

# The Role of Intellectual Capital and Management Ownership on Financial Performance

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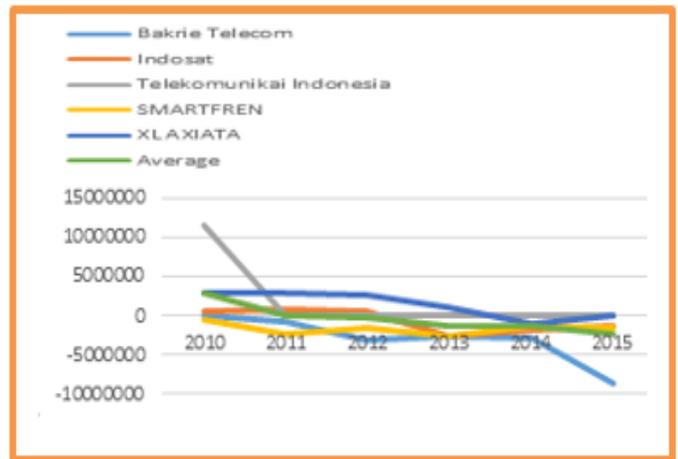
**Abstract**—This study aims to analyze the effect of intellectual capital and managerial ownership on financial performance. The research was conducted in the information technology sector that was listed on the Indonesia Stock Exchange in 2010-2015. This research uses quantitative verification method and regression to analyzed. Intellectual capital is measured by value added intellectual capital developed by Pulic [1]. Managerial ownership is the percentage of share ownership by management. The results showed that both partially and simultaneously the intellectual capital and management ownership had a positive effect on financial performance by 35.7%.

**Keywords**—*intellectual capital management ownership; financial performance*

## I. INTRODUCTION

Financial performance is one measure of the organization in achieving its objectives. Performance assessment can be interpreted as a determinant of the operational effectiveness of an organization periodically. Torkamani explains that organizations are basically operated by human resources, then performance appraisal is actually an assessment of human behavior in carrying out roles in the organization [2]. Financial performance is very important because it is used as the basis for determining the value of return for owners.

However, based on the financial performance of the telecommunication companies above, the performance that is expected to provide comparable returns is not achieved. Whereas if it refers to the broader users of telecommunication/market services, the financial performance of telecommunications companies should improve. The data shows that for the last 6 (six) years from 2010 to 2015, the average financial performance of telecommunications companies has decreased significantly.



Source: IDX (processed).

Fig. 1. Financial Performance on Telecommunication Companies (in millions rupiah).

To improve the performance of telecommunication sector companies, it is necessary to have adequate intellectual capital to innovate, which can increase the market, which in turn can improve financial performance. According to Sangkala resource-based theory explains the existence of two views regarding the set-up of corporate strategy [3]. The first is a market-based view and, second, a resource-based view. The development of the two devices produces a new view, namely a knowledge-based view.

Therefore, companies increasingly emphasize the importance of knowledge assets. Many companies are increasingly aware of the importance of knowledge assets as a form of intangible assets. According to result of previous research there is a very real impact on intangible assets, even from the results of his study concluded that executives begin to lose confidence in the historical data of financial statements and start using additional information for the purposes of strategic decision making. In other words, traditional accounting, which has been used for the past 500 years as the basis for financial reporting, has failed to adapt to economic changes, especially in knowledge asset reporting needs.

Chen, et al. stated that Intellectual capital is a measurable resource for increasing competitive advantages so that it can

contribute to the company's financial performance [4]. Intellectual capital is believed to play an important role in increasing corporate value and financial performance. Value Added Intellectual Coefficient (VAICTM) is the most popular method in intellectual capital measurement developed by Pulic [1]. VAICTM is a method used to measure the efficiency of the added value obtained from the company's intellectual capabilities. The use of VAICTM in intellectual capital studies has been widely used by several countries in the world, both in developed and developing countries.

