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The Influence of Intellectual Capital on LQ45 Companies Performance

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Abstract

The development of science and technology has led to a shift in businesses from being labor-based to knowledge-based. Companies are expected to create value from the knowledge they possess, which includes their intangible assets. This study aims to examine the relationship between the intellectual capital and the companies' performance. Some of the previous studies have focused on a tool for measuring intellectual capital called value added intellectual capital (VAIC), which divides intellectual capital into VAHU, STVA, and VACA components. The study population consisted of all LQ45 companies, and a purposive sampling technique was used to select samples. The study used a quantitative approach and employs multiple regression analysis to analyze the data gathered from the financial reports of selected companies. The results indicated that both STVA and VACA have an impact on ROA, while only VACA has impact on TQ. This research creates an awareness among management to properly manage intellectual capital to enhance their overall organizational performance. Further studies may use different measures of intellectual capital and examine organizational performance under.

Keywords: Performance, Intellectual Capital, Organizational Performance, Selected Companies, LQ45 Companies.

1. Introduction

Various countries have begun transitioning from labor-based business to knowledge-based business due to the increasing advances in science and technology, which are increasing business competition. As the result, knowledge-based businesses offer higher levels of effectiveness and efficiency [1]. Company's prosperity is determined by its ability to create value from knowledge, not just relying on funding from the tangible assets [2]. Minister of Tourism and Creative Economy of Indonesia, Sandiaga Uno, has also emphasized the importance of raising awareness among the Indonesian public to transition to a knowledge-based economy [3].

Knowledge is included as one of the types of intangible assets that an entity could own according to the Financial Accounting Standard Statement (FAS) 19. Nowadays, intangible assets are also known as intellectual capital. Intellectual capital possesses unique characteristics and is difficult to imitate by competitors, making it valuable [4]. Intellectual capital is more difficult to measure compared to tangible assets [5]. Developed the measurement called the Value-Added Intellectual Capital (VAIC) which is capable of providing information on the efficiency level of value creation of both tangible and intangible assets owned by a company. The VAIC model consists of human capital, structural capital, and capital employed. Human capital is related to the quality and capability of the workforce within the company, including their creativity and competence [6]. Structural capital refers to the activities within the company to support its productivity [7]. Capital employed indicates the company's ability to establish relationships with stakeholders in obtaining physical capital to support its activities [8].

Intellectual capital can be used as an indicator to measure company's performance [9]. Performance describes the level of entity achievement in realizing its goals and objectives [10]. Evaluating company's performance based on its financial and market performance. Financial performance is evaluated through assessing the level of return on both assets and capital invested [11]. Market performance shows a company's achievements in its capital market and is evaluated based on the quality of its shares [12].

Several studies have been conducted to analyze the impact of intellectual capital on organizational performance using the VAIC model [13]. Intellectual capital significantly and positively affects companies' performance, where companies that manage their intellectual capital have better opportunities to improve their performance [14]. State that not all components in the VAIC model effect companies' performance, the results are still varied [15]. Intellectual capital does not significantly affect companies' performance. The conclusions from previous studies are inconsistent. This study conducts further analysis on how each VAIC component influences the companies' performance [16]. This study mainly focuses on the stakeholder theory that extends the responsibility of organizations to all stakeholders. Effective management of intellectual capital can improve company performance and provide value to its stakeholder.

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In the Indonesian capital market, various company's indices are applied, one of which is the LQ45 index. Companies listed in the LQ45 index are recognized by investors to have good performance. This leads to the responsibility to continuously improve the quality and maintain their business [17]. It was reported that LQ45-indexed companies experienced a growth increase of 23.7% in 2022. Such growth indicates the competitive advantage that these companies maintain and lead to the more intensive use of intellectual capital compared to non-LQ45 indexed companies [18]. The study focuses on LQ45-indexed companies, in the hope that a more comprehensive conclusion between intellectual capital and companies' performance can be reflected [19]. Intellectual capital is an aspect that is rarely disclosed by companies in Indonesia. It is hoped that this study can increase the realization of managers and business practitioners of the importance of intellectual capital [20].

