

The Effect of Intellectual Capital on Financial Companies: Empirical Study from Indonesia

Entis Sutisna^{a,*}, Fahrudin Pasolo^a, Fahrudin Pasolo^a, Entar Sutisman^a, & Lina Mariana^b

^a Universitas Yapis Papua, Papua, Indonesia.

^b Polinas, Makassar, Indonesia.

Abstract

This study examines: 1) The Effect of Value-Added Capital Employed (VACA) on Financial Performance. 2) Effect of value-added human capital (VAHU) on financial performance 3) Effect of Structural Capital Value Added (STVA) on Financial Performance. The population of this study is manufacturing companies listed on the Indonesia Stock Exchange from 2018 to 2022. The number of companies studied was 41. The sampling technique used was purposive. The type of sample is obtained based on predetermined criteria. The data used is quantitative data obtained in the form of numbers that can be calculated by accessing the IDX.co.id site and the official website of each company. The data analysis technique used is multiple regression analysis. The study results show that: 1) Value Added Capital Employed (VACA) positively and significantly affects financial performance. 2) Value-added human capital (VAHU) has a positive and insignificant effect on financial performance. 3) Structural Capital Value Added (STVA) positively and significantly affects financial performance.

Keywords: VACA, VAHU, STVA, Company Performance.

1. Introduction

Along with economic changes that are characterized by a knowledge base accompanied by steps to implement knowledge management, the company's prosperity depends on the creation of transformation and capitalization of the knowledge itself (Montes et al., 2019). The use of science and technology includes how to use other resources efficiently and economically which will lead to an advantage over the competition. Therefore, advances in knowledge, technology, intense competition, and sustainable innovation growth are indications of the rapid development of the world economy currently. Thus, companies are required to change their business strategy which was originally based on labor (labor-based business) to transform into a knowledge-based business. This needs to be done as an accurate step to survive or win the business competition. Efforts that can be taken by businesspeople to defend themselves are by improving managerial performance and innovating in their business. Company performance according to (Fung et al., 2017) is something produced by a company in a certain period with reference to established standards. Achieving optimal company performance can be achieved if every organization, both the private sector and the public sector, has a competitive advantage. (Gao et al., 2022) explains that competitive advantage can be formed in various ways, such as creating products with unique designs, using modern technology, organizational designs, and using existing resources effectively, efficiently and economically. In line with what was revealed (Kim et al., 2021) competitive advantage can be realized in terms of gaining strategic, tactical and operational advantages. A company, in order to continue to survive, companies quickly change their management system from a business based on labor (labor-based business) to a business based on knowledge or knowledge based business. (Löhlein, 2016) also explained that in a knowledge-based management system, conventional capital such as natural resources, financial resources and other physical assets becomes less important than capital based on knowledge and technology. By using science and technology, it will be obtained how to use other resources efficiently and economically which can later create an advantage in competition. (Dahan et al., 2016) revealed that to achieve competitive advantage, every organization, both the private sector and the public sector, must have a competitive advantage compared to other organizations. This advantage can be realized in various ways, such as product innovation, organizational design, and using effective and efficient resources. The role

* Corresponding author
E-mail address: pacesutisna@gmail.com

of knowledge as an asset that is quite important for companies is followed by the increasing importance of identifying and managing intellectual capital.

Intellectual capital is an intangible asset, so it is difficult to (Goncharenko, 2021)) have also researched intellectual capital, and argued that intellectual capital is an intangible asset and is a knowledge-based business. The traditional business environment tends to focus on tangible assets to improve organizational performance. But in today's business culture, organizations are more focused on knowledge or intellectual assets to increase value base efficiency and how value base efficiency improves the company's financial performance. The value of a company can be reflected in the price paid by investors for their shares in the market, the increasing difference between shares and the book value of assets owned by the company shows hidden value. More respect for a company from investors is believed to be caused by the intellectual capital owned by the company. The reduction, even the loss of fixed assets in the company's balance sheet does not cause a loss of market appreciation for the company, reflected in the number of companies that have tangible assets that are not significant in the financial statements but the market appreciation for these companies is very (Liang et al., 2020). Therefore, intellectual capital in this modern business has become a very valuable asset. The growing knowledge about intellectual capital, this poses a challenge for accountants to identify, measure and disclose it in financial statements.

In Indonesia itself, the phenomenon of intellectual capital began to develop after the emergence of PSAK No. 19 (revised 2000) concerning intangible assets. Although not explicitly stated as intellectual capital, intellectual capital has received attention. According to PSAK No. 19, intangible assets are non-monetary assets that can be identified and do not have a physical form and are held for use in producing or delivering goods or services, rented out to other parties, or for administrative purposes (IAI, July 2009). PSAK No.19 paragraph 09 mentions several examples of intangible assets such as science and technology, design and implementation of new systems or processes, licenses, intellectual property rights, market knowledge and trademarks (including product brands / brand names). In addition, computer software, patents, copyrights, motion pictures, customer lists, forest concession rights, import quotas, franchises, relationships with suppliers or customers, customer loyalty, marketing rights, and market share are also added.

But, the implementation of intellectual capital in Indonesia is still lacking. This can be seen from the company's reluctance to pay more attention to intellectual capital which includes human capital, structural capital and employed capital. In many cases, until now companies in Indonesia tend to use conventional based in building their business so that the products produced are still poor in technological content. Even though these companies will be better able to compete if they use the competitive advantages obtained through creative innovations produced by the company's intellectual capital (Kuryanto et al, 2008). The company's inability to record these intangible assets on the balance sheet is because the current accounting standards have not been able to capture and report investments made to acquire non-physical resources, because accounting tends to focus on real assets.

Currently, there tends to be a gap between the company's market value and book value in the market (Sainaghi et al., 2019). According to (Forney, 2021) from 1977 to 2001, the ratio of market value to book value of Standard and Poor's (S & P) in 500 companies increased from slightly over one to more than five, this illustrates that the company's financial statements cannot represent the true value of the company. According to Fornell in (Nettayanun, 2023) this gap indicates the existence of an intangible asset consisting of Intellectual Capital (IC), which is often not reported in the financial statements, but the intangible asset is considered very important and may constitute 80 percent of the company's market value. (Ghosh, 2022) defines intellectual capital as knowledge and information that creates value added efficiency to generate company wealth. Therefore, the creation of value added by an organization can measure Value Added Capital Employed (VACA), Value Added Human Capital (VAHU) and Structural Capital Value Added (STVA).

Moving on from the understanding that intellectual capital plays an important role in determining the value of a company, innovation becomes a factor that is quite important for companies to maintain long-term competitive advantage. Innovation capital leads to innovation results that are part of intellectual property rights, such as patents and licenses as a major factor for a company's ability to maintain long-term competition (Ghosh, 2022). (Pant & Nidugala, 2022) examined the effect of Intellectual Capital on business performance. In his research, Bontis et al., proxies intellectual capital in its components, namely human capital, structural capital and employed capital. The results obtained from this study indicate that human capital has a positive and significant effect on employed capital, and a positive and insignificant effect on structural capital. Other results in this study indicate that structural capital has a positive and significant effect on employed capital. The last thing shown in this study is that structural capital has a positive and significant effect on business performance. Therefore it can be concluded that intellectual capital has a positive effect on business performance.

Another study was conducted by Zerenler et al., (2008) examining the effect of intellectual capital on innovation performance. Zerenler et al., proxies intellectual capital into its components, namely human capital, structural capital, and employed capital. The three components of intellectual capital have a positive effect on innovation performance. Therefore, it can be concluded that intellectual capital has a positive effect on innovation performance.

(Zhang et al., 2022) have examined the effect of intellectual capital on firm performance. (Al-Omouh et al., 2022) proxies intellectual capital into innovative capacity, efficient operating processes, cost of maintaining relationships with customers, and value added human resources. This study shows that innovative capacity has a positive effect on the cost of maintaining relationships with customers, innovative capacity has a positive effect on the added value of human resources, efficient operating processes have a negative effect on the cost of maintaining relationships with customers, value added human resources has a positive effect on the costs of maintaining relationships with customers, as well as the cost of maintaining relationships with customers and the added value of human resources have a positive effect on company performance. Therefore, it can be said that intellectual capital has a positive effect on company performance.

(Kusi-Sarpong et al., 2022) have examined the effect of intellectual capital on financial performance, using the VAICTM method. Rehman examines the relationship between intellectual capital and financial performance, in which intellectual capital is proxied by company added value, human capital, structural capital and customer capital, and financial performance is measured through EPS, ROE and ROI. The results of this study indicate a positive relationship between human capital, structural capital and customer capital on financial performance, and a positive relationship between company added value on financial performance. Therefore, it can be seen that the results of this study indicate a positive relationship between intellectual capital and financial performance. (Al-Omouh et al., 2022) in their research revealed that most research focuses on the impact of individual intellectual capital on performance without looking at an integrated framework that describes the relationship between components of intellectual capital. Many factors, such as company strategy and industry characteristics, can influence the drivers of company value. Thus, it would be more appropriate to place emphasis on the interrelationships between elements of intellectual capital from a more macroscopic perspective, rather than paying attention only to specific measures of intellectual capital and performance when we examine the effect of intellectual capital on performance. If the relationship between intellectual capital components can be understood more clearly, an increase in company performance can be achieved by managing which components of intellectual capital have the most influence on the company, for example by investing more resources in these intellectual capital components.

This study replicates research conducted by (Ruppen & Brugger, 2022). The difference with previous research is that this research data was obtained from manufacturing companies that have gone public and listed on the Indonesia Stock Exchange from 2009 to 2011). This study tries to expand the scope of the relationship between intellectual capital and company performance by using a research model developed by (Farzaneh et al., 2022) combining the perspectives of intellectual capital and value creation based on resources based theory and the concept of input - process - output. (Afrifa et al., 2022) used three components of intellectual capital, namely human capital, structured capital and capital employed, each of which is proxied as value-added human resources, efficient operating processes, capacity for innovation and the cost of maintaining relationships with customers. Then to look for interactions and relationships between components of intellectual capital which ultimately affect company performance, a measurement model of intellectual capital and structural equation modeling (SEM) can be created in which the three components of intellectual capital are analyzed simultaneously. In addition, (Mawejje, 2019) used AMOS as an analysis tool. while in this study the analytical tool used is Partial Least square.

Based on these research problems, researchers are motivated to conduct further research regarding the effect of intellectual capital on company performance. The problem to be examined in this study is whether the intellectual capital affects financial performance. Intellectual capital in this study uses three components, namely Value Added Capital Employed (VACA), Value Added Human Capital (VAHU) and Structural Capital Value Added (STVA) to determine the effect on financial performance in Manufacturing Companies listed on the Indonesia Stock Exchange.

The purpose of this research is to empirically examine the effect of intellectual capital on financial performance in manufacturing companies listed on the Indonesia Stock Exchange. With analysis using the Statistical Product and Service Solutions (SPSS) method, because a manufacturing company is a company that sells its products, which starts with a continuous production process starting from purchasing raw materials, processing materials to becoming products ready for sale. (Sun & Kim, 2013) investigated using the components of resource and structural capital) and the three traditional dimensions of firm performance. In this study, company performance measurements were: Assets (ROA), productivity using Asset Turnover (ATO) and market valuation using Market-to-Book indicators (MB and traditional measurements of company performance), then correlation and linear multiple regression analysis was carried

out. Researchers affect the performance of the three companies, while intellectual capital tends not to affect the performance of the company.

Research (Pant & Nidugala, 2022) used the Pulic model (VAIC) to examine the relationship between IC and market value and company financial performance using a sample of public companies in Taiwan. The results show that IC has a positive effect on market value and company financial performance. In fact (Wang et al., 2023) also proves that IC can be an indicator to predict company performance in the future. In addition, these two studies also prove that there is a control variable that consistently shows a significant effect on company performance, namely company size (SIZE). The rationale for using this control variable is to control company characteristics related to company performance.

Research (Luck & Schempp, 2022) chose specifically the banking sector as a research sample. The results of these two studies indicate that VAIC can be used as an instrument to rank the banking sector in Japan and India based on their IC performance. (Wintaka et al., 2019) classify banks based on IC performance into four categories, namely: 1. top performers, 2. good performers, 3. common performers, and 4. bad performers.

Research by (Ruppen & Brugger, 2022)) used 150 companies listed on the Singapore Stock Exchange as research samples. The results are consistent with that of (Muniesa & Linhardt, 2011) that IC is positively related to firm performance; IC is also positively related to future firm performance. This study also proves that the average IC growth of a company is positively related to the company's performance in the future. In addition, this study indicates that the contribution of IC to company performance differs based on the type of industry. Research by (Dang & Wang, 2022) conducted research to determine the effect of physical capital, financial capital, and intellectual capital on company performance in manufacturing companies on the Indonesia Stock Exchange. The results of his research using PLS, it is known that there is a positive influence of physical capital, financial capital, and intellectual capital on the performance of manufacturing companies. (Shao et al., 2022) conducted a study entitled "the effect of intellectual capital on market value and company financial performance". The analysis used is multiple linear regression analysis. The analytical tool used is the market to book value ratio (MtBV) and company performance. The results of this study indicate that the three components of intellectual capital, namely Value added Capital Employed (VACA) and Structural Capital Value Added (STVA) have a positive effect, while Value Added Human Capital (VAHU) has no positive effect on company performance. (Williams et al., 2015) examined the effect of IC on the performance of companies listed on the Taiwan stock exchange in 2001 – 2008 by including company size and leverage as control variables because in previous studies company size had a significant relationship with company performance. In this study the measurement of intellectual capital uses VAIN (Value Added Intellectual Capital) as a redesign resulting from improvements to the basic VAIC model by Pulic (1998) because according to (Pant & Nidugala, 2022) the basic assumptions for the VAIC approach are problematic and incomplete. The basis of VAIN itself is the Scandia Value Scheme in which intellectual capital is composed of two things, namely human capital and structural capital, without employed capital being the measurement variable in VAIC. The results of this study are that VAIN has a positive effect on the company's financial performance. (Leffel, 2022) concluded that VAICTM is considered as a key methodology for measuring the IC performance of Modarab companies in Pakistan. In his research results HCE is an important component for measuring IC, empirically it can be interpreted that HCE results have a significant relationship with the financial performance (ROE and EPS) of modal companies and the two VAICTM components namely SCE and CEE also deserve to have a significant relationship with the company's financial performance modaba. (Troise et al., 2022) examines the effect of intellectual capital on company financial performance, future company financial performance and the average growth of intellectual capital on company financial performance in the future. The sample used in this study is LQ 45 companies. The results of this study indicate that there is a significant influence between IC (VAICTM) on the financial performance of LQ 45 companies in Indonesia for 2005, 2006, and 2007. IC (VAICTM) influences future financial performance company LQ 45. (Sun & Kim, 2013) conducted a study aimed at finding out and obtaining evidence about the effect of intellectual capital on the Return on Assets (ROA) of banks registered with Bank Indonesia in 2006 - 2009. The results obtained from this research are that there is a positive influence between intellectual capital on Return on Assets (ROA). This means that the higher the value of the intellectual capital of a banking company, the Return on Assets (ROA) of a financial company will increase.

Research conducted by (Shchepkina et al., 2022) this research is entitled "The Influence of Intellectual Capital on Company Performance (Empirical Study of Jakarta Islamic Index (JII) Companies, 2007-2012)". Research i determines the effect of Intellectual Capital on company finances. The sample in this study were companies that went public which were included in the JII (Jakarta Islamic Index) group for the 2007-2012 period. The data analysis technique used is multiple linear regression analysis. The results of this study indicate that Intellectual Capital has a positive effect on financial performance. Each component of Intellectual Capital gives positive influence results, but Capital Employed Efficiency has the most dominant influence on the financial performance of JII companies.

(Kusi-Sarpong et al., 2022) entitled *The Effect of Intellectual Capital on Firm Value with Financial Performance as an Intervening Variable*. This study uses the dependent variable Market Value of the Company's Financial Performance as measured by PBV and ROE, while the independent variable is Intellectual Capital as measured by the Value Added Intellectual Coefficient (VAICTM). The results of the study show that intellectual capital has a positive effect on firm value.

1. The Effect of Value Added Capital Employed (VACA) on Financial Performance.

Capital employed (CE) describes a company's ability to manage resources in the form of capital assets which if managed properly will improve the company's financial performance. VACA is a form of a company's ability to manage its resources in the form of capital assets. With good management and utilization of capital assets, companies can improve financial performance, company growth, and market value ((Forney, 2021). Utilization of CE efficiency used can increase the company, because the capital used is the value of assets that contribute to the company's ability to generate income. The better the company manages the three components of intellectual capital, the better the company manages assets. If the company is able to manage assets properly and can reduce operational costs so that it can increase added value from the results of the company's intellectual abilities. So it can be concluded that capital employed has a significant effect on profitability and a positive relationship.

H 1: Value Added Capital Employed (VACA) has a positive effect on financial performance.

2. Effect of Value-Added Human Capital (VAHU) on Financial Performance.

Human capital (HC) describes human resources with superior knowledge, skills and competencies, so they can improve the company's financial performance so as to achieve competitive advantage. Indications of the salaries and benefits provided by the company to employees, are able to increase employees in supporting company performance so that HC can create added value and increase company revenue and profits. Accounting profit is a measure of return for shareholders, while value added is a more accurate measure created by stakeholders (Yeung et al., 2013) One of the value added owned by the company is generated by the efficiency of human capital. That is, the company is able to maximize knowledge, expertise, networks so as to create value, so this can also benefit shareholders because management is able to manage the organization for their benefit. So it can be concluded that human capital has a significant influence on profitability and a positive relationship.

H 2: Value Added Human Capital (VAHU) has a positive effect on financial performance.

3. Effect of Structural Capital Value Added (STVA) on Financial Performance.

Structural capital (SC) describes the capital needed by a company to fulfill the company's routine processes in producing optimal performance, as well as overall business performance, for example the company's operational systems, manufacturing processes, organizational culture, management philosophy and all forms of intellectual property owned by the company ((Pant & Nidugala, 2022). Without being accompanied by good SC management, it will hinder employee productivity in producing value added (Basyar, nd). Management who is able to manage SC well will help improve company performance so that it can increase company revenue and profits. It can be concluded that structural capital has a significant effect on profitability and a positive relationship.

H3: Structural Capital Value Added (STVA) has a positive effect on financial performance.

2. Method

2.1. Location and Time of Research

This research was conducted at manufacturing companies listed on the IDX Tbk. where the data was collected at the IDX Data for manufacturing companies can be found on the website www.idx.co.id. In addition, research data can also be obtained from each of the company's official websites. This research is planned from April to October 2022.

2.2. Data Types and Sources

Based on the type of data used in this study is quantitative data, namely data obtained in the form of numbers that can be calculated related to the problem under study. In this case, it is the financial statements of Manufacturing companies,

during the study period from 2012 - 2016 on the Indonesia Stock Exchange. Based on the data source used is secondary data, namely by collecting, recording, and reviewing documents regarding the financial data of manufacturing companies during the research period from 2012 - 2016 on the Indonesia Stock Exchange.

2.3. Data Collection Techniques

Data collection techniques are documentation to provide an overview or description of a standard deviation data (Ghozali, 2006). In this study, by looking at the description of the existing data, clear information will be obtained about the effect of intellectual capital on company performance.

2.4. Population and Sample Determination

(Fehr, 2016) gives the understanding that: "Population is a generalized area consisting of objects or subjects that become certain quantities and characteristics set by researchers to be studied and then drawn conclusions.

The population used in this study are manufacturing companies listed on the Indonesian Stock Exchange. while the list of manufacturing companies listed on the Indonesian stock exchange is 491 companies.

The research sample is a portion of the population that is taken as a data source and can represent the entire population. (Choyke et al., 2022) gives the notion that "the sample is part of the number and characteristics possessed by the population. The sampling technique in this study is the purposive sampling method.

The criteria that must be met by the sample in this study are as follows: Manufacturing Companies Listed on the Indonesia Stock Exchange. Listed on the Indonesia Stock Exchange for five consecutive years during the research period from 2012 to the end of 2016. Publish financial reports during the observation period from 2012 to 2016 in full and stated in rupiah.

Data analysis method is a method used to process research results in order to obtain a conclusion. The purpose of data analysis is to obtain relevant information contained in the data.

2.5. Instrument Test

2.5.1. Validity test

The validity test is useful for determining how accurately a tool performs a measurement function, if $r_{count} > r_{table}$ then the item is declared valid and can be used in further analysis.

2.5.2. Reliability Test

Reliability Test To test reliability, the Cronbach Alpha formula is used as follows:

$$r_{(n-1)} = \frac{k}{k-1} \left[1 - \frac{\sum (a_{ij})^2}{\sum a_{i1}^2} \right]$$

information:

$r_{(n-1)}$	= Instrument reliability
k	= the number of company items
$\sum (a_{ij})^2$	= number of item variants
$\sum a_{i1}^2$	= total variance

2.5.3. Classic assumption test

Classical Assumption Test is conducted to find out whether regression can be done or not. This research data uses secondary data, so to determine the validity of the model it is necessary to test some of the classical assumptions used, namely:

2.5.4. Normality test

The Normality test aims to test whether in the regression model, the confounding variables have a normal distribution relationship (Ghozali, 2005). As it is known that the T and F tests assume that statistical tests are invalid for small sample sizes.

Statistically, there are two components of normality, namely skewness and kurtosis. Skewness is related to distribution. Skewed variables are those whose mean value is not in the middle of the distribution. If the variables are normally distributed, the skewness and kurtosis values are equal to zero.

By looking at the normal probability data is said to be normal if there is a spread of points around the diagonal line and the distribution follows the direction of the diagonal line, conversely if the data spreads away from the diagonal line, the regression model does not meet the assumption of normality.

In the normality test, this research statistically uses the following conclusions: If the sig value > 0.05 then the data distribution is normal. If the sig value <0.05 then the data distribution is not normal.

2.5.5. Autocorrelation Test

The autocorrelation test aims to test whether in a linear regression model there is a correlation between the confounding errors in period t and the (previous) period t-1 errors. If there is a correlation, then it is called a correlation problem. Autocorrelation arises because successive observations over time are related to one another. This problem arises because the residual is not independent from one other observation (Ghozali, 2005). If the probability value $\geq \alpha = 0.05$ then the observations occur randomly. If the probability value is $\leq \alpha = 0.05$, then the observation is not random

2.5.6. Multicollinearity Test

According to Ghozali (2011) the multicollinearity test aims to test whether the regression model found a correlation between the independent variables or not, a good model should not have a high correlation between the independent variables. To detect the presence or absence of multicollinearity in the regression model is as follows:

Having a perfect correlation between independent variables (more than 0.9) results in a multicollinearity problem.

Having a VIF value of more than 10 (> 10) and a tolerance value of less than 0.10 (<0.10), the model has a multicollinearity problem.

2.5.7. Heteroscedasticity Test

According to Imam Ghozali (2011) the heteroscedasticity test aims to test whether in the regression model there is an inequality of variance from one residual observation to another observation. If the residual variance from one observation to another observation remains, then it is called homoscedasticity and if it is different, it is called heteroscedasticity. The way to test whether there is heteroscedasticity is by using the scatterplot graph. This can be done by looking at the plot between bound (ZPRED) and the residual (SRESID). Detection of the presence or absence of heteroscedasticity can be done based on the following analysis: If there is a certain pattern, such as the dots that form a certain regular pattern (wavy widens then narrows), then it indicates that heteroscedasticity has occurred. If there is no clear pattern and the points spread above and below zero on the Y axis, then heteroscedasticity does not occur.

2.6. Descriptive Statistical Analysis

In regression analysis, in addition to measuring the strength of the relationship between the two variables, (Ghozali 2011). Testing the hypothesis in this study uses multiple regression analysis. Multiple regression analysis must be used to test the effect of independent variables, namely: Human Capital, Employed Capital and Structural Capital on Financial performance as the dependent variable. The regression equation can be written as follows:

$$Y = a + b_1x_1 + b_2x_2 + b_3x_3 + e$$

Y = company performance

a = constant regression equation

b₁,b₂,b₃ = regression coefficients

X₁ = Capital Employed

X₂ = Human Capital

X₃ = Structural Capital

e = confounding variable (residual)

2.7. Hypothesis test

2.7.1. F test (simultaneous test)

The f test (Simultaneous Test) is conducted to find out whether the independent variables, namely Human Capital, Employed Capital and Capital Structure simultaneously (simultaneously) affect the dependent variable of financial performance alone will see the direction and significance of the influence: The significance of the influence will be seen from the p- value at the significance level $\alpha = 0.05$ with the following criteria. If the P-Value is < 0.05, Value

Added Capital Employed (VACA), Value Added Human Capital (VAHU), and Capital Value Added Structure (STVA) have a significant effect on financial performance. If the P-Value is > 0.05 , Value Added Capital Employed (VACA), Value Added Human Capital (VAHU), and Capital Value Added Structure (STVA) have no significant effect on financial performance.

2.7.2. *T-test (Statistical Test)*

The statistical test is intended to see whether the independent (independent) variables individually an influence on the dependent variable have, assuming the other independent variables are constant.

Testing is carried out in the following way: Formulate hypotheses; Determining the significance level is 0.05; Determine the decision by comparing t count with t table with the following criteria: If t count $>$ t table, then H_0 is rejected; If t count $<$ t table, then H_0 is accepted. Operational and Measurement Definitions

Variable is an attribute or characteristic or value of a person, object or activity that has certain variations determined by the researcher to be studied and conclusions drawn. This study uses two types of variables, namely dependent or dependent variables and independent or independent variables. The dependent variable in this study is financial performance, while the independent variables in this study are the three components of Intellectual Capital consisting of Value-Added Capital Employed (VACA), Value Added Human Capital (VAHU), Structural Capital Value Added (STVA). The following is an explanation of each variable in this study:

2.7.3. *Dependent or Bound Variable (Y)*

The dependent variable of this study is the financial performance variable which is the result of a series of business processes which sacrifice various kinds of resources, namely human resources and company finances. If the financial performance increases, it can be seen from the incessant activities of the company in order to generate the maximum profit. The profits or profits generated will certainly differ depending on the size of the company that is engaged. Based on the process of increasing this profit or profit. According to Moerdiyanti (2010), financial performance is measured using ratios, namely:

2.7.4. *Price to Earning Ratio (PER)*

Robert Ang (1997) states that the price to earnings ratio is used to see how the market appreciates the performance of a company's stock on the company's performance. The greater the PER of a share, the more expensive the stock is in terms of net income per share. PER will increase as the stock price increases, so a high PER also indicates that stock prices tend to be high and stock returns will also be higher. This can also happen because PER can be an indicator for profit growth indicators (Cragg and Malkiel in Penman, 1996) and indicates future profit growth (Penman, 1996).

2.7.5. *Independent Variable or X independent variable*

Independent variables are variables that affect or become the cause of changes or the emergence of dependent or dependent variables (Sugiyono, 2009:59). The independent variable in this study is IC which is measured based on the value added created by Value Added Capital Employed (VACA), Value Added Human Capital (VAHU), Structural Capital Value Added (STVA). The combination of the three value added is symbolized by the name VAIC.

Second Stage: Calculating Value Added Capital Employed (VACA). Value Added Capital Employed (VACA) measurement is carried out by calculating Value Added with capital employed (CE). value added (VA) is obtained from the difference between total sales and other income (OUT) with expenses and costs. Value added is an indicator used to assess business success and shows the company's ability to create value (Ulum, 2009). In other words, Value Added is a company's net profit. Meanwhile, capital employed (CE) is obtained from available funds (equity added to net income). Value Added Capital Employed (VACA) is a form of a company's ability to manage resources in the form of capital assets. With good management of capital assets, it is believed that companies can increase market value and company performance.

Third Stage: Calculating Value Added Human Capital (VAHU)

Measurement of Value-Added Human Capital (VAHU) is carried out by dividing value added (VA) with human capital (HC), with value added (VA) obtained from the difference between total sales and other income (OUT) with expenses and expenses other than expenses employee (IN). While human capital (HC) is taken from the expenses incurred in improving the ability of employees.

Value Added Human Capital (VAHU) is the expertise and competence possessed by employees in producing goods and services as well as their ability to relate well with customers. Included in human capital are education, experience,

skills. According to Bontis (2004) human capital is a combination of knowledge, skills, ability to innovate and ability to complete tasks, including corporate values, culture and philosophy. If the company is successful in managing the knowledge of its employees, it can increase human capital. So that human capital is the wealth owned by a company that is contained in every individual in it. This human capital will later support Structural capital and Employed capital.

Fourth Stage: Calculating Structural Capital Value Added (STVA). Measurement of Structural Capital Value Added (STVA) is carried out by dividing structural capital (SC) against value added (VA), with value added obtained from the difference between total sales and other income (OUT) with expenses and costs. Structural Capital Value Added (STVA) is the ability of an organization or company to fulfil the company's routine processes and structures that support employee efforts to produce optimal intellectual performance and overall business performance, for example: company operational systems, manufacturing processes, organizational culture, management philosophy and all forms of intellectual property owned by the company (Sawarjuwono, 2003).

3. Result and Discussion

3.1. Description of Research Results

The results of the research and discussion are descriptions of the results obtained in the research which consist of the independent variables and the dependent variable. This research also includes data or information related to financial statements. The data obtained is the financial data of manufacturing companies listed on the Indonesia Stock Exchange, published from 2012 to 2016. This data is secondary data obtained from ICMD (*Indonesia Capital Market Directory*) in the form of balance sheets, income statements, and other data that supports this research. As well as the results of testing the regression assumptions and testing the hypothesis using the SPSS 18.0 data processing program. Descriptive analysis of the data taken for this study is from 2012 to 2016, namely as many as 41 company data. Variable descriptions in the observation descriptions used in this study include the minimum, maximum, mean and standard deviation values of the dependent variable, namely company performance and independent variables namely *Value-Added Capital Employed* (VACA), *Value Added Human Capital* (VAHU) and *Structural Capital Value Added* (STVA). Descriptive statistics are related to data collection and ranking. Descriptive statistics describe the sample used in this study. Statistics can be seen in the Table 1.

Table 1. Results of descriptive statistics

	Descriptive Statistics				
	N	Minimum	Maximum	Means	std. Deviation
Y	205	-63.57	140.74	15.5477	19.06594
X1	205	.313	99,502	26.6049	68.20019
X2	205	4,637	6.45	37.4743	28.36574
X3	205	7,267	35,525	.9678	.05550
Valid N (listwise)	205				

Source; processed secondary data.

The table 1 shows that the amount of data used in this study is 41 data samples taken from the annual published financial reports of manufacturing companies listed on the Indonesia Stock Exchange for the period 2019-2022. Based on the table above, during the observation period, the dependent variable, namely financial performance (Y), shows an average value of 15.5477 with a standard deviation of 19.06594. The smallest value of the company's performance was obtained at -63.57 which was owned by PT Toba Pulp Lestari Tbk in 2022 while the largest financial performance was owned by PT. Nippon Indosari Corpindo Tbk was 140.74 in 2018.

In this study variables independent, namely *Value Added Capital Employed* (X1) an average of 26.6049 with a standard deviation of 68.20019. The smallest value is 0.313 owned by PT Semen Indonesia (Persero) Tbk. in 2022 while the largest company owned by PT. Dharma Samudera Fishing Industries Tbk is 99,502 in 2018.

Value Added Human Capital (X2) is 37.4743 with a standard deviation of 28.36574. The smallest value is 4.637 owned by PT BISI International Tbk. in 2018 while the largest company owned by PT Astra Agro Lestari was 6.45 in 2020.

Structural Capital Value Added (X3) is 0.9678 with a standard deviation of 0.05550. The smallest value is 7.267 owned by PT Ultrajaya Milk Industry and Trading Company Tbk. in 2015. while the largest company is owned by PT. Dharma Samudera Fishing Industries Tbk. is 35,525 in 2020

3.2. Classic Assumption Test

Before testing multiple linear regression on the research hypothesis, it is necessary to conduct an assessment first to find out whether there is a violation of the classical assumptions. A good result of testing the hypothesis is a test that does not violate the classic assumptions that underlie the multiple linear regression model. The classic assumptions in this study include the normality test, multicollinearity test, and heteroscedasticity test.

3.2.1. Normality Test

The normality test aims to test whether the regression model, the dependent variable and the independent variables both have a normal distribution or not. A good regression model is to have a normal data distribution or close to normal. Methods that can be used for normality include: graphical analysis and statistical analysis. The normality test in this study was carried out by graphical analysis. Normality can be detected by looking at the distribution of data (points) on the diagonal axis of the graph or by looking at the histogram of the residuals:

If the data spreads around the diagonal line and follows the diagonal line or the histogram shows a normal distribution pattern (like a bell), the regression meets the normality assumption. If the data spreads away from the diagonal line and or does not follow the direction of the diagonal line or the histogram graph does not show a normal distribution pattern, then the regression model does not meet the assumption of normality. The following figure shows the normality test results for the three Food and Beverage Industry companies shown sequentially. This test was carried out using SPSS data processing with the plot area process.

Normal P-P Plot of Regression Standardized Residual

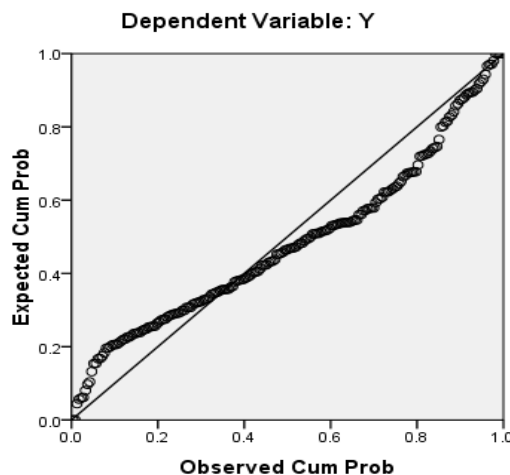


Figure 2. Normality Test

From the test results above, the dots spread around the line and follow the diagonal line making a regular wave pattern. So, it can be concluded that the residual values for this regression model are normal and fulfill the normality assumption where the data distribution is normal.

3.2.2. Multicollinearity Test

The problems that might arise in the use of multiple regression equations are *multicollinearity*, which is a condition where the independent variable is correlated with other independent variables or an independent variable is a linear function of the other independent variables. The existence of *multicollinearity* can be seen from the *tolerance value* or the *variance inflation factor (VIF)* value. If the *Variance Inflation Factor (VIF)* value is not more than 10 and the tolerance value is below 1 then the model is free from multicollinearity. The following shows the test results for Manufacturing Companies Registered on the Indonesian Stock Exchange using SPSS 18.

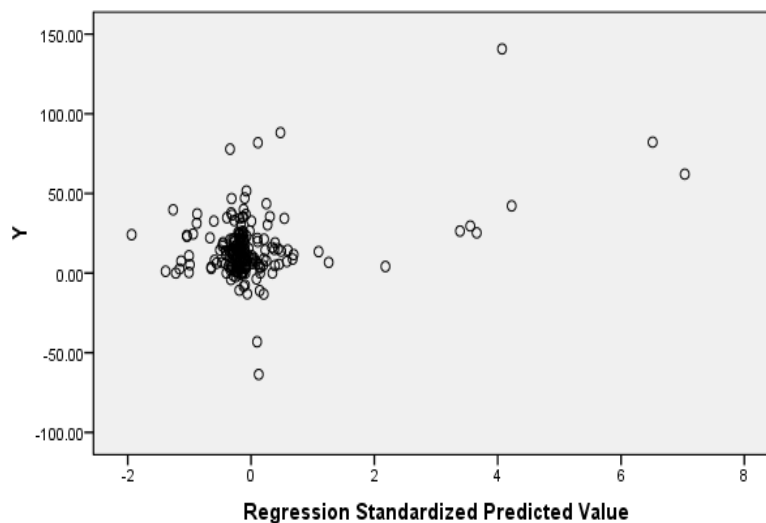
Table 2. Multicollinearity Test

Model	Tolerance	Collinearity Statistics	
		VIF	
1			
(Constant)			
X1	.955		1047
X2	.920		1,086
X3	.963		1,039

From the results of the data multicollinearity test above, the *Variance Inflating Factors* (VIF) values of the three independent variables are: *Value Added Capital Employed* (VACA) of 1.047, *Value Added Human Capital* (VAHU) of 1.086, and *Structural Capital Value Added* (STVA). of 1.039, where the three variables have VIF values less than 10 and tolerance values greater than 0.1. This indicates that the indication of the presence of multicollinearity in the equations performed or the relationship that occurs between variables can be tolerated so that it will not interfere with the regression results and is feasible to use.

3.2.3. Heteroscedasticity Test

The heteroscedasticity test aims to test whether in the regression model there is an inequality of variance from one residual observation to another. A good regression model is one that does not have heteroscedasticity. The test for heteroscedasticity can be detected by looking at the plot graph between the predicted value of the dependent variable (ZPRED) and its residual (SRESID). If the dots on the *scatter plot* form a certain regular pattern (eg wavy, widens then narrows), then it can be indicated that heteroscedasticity has occurred. Heteroscedasticity test results on Manufacturing Companies Listed on the Indonesia Stock Exchange. carried out in this study can be seen in the following figure

**Figure 3.** Heteroscedasticity test

Based on the *scatter plot* above, the points spread randomly and are scattered above or below or above the number 0 on the Y axis only. So in general it can be concluded that in this regression model there is no heteroscedasticity.

3.3. Multiple Regression Analysis

This study uses multiple linear regression analysis to test the hypothesis of independent variables, namely *Capital Employed* (VACA), *Value Added Human Capital* (VAHU) and *Structural Capital Value Added* (STVA). Multiple regression analysis was performed by comparing t_{count} with t_{table} and the significant value with α (*alpha*) proposed was 95% or $\alpha = 0.05$. In detail the results of multiple regression testing can be seen on Table 3.

Table 3. Multiple regression analysis

		Coefficients ^a					Collinearity Statistics	
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	tolerance	VIF
		B	std. Error	Betas				
1	(Constant)	-73,288	21,841		-3,356	.001		
	X1	.080	.019	.285	4,275	.000	.955	1047
	X2	-.090	.046	-.133	-1,963	.051	.920	1,086
	X3	93,070	22,800	.271	4,082	.000	.963	1,039

Based on the multiple regression equation model in this study it can be concluded as follows:

$$Y = -73.288 + 0.080X_1 - 0.090X_2 + 93.070X_3 + e$$

From the regression equation above, several things can be interpreted, including:

1. The constant value of the equation above is -73,288. This figure shows the level of financial performance obtained by the company if the levels are *Value Added Capital Employed* (VACA), *Value Added Human Capital* (VAHU) and *Structural Capital Value Added* (STVA). constant. This means that when the three variables are constant, the level of financial performance is negative.
2. Variable *Value-Added Capital Employed* (VACA) has a positive regression coefficient value of 0.080. The positive coefficient value indicates that the *Value-Added Capital Employed* (VACA) to the amount of financial performance has a positive effect. This illustrates that the company's performance value will increase by 0.080 *Value Added Capital Employed* (VACA), assuming other independent variables are held constant.
3. The *Value-Added Human Capital* (VAHU) variable has a regression coefficient value of -0.090 which has a negative effect. This means the value of financial performance. decreased with the assumption that the independent variable is -0.090.
4. The variable *Structural Capital Value Added* (STVA) has a regression coefficient value of 93,070. This regression coefficient indicates that STVA has a positive effect on financial performance. This means that the company's performance value will increase by 93,070, if the independent variables have a positive effect.

3.4. Coefficient of Determination (R^2)

The strength of the influence of the independent variables on the dependent variable can be known by the magnitude of the coefficient of determination which is between zero and one. The results of the analysis of the coefficient of determination can be seen in the Table 4.

Table 4. Determination Coefficient Test

Model	Summary Model ^b				
	R	R Square	Adjusted R Square	std. Error of the Estimate	Durbin-Watson
1	.384 ^a	.148	.135	17.73243	1,757

a. Predictors: (Constant), X3, X1, X2

b. Dependent Variable: Y

Based on the output table 4, the R square value is 0.148 or 14.8%. This means that this value indicates that the relationship between intellectual capital, namely *Value-Added Capital Employed* Variables (X1), *Value Added Human Capital* Variables (X2) and *Structural Capital Value-Added* Variables (X3) with financial performance. while the remaining 85.2% is influenced by other factors not examined in this study.

3.5. Hypothesis Test

a. F Test (Simultaneous Test)

Table 8. F test (simultaneous test)

		ANOVA ^b				
Model		Sum of Squares	df	MeanSquare	F	Sig.
1	Regression	10953.838	3	3651279	11612	.000 ^a
	Residual	63202.225	201	314,439		
	Total	74156063	204			

a. Predictors: (Constant), X3, X1, X2

b. Dependent Variable: Y

This test was conducted to see the effect of the independent variables together on the dependent variable. In this test we look at the effect of the *Value-Added Capital Employed* (VACA), *Value Added Human Capital* (VAHU) and *Structural Capital Value Added* (STVA) variables. together on the independent variables of financial performance. To find out whether the independent variable has a significant or not significant effect on the dependent variable, a probability of 5% ($\alpha = 0.05$) is used. This table shows the results of the F test yielding an F count of 11.612. Meanwhile, the value in the distribution table for the F value at a significance level is 2.65, *Value Added Human Capital* (VAHU) and *Structural Capital Value Added* (STVA.) have a linear and significant influence on financial performance. In other words, these independent variables simultaneously and significantly affect the dependent variable.

b. T-Test (Statistical Test)

The t test was carried out to find out whether there was a partial effect of each independent variable on the dependent variable. It can be seen in Table 6. The t test is used to test the first hypothesis to the third hypothesis. The results of the t test calculations can be seen as follows:

1) The Effect of Value Added Capital Employed (VACA) on Financial Performance.

Based on the test results, it is known that the *Value Added Capital Employed* (X1) variable has a coefficient of 3,945 with a significance of 0.000. The coefficient of the t-test results of VACA shows a significance level of 0.000 which is smaller than 0.05 (<5%), so it can be concluded that VACA has a positive and significant effect on financial performance. able to increase added value and contribute to the increase in company and share value. So the hypothesis (H1) *Value added Capital Employed (VACA) has a positive effect on performance received finances.*

2) The Effect of Value Added Human Capital (VAHU) on Financial Performance.

Based on the test results, it is known that the Variable *Value Added Human Capital* (X2) shows a t-test statistic of -1,963 with a significance of 0.051. The coefficient of the t test results from VAHU shows a significance level of 0.051 which is greater than 0.05 (> 5%). So it can be concluded that *Value Added Human Capital (VAHU)* partially has no significant effect on financial performance at the level of $\alpha = 5\%$. This has not succeeded in utilizing and maximizing the expertise, knowledge, abilities and thinking of employees to create added value. Value Added Human Capital (VAHU) has a negative effect on financial performance, thus this study was rejected.

3) The Effect of Structural Capital Value Added (STVA) on Financial Performance.

Based on the test results, it is known that the *Structural Capital Value Added Variable* (X3). shows a t-test statistic of 93.070 with a significance of 0.000. The coefficient of the t test results from STVA shows a significance level of 0.000 which is smaller than 0.05 (5%), so it can be concluded that *Structural Capital Value Added (STVA)*. Has a positive effect on financial performance at the level of $\alpha = 5\%$. This means that employees have high motivation to continue to innovate by developing existing infrastructure so that the company's performance is optimal in creating added value through the company. So that the hypothesis (H3) of *Structural Capital Value Added (STVA)* has a positive effect on financial performance, thus this research is accepted.

3.6. Discussion

Based on the results of research regarding the effect of intellectual capital on the performance of companies listed on the Indonesian stock exchange. It can be concluded through the results of the discussion as follows:

3.6.1. Effect of Value-added Capital Employed (VACA) on financial performance.

Value added Capital Employed (VACA) is a Value-Added Intellectual Coefficient component that provides real value. Capital Employed is a harmonious relationship/association network owned by a company with its partners, both from reliable and quality suppliers, from the company's relationship with the government and with the surrounding community. Value added Capital Employed (VACA) is a form of the company's ability to manage resources in the form of capital assets. With good management of capital assets, it is believed that companies can increase market value and company performance. Based on the results of this study which proves that Value added Capital Employed (VACA) has a positive and significant effect on financial performance. Based on the concept of resource-based theory and Knowledge Based View This gives the implication that with available funds the net profit owned by a manufacturing company listed on the Indonesia Stock Exchange can increase added value and contribute to increasing the company and share value. Showing that Value added Capital Employed (VACA) has a positive effect on the financial performance of manufacturing companies. This shows that Value Added Capital Employed (VACA) is the main resource for manufacturing companies to create added value in producing good company performance.

3.6.2. The Effect of Value-Added Human Capital (VAHU) on Financial Performance.

Value Added Human Capital (VAHU) is one component The Value-Added Intellectual Coefficient reflects the total value added to the company's total salary and wage costs. Human capital is a company's ability to manage human resources and consider humans or employees as a strategic asset for the company because of the knowledge they have.

This study found that Value Added Human Capital (VAHU) partially had no significant effect on financial performance. Based on the concept of resource-based theory and Knowledge Based View to be able to compete competitively with other companies, companies need human resources who could innovate and have skills. companies cannot create value added or net profit. Therefore, companies must be able to manage their employees and so that these employees do not leave the company. If the company has high human capital, it is expected that the company will certainly have high company performance as well. The results of this study are in accordance with research conducted by Yosi Metta Pramelasari (2010). Shows that Value Added Human Capital (VAHU) has no significant effect on the performance of companies owned by manufacturing companies with innovations that tend to use operational tools, so they are more likely to reduce human resources. As for other factors that can result in Value Added Human Capital (VAHU) not being able to provide added value to the company, such as a lack of utilization of quality human resources, lack of salary and benefits provided by the company to employees, lack of motivating employees to increase company revenue.

3.6.3. The Effect of Structural Capital Value Added (STVA) on Financial Performance.

Value Added Structural Capital (STVA) is the ability of an organization or company to meet the company's routine processes and structures that support employee efforts to produce optimal intellectual performance and overall business performance, for example: company operational systems, manufacturing processes, organizational culture, management philosophy and all forms of intellectual property owned by the company. An individual can have a high level of intellectuality, but if the organization has poor systems and procedures then intellectual capital cannot achieve optimal performance and its potential is not optimally utilized. The results of this study are that STVA has a positive and significant effect on financial performance. Shows that this research has succeeded in managing structural capital such as improve the company's operational system, maintain the corporate culture and cultivate intellectual property effectively. This means that employees have high motivation to continue to innovate by developing existing infrastructure so that the company's performance is optimal in creating added value through the company. In accordance with Knowledge Based Theory and Knowledge Based View which state that knowledge is one of the resources that must be managed by a company in order to gain a competitive advantage to increase returns for the company. Sawarjuwono and Kadir, 2003 Without being accompanied by good management, it will hinder employee productivity in generating value. added (Basyar, nd). the management being able to manage well will help improve company performance so that it can increase revenue at the company. The results of this study are in accordance with research conducted According to Chen et al, 2005 in Ulum, 2009, STVA is one of the VAIC component that reflects the book value of the company's net assets. This provides real value. Structural Capital shows the harmonious relationship that the company has with its partners, both from reliable and quality suppliers, loyal customers and satisfied with the company's services, as well as the company's relationship with the government and with the surrounding community. Building a sustainable socio-cultural program requires an organized program planning mechanism according to the Government's work plan so that synergy occurs between the work of the central government and the portion of local government. Based on the results of the analysis of determining the strategy for improving the socio-cultural aspects of the people of North Morowali district which will later be used as a basis in the strategy process of increasing the dignity

and dignity of the community from all aspects, the strategy resulting from this analysis will later be derived in a planned development program and based on the study of existing socio-cultural development policies. As an effort to further improve the competitiveness of the human resource development index in North Morowali Regency, there is a need for improvement in various fields such as population and family planning, health education, youth and sports, religion, culture, gender mainstreaming and women's empowerment as well as protection of human resources.

4. Conclusion

Based on previous research, after going through the stages of data collection, data processing, data analysis and finally the interpretation of the results regarding the effect of intellectual capital on the financial performance of manufacturing companies listed on the Indonesia Stock Exchange. Period 2012-2016, the authors can draw the following conclusions: Value Added Capital Employed (VACA) variable has a significant positive effect on financial performance. This is because if the company's internal parties consisting of company owners, managers or employees can manage financial funds consisting of company capital (equity) and profits (profit), it will indirectly result in good company financial performance. This can be seen from the increase in profits earned by the company every year. The variable Value-Added Human Capital (VAHU) partially has no significant effect on financial performance. This shows that manufacturing companies listed on the Indonesian Stock Exchange (IDX) have not succeeded in utilizing and maximizing the expertise, knowledge, capabilities and thought of employees to create added value for the company. The variable Structural Capital Value Added (STVA) has a positive and significant effect on financial performance indicating that this study has succeeded in managing structural capital such as improving the company's operational system, maintaining corporate culture and managing intellectual property effectively. This means that employee motivation is high to remain innovate by developing existing infrastructure so that the company's performance is optimal in creating added value through the company. Based on the conclusions and limitations described previously, some suggestions can be submitted as follows: The company is expected to be able to manage the resources and knowledge of employees to produce good performance for the development of the company. For further research, it is expected to increase the number of samples and use other analytical tools so as to obtain better results. Managers / company owners must be able to manage the organization optimally by utilizing the potential possessed by the company, especially the intellectual property of its human resources consisting of (Capital Employed, Structural Capital, and Human Capital), so that added value is created for the company.

References

- Afrifa, G. A., Tingbani, I., & Adesina, O. O. (2022). Stochastic frontier modelling of working capital efficiency across Europe. *Technological Forecasting and Social Change*, 184, 122012. <https://doi.org/https://doi.org/10.1016/j.techfore.2022.122012>
- Al-Omouh, K. S., Palacios-Marqués, D., & Ulrich, K. (2022). The impact of intellectual capital on supply chain agility and collaborative knowledge creation in responding to unprecedented pandemic crises. *Technological Forecasting and Social Change*, 178, 121603. <https://doi.org/https://doi.org/10.1016/j.techfore.2022.121603>
- Choyke, K. L., Cronin, C. E., Rodriguez, V., Gran, B. C., & Franz, B. (2022). An Organization's role in anchoring community health: How for-profit hospitals' balance corporate and social responsibility. *SSM - Qualitative Research in Health*, 2, 100037. <https://doi.org/https://doi.org/10.1016/j.ssmqr.2021.100037>
- Dahan, S. M., Taib, M. Y., Zainudin, N. M., & Ismail, F. (2016). Surveying Users' Perception of Academic Library Services Quality: A Case Study in Universiti Malaysia Pahang (UMP) Library. *The Journal of Academic Librarianship*, 42(1), 38–43. <https://doi.org/https://doi.org/10.1016/j.acalib.2015.10.006>
- Dang, V. T., & Wang, J. (2022). Building competitive advantage for hospitality companies: The roles of green innovation strategic orientation and green intellectual capital. *International Journal of Hospitality Management*, 102, 103161. <https://doi.org/https://doi.org/10.1016/j.ijhm.2022.103161>
- Farzaneh, M., Wilden, R., Afshari, L., & Mehralian, G. (2022). Dynamic capabilities and innovation ambidexterity: The roles of intellectual capital and innovation orientation. *Journal of Business Research*, 148, 47–59. <https://doi.org/https://doi.org/10.1016/j.jbusres.2022.04.030>
- Fehr, H. (2016). CGE modeling social security reforms. *Journal of Policy Modeling*, 38(3), 475–494. <https://doi.org/https://doi.org/10.1016/j.jpolmod.2016.02.007>

- Forney, J. (2021). Farmers' empowerment and learning processes in accountability practices: An assemblage perspective. *Journal of Rural Studies*, 86, 673–683. <https://doi.org/https://doi.org/10.1016/j.jrurstud.2021.05.021>
- Fung, S. Y. K., Raman, K. K., & Zhu, X. (Kevin). (2017). Does the PCAOB international inspection program improve audit quality for non-US-listed foreign clients? *Journal of Accounting and Economics*, 64(1), 15–36. <https://doi.org/https://doi.org/10.1016/j.jacceco.2017.04.002>
- Gao, J., Li, S., & Yang, H. (2022). Shared parking for ride-sourcing platforms to reduce cruising traffic. *Transportation Research Part C: Emerging Technologies*, 137, 103562. <https://doi.org/https://doi.org/10.1016/j.trc.2022.103562>
- Ghosh, J. (2022). “Holy curiosity of inquiry”: An investigation into curiosity and work performance of employees. *European Management Journal*. <https://doi.org/https://doi.org/10.1016/j.emj.2022.05.004>
- Goncharenko, G. (2021). In the spotlight: Rethinking NGO accountability in the #MeToo era. *Critical Perspectives on Accounting*, 102308. <https://doi.org/https://doi.org/10.1016/j.cpa.2021.102308>
- Kim, J. (Sunny), Milliman, J. F., & Lucas, A. F. (2021). Effects of CSR on affective organizational commitment via organizational justice and organization-based self-esteem. *International Journal of Hospitality Management*, 92, 102691. <https://doi.org/https://doi.org/10.1016/j.ijhm.2020.102691>
- Kusi-Sarpong, S., Mubarik, M. S., Khan, S. A., Brown, S., & Mubarak, M. F. (2022). Intellectual capital, blockchain-driven supply chain and sustainable production: Role of supply chain mapping. *Technological Forecasting and Social Change*, 175, 121331. <https://doi.org/https://doi.org/10.1016/j.techfore.2021.121331>
- Leffel, B. (2022). Climate consultants and complementarity: Local procurement, green industry and decarbonization in Australia, Singapore, and the United States. *Energy Research & Social Science*, 88, 102635. <https://doi.org/https://doi.org/10.1016/j.erss.2022.102635>
- Liang, R., Wang, J., Huang, M., & Jiang, Z.-Z. (2020). Truthful auctions for e-market logistics services procurement with quantity discounts. *Transportation Research Part B: Methodological*, 133, 165–180. <https://doi.org/https://doi.org/10.1016/j.trb.2020.01.002>
- Löhlein, L. (2016). From peer review to PCAOB inspections: Regulating for audit quality in the U.S. *Journal of Accounting Literature*, 36, 28–47. <https://doi.org/https://doi.org/10.1016/j.acclit.2016.05.002>
- Luck, S., & Schempp, P. (2022). Inefficient liquidity creation. *Journal of Financial Intermediation*, 100996. <https://doi.org/https://doi.org/10.1016/j.jfi.2022.100996>
- Mawejje, J. (2019). Natural resources governance and tax revenue mobilization in sub saharan Africa: The role of EITI. *Resources Policy*, 62, 176–183. <https://doi.org/https://doi.org/10.1016/j.resourpol.2019.04.001>
- Montes, G. C., Nicolay, R. T. da F., & Acar, T. (2019). Do fiscal communication and clarity of fiscal announcements affect public debt uncertainty? Evidence from Brazil. *Journal of Economics and Business*, 103, 38–60. <https://doi.org/https://doi.org/10.1016/j.jeconbus.2018.12.002>
- Muniesa, F., & Linhardt, D. (2011). Trials of explicitness in the implementation of public management reform. *Critical Perspectives on Accounting*, 22(6), 550–566. <https://doi.org/https://doi.org/10.1016/j.cpa.2011.06.003>
- Nettayanun, S. (2023). Asset pricing in bull and bear markets. *Journal of International Financial Markets, Institutions and Money*, 83, 101734. <https://doi.org/https://doi.org/10.1016/j.intfin.2023.101734>
- Pant, A., & Nidugala, G. K. (2022). Board characteristics and efficiency of value added by banks: Evidence from an emerging economy. *Journal of Asian Economics*, 79, 101455. <https://doi.org/https://doi.org/10.1016/j.asieco.2022.101455>
- Ruppen, D., & Brugger, F. (2022). “I will sample until things get better – or until I die.” Potential and limits of citizen science to promote social accountability for environmental pollution. *World Development*, 157, 105952. <https://doi.org/https://doi.org/10.1016/j.worlddev.2022.105952>
- Sainaghi, R., Phillips, P., & d'Angella, F. (2019). The balanced scorecard of a new destination product: Implications for lodging and skiing firms. *International Journal of Hospitality Management*, 76, 216–230. <https://doi.org/https://doi.org/10.1016/j.ijhm.2018.05.011>
- Shao, J., Hoshino, A., & Nakaide, S. (2022). How do floods affect insurance demand? Evidence from flood insurance take-up in Japan. *International Journal of Disaster Risk Reduction*, 83, 103424.

<https://doi.org/https://doi.org/10.1016/j.ijdr.2022.103424>

- Shchepkina, N., Meshkova, N., Goigova, M., Maisigova, L., & Tochieva, L. (2022). Intellectual capital as a factor in ensuring the competitiveness of the railway transport enterprises. *Transportation Research Procedia*, 63, 1444–1453. <https://doi.org/https://doi.org/10.1016/j.trpro.2022.06.155>
- Sun, K.-A., & Kim, D.-Y. (2013). Does customer satisfaction increase firm performance? An application of American Customer Satisfaction Index (ACSI). *International Journal of Hospitality Management*, 35, 68–77. <https://doi.org/https://doi.org/10.1016/j.ijhm.2013.05.008>
- Troise, C., Matricano, D., Sorrentino, M., & Candelo, E. (2022). Investigating investment decisions in equity crowdfunding: The role of projects' intellectual capital. *European Management Journal*, 40(3), 406–418. <https://doi.org/https://doi.org/10.1016/j.emj.2021.07.006>
- Wang, X., Zhou, M., & Shao, J. (2023). A risk-sharing mechanism for multi-region catastrophe insurance with government subsidies. *International Journal of Disaster Risk Reduction*, 103558. <https://doi.org/https://doi.org/10.1016/j.ijdr.2023.103558>
- Williams, P., Ashill, N. J., Naumann, E., & Jackson, E. (2015). Relationship quality and satisfaction: Customer-perceived success factors for on-time projects. *International Journal of Project Management*, 33(8), 1836–1850. <https://doi.org/https://doi.org/10.1016/j.ijproman.2015.07.009>
- Wintaka, D. C., Bijaksana, M. A., & Asror, I. (2019). Named-Entity Recognition on Indonesian Tweets using Bidirectional LSTM-CRF. *Procedia Computer Science*, 157, 221–228. <https://doi.org/https://doi.org/10.1016/j.procs.2019.08.161>
- Yeung, M. C. H., Ramasamy, B., Chen, J., & Paliwoda, S. (2013). Customer satisfaction and consumer expenditure in selected European countries. *International Journal of Research in Marketing*, 30(4), 406–416. <https://doi.org/https://doi.org/10.1016/j.ijresmar.2013.06.001>
- Zhang, Z., Wang, X., & Chun, D. (2022). The Effect of Knowledge Sharing on Ambidextrous Innovation: Triadic Intellectual Capital as a Mediator. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(1), 25. <https://doi.org/https://doi.org/10.3390/joitmc8010025>