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INTELLECTUAL CAPITAL AND EARNINGS QUALITY: DO THEY CONNECT?

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Abstract

The main objective of this research is to look at the relationship between intellectual capital and earnings quality in Indonesian banks. Intellectual capital is measured by using EVAIC+, where the indicators consist of Human Capital Efficiency (HCE), Structural Capital Efficiency (SCE), Relational Capital Efficiency (RCE), and Capital Employed Efficiency (CEE). Earnings quality is measured using discretionary accruals and earnings persistence. Furthermore, this study also looks at whether there is a difference in the effect of intellectual capital on earnings quality based on the type of bank, in this case, State-Owned and Private Banks. The objects of this study were eight banks, consisting of four state-owned banks and four private banks, and this study examines a total of 112 banking samples in Indonesia. The researcher used the Partial Least Square Multigroup technique to analyses this study, with research data for 2006 - 2019. The results showed that intellectual capital was essential for influencing banking earnings in Indonesia. This study also shows that the intellectual capital analyses separately between state-owned and private banks has a significant and positive effect on earnings quality, meaning that the type of bank does not moderate the effect of the independent variables on the dependent variable in this study. This study recommends more budget allocation to intellectual capital to create quality profits in banks in Indonesia.

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1. Introduction

Financial Services, as one of the top performers of the national economy, show sustainable growth (Losada-Otalora et al., 2020). Data for the first quarter of 2019 showed that the financial services and insurance sectors contributed 4.34% of Indonesia's overall Gross Domestic Product (GDP) at current prices according to the field of business (Badan Pusat Statistik, 2020). The growth in the distribution of bank funds, growth in net profit, and growth in banking assets also consistently positively impacted the national economy. The financial services sector has the potential to advance and grow sustainably with policies to increase the value of knowledge-based economy-based. In the future the company will no longer depend on natural resource wealth alone, but will begin to shift to knowledge-based wealth and human intellectuals.

Banking growth is undoubtedly reflected in the financial performance of banking companies. Financial performance is one measure of a bank's performance. A bank's financial performance is a measure of what is happening in the banking industry in relation to the economy. The better a bank's financial performance, the more likely it is to use and manage all its resources as effectively and efficiently as possible (Rajindra et al., 2021). The leading indicator of banking financial performance, which serves as a benchmark for the banks themselves, is profit. Bank profit shows the ability of banks to benefit and become an indicator of banks meeting obligations for funders. Also, both internal and external users use profit as a signal that shows a company's performance (Alhadab & Al-Own, 2019).

From 2006-2019, it is seen that the banking sector in Indonesia showed a positive expansion rate in each period. It was found that during the period 2006-2019, the average growth rate of total income reached 11.58% annually, total assets recorded an annual growth rate of 14.79%, and Indonesia's net banking income increased by an average of 19.54% annually.

The increase in profits generated by banks shows that the traditional commercial banking sector is performing well. This is because net income is the key to measuring a bank's financial performance indicators. Financial statement users can use earnings information to manage operating performance, assess bank risk, assess profitability, and forecast future earnings (Utami et al. 2020). Reported bank profits should be of high quality as they are often referenced by investors when making investments. Measures of earnings quality can be seen based on persistence, where quality earnings are persistent earnings that are sustained earnings, not transitory and more permanent (Harymawan & Nurillah, 2017; Purwaningsih & Kusuma, 2020). Sustainability as a quality of return is determined by its usefulness in decision-making, especially in equity valuation (Givoly et al., 2008). As a value-added bank, the quality of earnings will be positive. Earnings-oriented tendencies are undoubtedly recognized by management, so managers typically decide how to use the earnings or earnings in financial statements to benefit the company. The method is usually referred to as earnings management (Alhadab et al., 2020; Sial, 2018). According to Schipper (1986), earnings management is an intervention activity with specific objectives in the external financial reporting process to obtain some benefits.

Meanwhile, to survive the increasingly fierce competition, banks must change their ways of doing business, from businesses based on labor to knowledge-based businesses. The company's management needs to transform its resources towards a competitive level (Cross, 2018; Mahmood et al., 2018). The change in resources characterized by economics to be based on science with the application of knowledge management, the prosperity of a bank will depend on creating transformation and capitalization of knowledge itself; this causes knowledge and technology-based Capital to become more critical (Cabrita et al., 2017; Sawarjuwono & Kadir, 2003). This code shows that intellectual capital is the tool used to determine the bank's value. Bank management needs to pay attention to intellectual capital to increase the value of the bank. A study by Akkas & Asutay (2022) shows that Intellectual Capital, measured by human Capital, structural Capital, and capital employed, significantly improved banking performance.

Intellectual Capital (IC) itself is one of the intangible assets. Intellectual capital can act based on knowledge and perform valuable resources (Ulum et al., 2017)). Intellectual capital contributes to being able to add value to banks. Through intellectual capital, companies can identify the total intangible and knowledge-related resources that organizations use to create value (Tumwebaze, Bananuka, Alinda, & Dorcus, 2020). New economic developments are driven by knowledge and information, so intellectual capital becomes more important (Duho, 2020; Tan et al., 2007). An area of concern for several practitioners and academics is the benefit of intellectual capital as a tool for determining bank values (Guthrie et al., 2001; Tan et al., 2007). IC research is a challenge that

requires development and is highly dependent on bank resources and capabilities. Globalization and technological innovation have brought a new perspective to the business world that the prosperity of banking depends on the creation, transformation and capitalization of knowledge known as intellectual capital (Ousama et al., 2020).

In the context of the importance of profit in evaluating a company's performance and the importance of IC for knowledge-based economic growth, IC is fundamental to minimizing the occurrence of yield management practices. From a knowledge base perspective, IC is more likely to contribute to bank performance and is more likely to outperform material resources (Reed et al., 2006). Unlike physical resources (which are generic, easy to imitate, and can be easily bought and sold on the open market), only the all-encompassing intellectual capital-based resource is a source of competitive advantage (which is scarce and worth it). Therefore, creating competitive advantage and long-term value for efficient IC management is more important than tangible assets, especially in a knowledge-intensive industry like banking.

Resource Based Theory (RBT) is a very applicable theory to illustrate the importance of IC (Ulum, 2015). The RBT was first put forward by (Wernerfelt, 1982) in his article a Resource Based View of the Firm, which combines Selznick's ideas and Penrose's (1959) work on the definition of the firm as a system of productive resources' (Ulum et al., 2017). According to (Ulum et al., 2016), from the Intellectual Capital perspective, the company's intangible assets are classified into several main categories: human Capital, structural Capital, and customer capital. The categorization of IC perspectives is relevant to what is referred to in RBT (Ulum et al., 2017). According to Resources Based Theory (RBT), IC qualifies as a unique resource that creates a competitive advantage that creates value for your business. This value is reflected in the company's increasingly optimized performance (Ulum, 2015).

Meanwhile, Stakeholder Theory advertises efficient, practical, ethical, and effective ways to manage organizations in highly complex and turbulent environments (Freeman, 1984; Freeman et al., 2010). Stakeholder Theory says that: "between the management or company and stakeholders must establish a good relationship in any form. Management is expected to undertake activities deemed necessary by stakeholders and to report those activities to stakeholders as a form of accountability (Freeman et al., 2010). In this case, the management is responsible for providing stakeholders with accurate and quality profit information. Quality profit is a critical aspect of evaluating the health of a company's financial statements, where all stakeholders, whether investors, creditors, or other users of financial statements, often use these financial statements.

In this study, the object is financial services, especially banks collected in conventional banks. In Indonesia itself, based on share ownership by Law No. 19 of 2003, banks are divided into two. The first group is banking, with > 51% share of ownership being banks owned by the state. Meanwhile, besides the state-owned banks, the second group is private banks. More specifically, this study compares state-owned and private banks in looking at the differences in the effect of intellectual capital on earnings quality between the two bank groups. The eight objects of this study are banks that fall into the same category of core capital ownership, namely Bank Negara Indonesia, Bank Rakyat Indonesia, Bank Mandiri, and Bank Tabungan Negara. At the same time, the Private Banks that were the object of research were Bank Central Asia, Bank Bukopin, Bank CIMB Niaga, and Bank Bukopin.

Previous studies have explained that there is a significant influence between intellectual capital variables on earnings quality and financial performance. Research by Darabi (2012) stated that intellectual capital and human resource components significantly positively impact earnings quality. It can be concluded that intellectual capital has a positive role in financial practice and reporting (La Torre et al., 2018) explained that there was a significant influence between intellectual capital and company profit predictions. Parast, Delkhak & Jamshidi (2013) also explained that there was a significant influence between intellectual capital and earnings stability in the company. Furthermore, Zanjirdar & Chogha (2012) stated that there is a positive and significant influence between IC and income predictability because employee competency, mental agility, and vision have essential effects on the estimation and predictability of the current year's income.

Alhadab & Al-Own (2019) showed that earnings quality shown through discretionary loan loss provision / DLLP positively affects current and future operational performance (return on assets and return on equity). Although there are slight differences, Ma & Ma (2017) also provide empirical evidence that low earnings quality is identical to high company performance for public companies. Al-Musali & Ku Ismail (2016) also proves a powerfully positive and significant influence between VAIC and the two financial performance indicators: ROA and

ROE, of commercial banks in all countries. These findings are also supported by Zarei et al. (2014), who state that capital structure and human capital efficiency have a significant and positive effect on the financial performance of banks. Also, the first delay in physical capital's efficiency has a positive and significant effect on ROA, ROE, and ATO. The final results show that intellectual capital's influence on bank financial performance is positive and significant.

Based on the introduction and problems mentioned above, the hypothesis of this study is:

H_1: Intellectual Capital has a significant effect on Earnings Quality

H_2: The type of bank moderates the effect of Intellectual Capital on Earnings Quality.

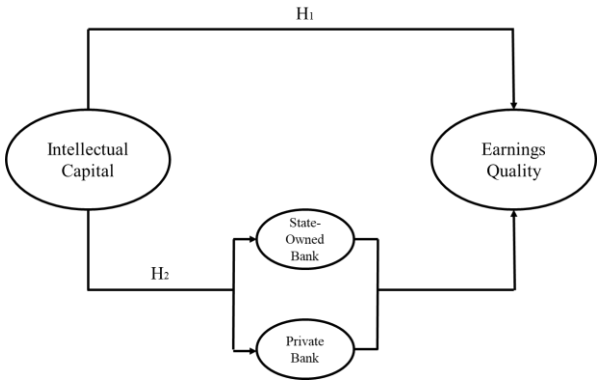

Fig. 1. Research Hypotheses

2. Methods

The objects of this study were eight banks, consisting of 4 state-owned banks and four private banks, and this study examines a total of 112 banking samples in Indonesia.

The direction of this study was to analyze the effect of the independent variables (intellectual capital) on the dependent variable (earnings quality), where the researchers used Partial Least Square (PLS) analysis. PLS Analysis analyzes the indirect and direct effects of a set of exogenous (independent) variables on the endogenous (dependent), where both endogenous and exogenous are latent variables (unobserved variables). By using this PLS analysis, it will also be known how much the ability of the indicator to represent latent variables (Ghozali & Latan., 2015)

Furthermore, this study looks at whether there is a difference in the effect of intellectual capital on earnings quality based on different types of banks, in this case, state-owned banks and private banks. This research uses multigroup analysis to analyze the difference between state-owned and private banks. Multigroup analysis, often called multi-sample analysis, aims to compare data analysis based on sample characters with two or more data sets. The trick is to compare each sample's path coefficient and the significance of the statistics obtained through the bootstrapping procedure (Henseler, 2015). Moderator variables are in the form of categories, such as the type of ethnic bank. Comparisons between groups or categories conduct moderated impact tests. Testing of categorical moderator variables is performed by multigroup analysis (PLS-MGA) (Ghozali and Latan, 2015). The step is to analyze each group, take the path coefficient values and standard errors for each group as input, and compare the data for each sample group (Ghozali and Latan, 2015). The path coefficients for each subsample are then compared and tested for significance by the Smith-Satterthwait test (Ghozali and Latan, 2015). This research uses the following formula to calculate t-statistics:

$$t = \frac{Pathsample1 - Pathsample2}{\sqrt{SE^2sample1 + SE^2sample2}}$$

Source: Ghozali and Latan, 2015

Note:
Path sample 1 = path coefficient for group 1
Path sample 2 = path coefficient for group 2
SE sample 1 = standard error coefficient value for group 1
SE sample 2 = standard error coefficient value for group 2

Intellectual capital measurement using the formula from Pulic (1998), later developed by Ulum (2017), is relevant to research samples in the banking sector. To measure intellectual ability and its utilization in a company efficiently or not, Pulic (2004) developed a Value Added Intellectual Coefficient (VAIC) model, which later by Ulum (2017) was developed into EVAICPlus. Intellectual capital indicators were obtained as follows:

a. Human capital efficiency (HCE)

Human capital efficiency (HCE) shows the contribution made by each rupiah invested in Human Capital (HC) in increasing value added (VA). HCE is measured by dividing the value of VA obtained by HC (salary and employee benefits). Value added is the difference between total net sales and other income - expenses and other costs (other than employee salaries). The HCE formula is as follows:

$$HCE_i = VA_i/HC_i$$

Source: Ulum (2016)

b. