show that there is an influence between intellectual capital and financial performance. The ROA in measuring the company's performance during the observation period does not reflect the smoothing increase in profit, but the fluctuating increase and decrease in profit. This is in line with the acquisition of the VAIC value in measuring intellectual capital, the VAIC value tends to decrease in almost all automotive and component companies. From the trend of declining VAIC and ROA values, it indicates that when the company does not add value

added either in the form of capital employed, human capital, and capital structure, it does not increase profits and has an impact on poor financial performance. Value Added Intellectual Capital needs to be increased in the form of knowledge possessed by employees, systems, processes, strategies, policies and company capabilities in order for the company to be able to compete in the global market. Intellectual Capital High levels in a company will increase competitiveness through profit creation, positioning strategy, technological innovation, consumer loyalty, and increased productivity (Kokeza & Paunović, 2021) This research is in line with that carried out by Mansoor, Jahan, and Riaz (2021) proves that intellectual capital has an effect on financial performance and research conducted by Adrian concludes that intellectual capital has a positive and significant effect on the company's financial performance. Furthermore, the results of the hypothesis test of firm size on financial performance indicate that firm size has no effect on firm performance. When the value of assets owned by the company is not able to generate high profits, it makes financial performance that is not optimal and even tends to be less good. This can be caused because the company has large assets but is not able to manage its assets so that it cannot generate optimal profits. This is in line with the research results (Huang, 2002) and (Talebnia et al., 2010) which proves that there is no influence between firm size and firm performance.

Conclusion

On the explanation of theory and data processing with hypothesis testing that has been carried out, it can be summarized that intellectual capital has an influence on company performance, while company size has no effect on company performance in the Automotive and Component Industry for the 2016-2019 period. Research conducted on financial performance is not only focused on intellectual capital and company size, but other variables can certainly be investigated whether there is a direct influence on company performance. Based on the data that researchers use, the company's performance has not been optimal, therefore the company should further increase company profits to improve company performance and company sustainability in the future.

References

Benrqya, Y., & Jabbouri, I. (2021). Performance evaluation of European grocery retailers: a financial statement analysis. *International Journal of Logistics Economics and Globalisation, 9*(1), 24-39. doi:https://doi.org/10.1504/IJLEG.2021.116230

Chen, M. C., Cheng, S. J., & Hwang, Y. (2005). An empirical investigation of the relationship between intellectual capital and firms' market value and financial performance. *Journal of Intellectual Capital*, 159-176. doi:https://doi.org/10.1108/14691930510592771

Choi, J.-S., Kwak, Y.-M., & Choe, C. (2010). Corporate social responsibility and corporate financial performance: Evidence from Korea. *Australian journal of management, 35*(3), 291-311. doi:https://doi.org/10.1177%2F0312896210384681

Dewi, R., & Situmorang, R. (2021). THE INFLUENCE OF CORPORATE ENVIRONMENTAL PERFORMANCE ON ENVIRONMENTAL DISCLOSURE WITH ENVIRONMENTAL RISK AS A MODERATING VARIABLE. *ACCRUALS (Accounting Research Journal of Sutaatmadja), 5*(01), 146-162. doi:https://doi.org/10.35310/accruals.v5i01.627

Ehsan, S., & Kaleem, A. (2012). An empirical investigation of the relationship between corporate social responsibility and financial performance (Evidence from manufacturing sector of Pakistan). *Journal of Basic and Applied Scientific Research, 2*(3), 2909-2922.

Erandi, H., & Sachitra, V. (2021). Knowledge Management Practices towards Competitive Advantage: Study on SMEs in Sri Lanka. *Asian Journal of Education and Social Studies*, 1-15. doi:https://doi.org/10.9734/ajess/2021/v15i130365

García-Meca, E., Parra, I., Larrán, M., & Martínez, I. (2005). The explanatory factors of intellectual capital disclosure to financial analysts. *European Accounting Review, 14*(1), 63-94. doi:https://doi.org/10.1080/0963818042000279713

Hermawan, S. H., Rahayu, D., Jamaludin, J., Rahayu, R. A., & Biduri, S. (2021). Intellectual Capital Disclosure And Comprehensive Intellectual Capital Management: Evidence From Universities In Southeast Asia. *Jurnal Reviu Akuntansi dan Keuangan, 11*(1), 168-184. doi:https://doi.org/10.22219/jrak.v11i1.14287

Huang, L.-Y. (2002). *FDI scale and firm performance of Taiwanese firms in China*: Nova

Southeastern University. Retrieved from https://www.proquest.com/openview/a9323b1a9fc8f70c7714fd7805e3608f/1?pq-origsite=gscholar&cbl=18750&diss=y.

Hutchings, M. (2021). Accountability, social justice and educational research *Educational research for social justice* (pp. 45-78): Springer. doi:https://doi.org/10.1007/978-3-030-62572-6_3

Ionita, C., & Dinu, E. (2021). The effect of intangible assets on sustainable growth and firm value– Evidence on intellectual capital investment in companies listed on Bucharest Stock Exchange. *Kybernetes*. doi:https://doi.org/10.1108/K-05-2020-0325

Iqbal, A., Sutrisno, T., & Roekhudin, R. (2021). Corporate Social Responsibility and Financial Performance: Moderating Role of Intellectual Capital. *International Journal of Social and Local Economic Governance, 5*(1), 1-11. doi:https://doi.org/10.21776/ub.ijleg.2019.005.01.1

Kokeza, G., & Paunović, M. (2021). Characteristics of intellectual capital, competitiveness and industrial policies of innovation-intensive sectors in Serbia. *Ekonomika preduzeća, 69*(1-2), 14-30. doi:10.1007/978-3-030-78479-9_3

Lin, K.-L. (2007). Study on Related Party Transactions with Mainland China in Taiwan Enterprises. *成功大學會計學系學位論文*, 1-111. Retrieved from https://www.airitilibrary.com/Publication/alDetailedMesh1?DocID=U0026-0812200913340444

Mansoor, A., Jahan, S., & Riaz, M. (2021). Does green intellectual capital spur corporate environmental performance through green workforce? *Journal of Intellectual Capital*. doi:https://doi.org/10.1108/JIC-06-2020-0181

Pulic, A. (1998). *Measuring the performance of intellectual potential in knowledge economy*. Paper presented at the 2nd McMaster Word Congress on Measuring and Managing Intellectual Capital by the Austrian Team for Intellectual Potential.

Rahayu, E. D., & Azzahra, K. (2021). THE INFLUENCE OF INTELLECTUAL CAPITAL AND CORPORATE SOCIAL RESPONSIBILITY TO THE FINANCIAL PERFORMANCE OF PROFERTY AND REAL ESTATE COMPANIES IN INDONESIA. *JIM UPB (Jurnal Ilmiah Manajemen Universitas Putera Batam), 9*(2), 175-186. doi:https://doi.org/10.33884/jimupb.v9i2.3704

Riahi-Belkaoui, A. (2003). Intellectual capital and firm performance of US multinational firms: A study of the resource-based and stakeholder views. *Journal of Intellectual Capital*, 215-226. doi:https://doi.org/10.1108/14691930310472839

Sudibyo, A. A., & Basuki, B. (2017). *Intellectual capital disclosure determinants and its effects on the market capitalization: evidence from Indonesian listed companies*. Paper presented at the SHS Web of Conferences. doi:https://doi.org/10.1051/shsconf/20173407001

Talebnia, G., Salehi, M., Valipour, H., & Shafiee, S. (2010). Empirical Study of the Relationship between Ownership Structure and Firm Performance: Some Evidence of Listed Companies in Tehran Stock Exchange. *Journal of Sustainable Development, 3*(2), 264-270. Retrieved from https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.662.8830&rep=rep1&type=pdf

Tsoutsoura, M. (2004). Corporate social responsibility and financial performance. 1-22. Retrieved from https://escholarship.org/content/qt111799p2/qt111799p2.pdf

Wright, P., Kroll, M., Mukherji, A., & Pettus, M. L. (2009). Do the contingencies of external monitoring, ownership incentives, or free cash flow explain opposing firm performance expectations? *Journal of Management & Governance, 13*(3), 215-243. doi:https://doi.org/10.1007/s10997-008-9063-8

Xu, J., & Liu, F. (2021). Nexus between intellectual capital and financial performance: an investigation of Chinese manufacturing industry. *Journal of Business Economics and Management, 22*(1), 217-235. doi:https://doi.org/10.3846/jbem.2020.13888

893