2. Research Method

This is a quantitative research which utilizes numerical data that can be statistically analyzed to draw conclusions. The population in this study is comprised of all companies listed in the LQ45 index as determined by Indonesia stock exchange. The purposive sampling technique was employed, in which specific considerations were established. These criteria included companies that are constantly listed in the LQ45 index during period 2017 to 2021, presented their complete financial reports under Rupiah currency. Based on the sampling technique, 18 companies under five years of study were selected to support this study. The data will be analyzed under multiple linear regression, which will first be tested using classic assumptions tests. The study will produce two multiple linear regression equations for the two dependent variables. IBM SPSS Version 26 will be used as the tool to process the data. Intellectual capital is an intangible asset that is highly important in the era of information and knowledge. The intellectual capital model developed places great emphasis on a company's ability to create additional value (VA) from each component. The formula of VA is shown below (1):

$$VA = D + A + OP + EC \quad (1)$$

Where D is depreciation. A is amortization. OP is operating profit. EC is employee costs. The components of intellectual capital include the following: Human Capital (HC) is defined as a set of skills and knowledge possessed by the people in the company, that enables the company to have collective capability to generate solutions and make decisions. Human capital can increase the company's value. This relationship is known as the VAHU (value-added human capital), which indicates how much a company's value will increase with the amount of funds spent on the company's human resources. The formula of VAHU is shown below (2).

$$VAHU = VA/HC \quad (2)$$

Where VA is value added and HC is the total of salaries for commissioners, labors, staffs, employees, including the pension. Structural Capital (SC) refers to the knowledge center of a company, which includes technology, various works produced by employees, company systems, and other related resources. Structural capital encompasses a broader scope, such as hardware, software, datasets, organizational structure, and even company intellectual property rights. In summary, structural capital emphasizes a company's ability to support the efforts of employees and all involved parties to work optimally. The relationship between structural capital and company's value is known as STVA (structural capital value-added), which measures how much structural capital can influence the value of the company. The formula of STVA is as shown below (3).

$$STVA = SC/VA \quad (3)$$

Where SC is obtained through the subtraction of VA and HC and VA is value added. Capital Employed (CE): identifies the value added by a company's physical capital unit. Capital employed as the amount of capital owned by a company that can support its activities. The relationship between capital employed and company's value is known as VACA (value-added capital employed), which measures how a company's value is created by its financial capital within the company. The formula of VACA is shown below (4).

$$VACA = VA/CE \quad (4)$$

Where VA is value added and CE is the total equity owned by the company. For the dependent variables, this article focuses on measuring financial performance and market performance. Financial performance refers to the financial condition that is measured through the calculation of financial ratios. One of the indicators of good financial performance is profitability. To achieve profitability, a company requires resources to support its operational activities. Therefore, one of the indicators that measure financial performance is return on assets (ROA). The formula of ROA is shown below (5).

$$ROA = \frac{\text{net income}}{\text{total assets}} \text{ x } 100\% \quad (5)$$

Market performance is reflected in a company's value based on the calculation of the company's stock price in the stock market. Market performance can be measured through Tobin's Q Ratio (TQ), this ratio measures the relationship between a company's market value and its net worth. The TQ formula is shown below (6).

$$TQ = \frac{BV\ TA - BV\ OS + MV\ OS}{BV\ TA} \quad (6)$$

Where BV TA is book value of total assets. BV OS is book value of ordinary shares. MV OS is market value of ordinary shares.

VAHU compares the value added to human capital. The higher the VAHU, the higher the return on the

company's assets. The higher the cost that a company spends on its employees, the higher the expected productivity and the resulting improvement in the company's financial performance. VAHU is a factor that influences the companies' ROA. Based on these descriptions, the formulated hypothesis as follows H_1: VAHU affects ROA. STVA is a measure of a company's ability to encompass its infrastructure, routines, information system, cultures, and processes. STVA can increase the company's value if it's managed effectively. STVA affects the companies' ROA. Based on these descriptions, the formulated hypothesis as follows H_2: STVA affects ROA.

VACA is derived by assessing the extend of value-added generated from the total equity held by the company. Physical investment can provide a return for the company, the company will become more competitive. All expressed the same conclusion that a company with high VACA, the ROA will also be high. Based on these descriptions, the formulated hypothesis as follows H_3: VACA affects ROA.