Pulic in Tan et al. developed "Value Added Intellectual Coefficient" (VAICTM) to measure company IC [1,5]. VAICTM is an analytical procedure designed to enable management, shareholders and other relevant stakeholders to effectively monitor and evaluate the efficiency of value added with the company's total resources and each of the main resource components. Efficiency of added value aims to improve financial performance. Previous research related to intellectual influence on financial performance empirically was demonstrated by Harianto and Nono, Arvian and Rukniati [6], Kuryanto, Syafruddin [7], and Rehman et al. [8] that intellectual capital has a positive effect on financial performance. But the research of Firer and William states that there is no positive influence between intellectual capital and company performance [9].

In addition to intellectual capital, another thing that is thought to affect the performance of telecommunication companies is listed on the Indonesia Stock Exchange (IDX), namely the ownership structure. Shares that are not owned by management will separate the agent (manager) and principle (owner). The Principal gives a mandate to the agent to run the business for his benefit. According to Anthony and Govindarajan agency relations occur when the principal agrees to use other parties (agents) to carry out some services in carrying out the interests of the principal [10]. A threat to shareholders if the manager acts for his own interests, not for the benefit of the shareholders. In this condition each party has its own interests so that agency problems arise.

The relation of ownership structure with financial performances has been examined by Ming-Hsiang [11], Yulius and Yaterina [12] and which concludes that managerial ownership has a positive effect on financial performance. However, different results were obtained by Ardianingsih which showed that there were negative effects of managerial ownership on company performance [13].

Based on the explanation above, the research hypothesis developed is:

- H1, Intellectual Capital has a positive effect on the company's financial performance.
- H2, Management Ownership has a positive effect on company performance.
- H3, Intellectual capital and ownership have a positive effect on company performance.

## II. METHOD

The research design in this study uses descriptive analysis with a quantitative approach and comparative causal research. The object of this research is ownership structure, intellectual capital, and financial performance. The data used in this study is secondary data

### A. Population and Sample

The population in this study are telecommunications companies that are listed on the Indonesia Stock Exchange (IDX) totaling 6 companies. The sampling technique used is non-probability sampling with a purposive sampling approach with sample criteria are companies that completed publish their financial statements in 2010-2015.

TABLE I. RESEARCH SAMPLE

| No | Company                      |
|----|------------------------------|
| 1  | Bakrie Telkom Tbk            |
| 2  | Indosat Tbk                  |
| 3  | Smartfren Telekom Tbk        |
| 4  | Telekomunikasi Indonesia Tbk |
| 5  | XL Axiata Tbk                |

### B. Variabels

There are three variables in this study, namely:

1) *Intellectual capital*: According to Ikhsan, intellectual capital is the total value of a company that describes the company's intangible assets derived from three pillars, namely human capital, structural and customer [14].

Pulic in Tan et al. developed "Value Added Intellectual Coefficient" (VAICTM) to measure company IC [1,5]. VAICTM.

TABLE II. COMPANIES VALUE ADDED INTELLECTUAL COEFFICIENT

| Company                      | VAIC     |          |          |          |          |          |
|------------------------------|----------|----------|----------|----------|----------|----------|
|                              | Year     |          |          |          |          |          |
|                              | 2010     | 2011     | 2012     | 2013     | 2014     | 2015     |
| Bakrie Telecom               | 1.124932 | -0.92781 | -10.6798 | -4.09412 | -5.95101 | -17.5163 |
| Indosat                      | -1.41439 | 1.973145 | 1.635356 | 0.306132 | 4.789515 | 2.656852 |
| PT. Telekomunikasi Indonesia | 4.316516 | 3.846187 | 4.199084 | 4.371265 | 4.262863 | 4.012877 |
| Smartfren                    | 2.7093   | -14.254  | -4.96298 | -5.92291 | -1.59074 | -5.35652 |
| XL Axiata                    | 5.28258  | 21.47167 | 4.924759 | 1.648931 | 6.99453  | 2.195841 |

$$VAIC^{TM} = VACA + VAHU + STVA$$

options owned by a manager and commissioner of the company [15].

2) *Management ownership*: According to Melinda managerial ownership as a percentage related to stocks and

TABLE III. MANAGEMENT OWNERSHIP

| Company                      | Management Ownership |         |         |         |         |          |
|------------------------------|----------------------|---------|---------|---------|---------|----------|
|                              | Year                 |         |         |         |         |          |
|                              | 2010                 | 2011    | 2012    | 2013    | 2014    | 2015     |
| Bakrie Telecom               | 0                    | 0       | 0       | 0       | 0       | 0        |
| Indosat                      | 0.34046              | 0.03257 | 0.02853 | 0.04434 | 0.04544 | 0        |
| PT. Telekomunikasi Indonesia | 0.01442              | 0.01626 | 0.00314 | 0.01066 | 0.00800 | 0.001828 |
| Smartfren                    | 0                    | 0       | 0       | 0       | 0       | 0        |
| XL Axiata                    | 0                    | 0       | 0       | 0       | 0       | 0        |

3) *Financial performance*: The company's financial performance is an achievement obtained by the company in a certain period that reflects the level of condition of the company [4].

TABLE IV. RETURN ON ASSET (IN MILLION RUPIAH)

| Company                      | ROA        |            |            |            |            |            |
|------------------------------|------------|------------|------------|------------|------------|------------|
|                              | Year       |            |            |            |            |            |
|                              | 2010       | 2011       | 2012       | 2013       | 2014       | 2015       |
| Bakrie Telecom               | 0.012782   | -0.06764   | -0.36317   | -0.28981   | -0.37837   | -3.583     |
| Indosat                      | 0.0122529  | 0.0178735  | -0.008826  | 0.0489071  | -0.0348893 | -0.0210058 |
| PT. Telekomunikasi Indonesia | 0.1156493  | 0.1501155  | 0.1648753  | 0.1585763  | 0.1522126  | 0.1403176  |
| Smartfren                    | -0.3126528 | -0.1951963 | -0.1090036 | -0.1597368 | -0.0776523 | -0.0756021 |
| XL Axiata                    | 0.1060963  | 0.0907938  | 0.0779747  | 0.0256424  | -0.013987  | -0.0004306 |
| Mean                         | -0.0131744 | -0.0008098 | -0.0440988 | -0.0628477 | -0.070538  | -0.7079449 |

### III. RESULTS

#### A. Classical Assumption Test Results

1) *Normality test*: The normality test in this study uses Kolmogorov - Smirnov (K-S) with criteria: If the probability value is greater than 0.005 (> 0.05) then the data is normally distributed and vice versa. The test results show that variable intellectual capital, ownership structure and financial performance are normally distributed, because the probability value is 0.972, which means that it is greater than 0.05 (0.972 > 0.05) so that it can be continued to perform regression and hypothesis testing.

2) *Heterocedasticity test*: The right regression equation is if there is no heteroscedasticity The test is done by using the Glejser test with criteria: If the probability of significance is <0.05 then heteroscedasticity occurs. Whereas, if the probability of significance of the independent variable is above 0.05, there is no symptom of heteroscedasticity. The heteroscedasticity test results with the Glejser method can be seen in the following figure:

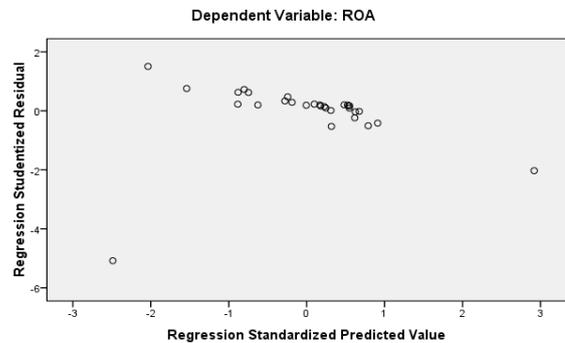


Fig. 2. Scatterplot.

The test results show the points spread randomly, do not form a pattern, and spread both above and below zero on the Y-axis. It can be concluded that heteroscedasticity did not occur in the regression model. Thus, this model is suitable to be used to predict the financial performance of information technology sector companies based on ownership structure and intellectual capital and is suitable to be used for subsequent analysis

3) *Multicollinearity test*: Multicollinearity testing uses tolerance value and variance inflation factor (VIF). If the tolerance value is > 0.10 or equal to VIF value < 10 then there is no multicollinearity, and if the tolerance value is < 0.10 or equal to VIF value > 10 then there is a multicollinearity that cannot be tolerated so that the variable must be removed from the regression model so that the result that is not unusual.

Where the tolerance level on the VAIC variable is 1.0 and the VIF level is 1.0 <10. Likewise, the tolerance level ownership variable is 1.0 and the VIF level is 1.0 <10. Then it can be concluded that there are no multicollinearity symptoms between the independent variables in this study

4) *Autocorrelation:* The autocorrelation test was carried out by the Durbin-Watson (DW) test. Based on table 5 bellow, shows the D-W value of 1.954 which means  $-2 < 1.954 < +2$ . So it can be concluded that there are no autocorrelation symptoms in this study.

TABLE V. AUTOCORRELATION TEST

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|-------|-------------------|----------|-------------------|----------------------------|---------------|
| 1     | .598 <sup>a</sup> | 0.357    | 0.31              | 0.55367                    | 1.954         |

<sup>a</sup> Predictors: (Constant), VAIC, management ownership.

<sup>b</sup> Dependent Variable: ROA.

5) *Multiple Linear Regression Analysis:* After testing the classic assumption, the next step is to do multiple regression analysis. This multiple regression analysis is carried out to find out whether there is an influence between independent variables (x) on the dependent variable (y). the results obtained are as follows

TABLE VI. MULTIPLE REGRESSION

| Model |                      | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig.  |
|-------|----------------------|-----------------------------|------------|---------------------------|--------|-------|
|       |                      | B                           | Std. Error | Beta                      |        |       |
| 1     | (Constant)           | -0.184                      | 0.106      |                           | -1.742 | 0.093 |
|       | VAIC                 | 0.055                       | 0.014      | 0.593                     | 3.842  | 0.001 |
|       | Management ownership | 0.854                       | 1.65       | 0.08                      | 0.518  | 0.609 |

<sup>a</sup> Dependent Variable: ROA.

From the table above, it can be seen that  $\beta_1$  is 0.055 the value of  $\beta_2$  is 0.854. Based on these values, the regression equation can be formed as follows:

$$ROA = (-0.184) + 0.055(VAIC) + 0.854(\text{Management Ownership}) + e$$

From the regression equation, it can be seen in the Beta coefficient in table 4 where  $\beta_1$  is 0.55. This means that  $\beta_1 > 0$   $\beta_2$ , so hypothesis 1,  $H_0$  is rejected and  $H_a$  is accepted, namely there is a positive influence of intellectual capital on the financial performance of the company. Similarly, it can be seen that  $\beta_2$  is 0.854 which means that  $\beta_2 > 0.55$ , so that in hypothesis 2,  $H_0$  is rejected and  $H_a$  is accepted, meaning that there is a positive influence on the ownership structure of the company's financial performance.

6) *Statistical test F:* Referring to Table 8, a significant number of F is 0.003, referring to the criterion of significant numbers  $0.003 < 0.05$ , so  $H_0$  rejected. Decision making can also be done by comparing the calculated F value, with the F table value. The F table value is 4.20, it can be seen that the F-

statistic value or F count> from the F table is  $7.5 > 4.20$ , then  $H_0$  is rejected. Thus the intellectual capital and management ownership variables simultaneously have a significant effect on financial performance.

TABLE VII. ANOVA

| Model |            | Sum of Squares | df | Mean Square | F   | Sig.              |
|-------|------------|----------------|----|-------------|-----|-------------------|
| 1     | Regression | 4.598          | 2  | 2.299       | 7.5 | .003 <sup>a</sup> |
|       | Residual   | 8.277          | 27 | 0.307       |     |                   |
|       | Total      | 12.875         | 29 |             |     |                   |

<sup>a</sup> Predictors: (Constant), Management ownership, VAIC.

<sup>b</sup> Dependent Variable: ROA.

7) *Determination coefficient:* The table above presents the R-squared value of 0.357 or 35.7%. This means that the company's financial performance can be explained by the independent variables namely intellectual capital and ownership structure of 35.7% and the remaining 64.3% is determined by other variables not analyzed in this study.

#### IV. DISCUSSION

##### A. The influence of Intellectual Capital on Financial Performance

Intellectual capital is a measurable resource for increasing competitive advantages so that it can contribute to the company's financial performance [4]. Intellectual capital is the sum of what is produced by three main elements of an organization (human capital, structural capital, and customer capital) related to knowledge and technology that can provide more value to the company in the form of organizational competitive advantage.

Based on the results of the testing that has been done, states that the hypothesis taken by the researcher, namely intellectual capital with added value using the VAIC method can be accepted. This is based on the results of the research that the value of  $\beta_1$  is 0.055 which means that when the intellectual capital value increases, it will have an impact on improving the financial performance of the company. This research is in line with the research of Firer and Williams, Chen et al. and Ulum which show that intellectual capital has a positive relationship with company performance [4,9,16]. Unlike the research of Firer and William which states that there is no positive influence between intellectual capital and company performance [9].

##### B. The Influence of Management Ownership on Financial Performance

The ownership structure is believed to be able to influence the course of the company so that it can affect the company's performance in achieving its objectives. So that the achievement of performance can maximize the value of the company. This is due to the control they have [17]. The composition of share ownership has an important impact on the company's control system.

Based on the results of the tests that have been carried out, namely in Table 4. There are results which state that  $\beta_2$  is worth 0.854 which means that the ownership structure has a positive effect on the company's financial performance can be accepted. In line with the research of Mc Connel and Servaers who found that managerial ownership has a positive effect on company performance [18]. But it is not in line with the research of Bayrakdarogu et al. in Yulius, and Ardianingsih which shows that there is a negative influence of managerial ownership on company performance [12,13].

### C. *The influence of Intellectual Capital and Management Ownership on Financial Performance*

Companies that are committed to continuously innovating and developing products will certainly continue to improve the quality of their human resources as reflected in Intellectual Capital (IC). Currently, the concept of IC is increasingly widely known because it can provide competitive advantages for companies.

According to Saleh, et al. ownership structure reflects parties who have the power to determine policies as guidelines for the board of directors in running the company [19]. So that with management ownership in the company will suppress agency issues. Management who is also the owner of the company will be able to bridge the interests of the owner because they share interests.

The results of the analysis using multiple regression analysis show that the ownership structure and intellectual capital simultaneously affect the company's financial performance. Thus the results of the F Test analysis show that the ownership structure and intellectual capital simultaneously affect the dependent variable, namely the company's financial performance. This research is in line with Ayu Sekar's research which concluded that ownership structure and intellectual capital have a positive effect on company performance [20].

## V. CONCLUSION

The study concludes that Intellectual Capital and management ownership partially and simultaneously affect the financial performance of the 5 (five) telecommunication companies listed on the Indonesia Stock Exchange for the 2010 financial year to 2015.

Based on the limitations of the research related to the time lag between Intellectual Capital and Financial Performance, the next research suggestion is to do research using time lags and use on a broader sector and also increase research time period as well as other indicators related to company performance such as Return on Equity or Return on Investment so as to get compared.

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