Companies with high VAHU also indicate intensive employee skill development, and this increases the company's stock value under TQ assessment. All in line with the opinion that VAHU affects TQ. Based on these descriptions, the formulated hypothesis as follows H_4: VAHU affects TQ. STVA that consists of company's structure, culture, and procedures need to maintained well to achieve better market performance. Some other studies expressed the same conclusions. Based on these descriptions, the formulated hypothesis as follows H_5: STVA affects TQ. VACA that defines companies' physical assets need to be managed well so that they could achieve good market performance. All agree that VACA has impacted the company's TQ. Based on these descriptions, the formulated hypothesis as follows H_6: VACA affects TQ. Based on the explanations above, presented below the research model of the study on Figure 1.

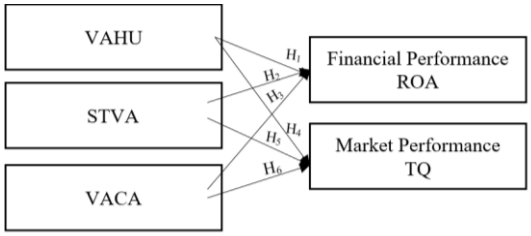

Figure 1. Research Model

There are four classic assumptions tests that are conducted before conducting the multiple regression analysis. The first test in normality test that aims to determine whether the data distribution in the research is normal or not using the Kolmogorov-Smirnov Method. Multicollinearity test is a test conducted to ensure that independent variables are independent to each other under the number of its tolerance and variance inflation factor (VIF) number. Autocorrelation test aims to ensure that there is no correlation between disturbances in the linear regression model between research periods under Durbin Watson (DW) test. Lastly is the heteroscedasticity test that aims to determine whether there is inequality in the variance of residuals between observations in the research regression model under Glejser test.

Multiple regression analysis was described to examine the individual effects of independent variables in the research model on its dependent variables under certain conditions: if the significance value is lower than 0.05, independent variable partially influences the dependent variable. If the significance value is greater than or equal to 0.05, it indicates that the independent variable partially has no impact on dependent variable.

3. Result and Discussion

Intellectual Capital on Financial Performance. The results from conducting the classic assumption tests are shown below Table 1.

Table 1. Classic Assumption Tests, Y = ROA

No	Type of Test	Criteria	Results
1	Normality	Asymp. Sig > 0.05	Asymp. Sig. = 0.76
2	Multicollinearity	VIF ≤ 10 Tolerance ≥ 10	VAHU VIF = 5.289 Tolerance = 0.189 STVA VIF = 4.629 Tolerance= 0.216 VACA VIF = 1.449 Tolerance= 0.690
3	Autocorrelation	du < d du < 4-du	1.7582 < 2.237 2.237 < 4-1.7582
4	Heteroscedasticity	Sig > 0.05	VAHU Sig = 0.183 STVA Sig = 0.816 VACA Sig = 0.323

The Normality test uses the Kolmogorov-Smirnov method to show Asymp. Sig. of the data is 0.76 and is greater than 0.05, thus the data is already normally distributed. All independent variables are free from multicollinearity as all data shows VIF ≤ 10 and Tolerance ≥ 0.01. The overall data is safe from the autocorrelation under DW method cause the d (2.237) > du and d (2.237) < 4-du, du is the information from the DW table (a = 5% and k = 4). The data is also free from heteroscedasticity since all independent variables are proven to have sig higher than 0.05. Multiple Regression Analysis, Y = ROA on Table 2.

Table 2. Multiple Regression Analysis, Y = ROA

Variable	Criteria	Sig	Decision
VAHU	Sig < 0.05	0.661	H_1 is rejected
STVA	Sig < 0.05	0.000	H_2 is accepted
VACA	Sig < 0.05	0.000	H_3 is accepted

Based on table 2, that shows the results of multiple regression analysis, it can be concluded that VAHU does not affect ROA due to the sig 0.661 > 0.05, which

indicates that H_1 is rejected. The sig value of STVA is 0.000 < 0.05, indicating that H_2 is accepted where STVA partially effects ROA. The sig value of VACA is 0.000 < 0.05, indicating that VACA partially affects ROA. Intellectual Capital on Market Performance. Presented below the results of classic assumption tests of the data on Table 3.

Table 3. Classic Assumption Tests, Y = TQ

No	Type of Test	Criteria	Results
1	Normality	Asymp. Sig > 0.05	Asymp. Sig. = 0.82
2	Multicollinearity	VIF ≤ 10 Tolerance ≥ 10	VAHU VIF = 5.289 Tolerance = 0.189 STVA VIF = 4.629 Tolerance= 0.216 VACA VIF = 1.449 Tolerance= 0.690
3	Autocorrelation	du < d du < 4-du	1.7582 < 2.237 2.237 < 4-1.7582
4	Heteroscedasticity	Sig > 0.05	VAHU Sig = 0.825 STVA Sig = 0.204 VACA Sig = 0.560

From table 3, it can be concluded that the data is normally distributed under Kolmogorov-Smirnov method with the Asymp. sig value 0.82 > 0.05. All independent variables in the study are free from multicollinearity as all variables have VIF ≥ 10 and tolerance ≤ 0.01. The overall data is free from autocorrelation under DW method (the du is the number from the DW table with a= 5% and k = 4). It can be seen that 1.7582 < 1.814 and also 1.814 < 4-1.7582. Lastly, the data is also free from heteroscedasticity as all independent variables has higher sig than 0.05. Next, the data is analyzed under the multiple regression analysis, with the results as shown below on Table 4.

Table 4. Multiples Regression Analysis, Y = TQ

Variable	Criteria	Sig	Decision
VAHU	Sig < 0.05	0.195	H_4 is rejected
STVA	Sig < 0.05	0.897	H_5 is rejected
VACA	Sig < 0.05	0.000	H_6 is accepted

Based on the table 4 above, the significance value for VAHU is 0.195 > 0.05, leading to the rejection of H_4, so that VAHU has no impact on TQ. STVA with the significance value of 0.897 > 0.05, resulting in the rejection of H_5 where STVA has no impact on TQ. VACA has the significance value of 0.000 < 0.05, supporting the H_6 that indicates that VACA impacts the TQ.

Based on the results, out of three intellectual capital components, VAHU has no impact on ROA. State that VAHU partially does not affect ROA. VAHU does not have the impact on ROA possibly due to the sample companies not maximizing the skills and potential of their employees to improve their financial performance. Companies tend to count on machines for their daily operational routines rather than maximizing the potential of their employees. Meanwhile, STVA is the second component of intellectual capital that affects ROA. STVA affects the ROA as the companies with good organizational structure, effective procedures and systems, also advanced technology tends to manage their activities well, thereby affecting the level of ROA obtained by the company. The third component of intellectual capital, VACA, also has an impact on ROA. This finding indicates that sample companies can manage all their capital effectively and efficiently to generate profits. LQ45-indexed companies in Indonesia have realized the importance of efficient utilization of financial capital towards high financial performance.

Intellectual Capital on TQ. Based on the results, VAHU also has no impact on the companies' TQ. State VAHU partially has no impact on TQ. Investors do not consider the competency and capability of the workforce in their investment decisions. The sample companies' efforts to develop employees' skills cannot explicitly increase the company's stock value. STVA as the second component of intellectual capital also shows no impact on TQ. STVA does not impact the company's TQ. This indicates that the efficiency of the company's structure and system does not affect investors' investment decisions as it does not affect the company's market value. The stock market's performance is emphasized in the stock's market value. VACA is the only component of the intellectual capital that affects TQ. VACA affects the TQ of a company. The sample companies can maximize their assets to produce growth which also leads to good market value. Therefore, the company should increase its investment in the physical and non-physical assets to maximize the TQ value.

4. Conclusion

The research indicates that LQ45 companies in Indonesia have not fully optimized all components of intellectual capital to improve their performance. The components of intellectual capital that affect ROA are STVA and VACA, while the only component that affects TQ is VACA. The companies can recognize the importance of managing assets, but still ineffectively maintain the costs of employees incurred. Researcher suggests that LQ45 companies in Indonesia need to enhance the quality of their intellectual capital by developing employees' skills, providing suitable training, implementing technology, establishing constructive procedures within the company (such as whistleblowing regulations), and other activities so that the intellectual capital can contribute better to improve the companies' performance. This research still focuses

on the VAIC model, future studies could measure intellectual capital using other models, such as the International Federation of Accountants (IFAC) model. Company performance can also be proxied with different ratios such as ROE and PBV Ratio, analyzing different objects, and extending the research time horizon.

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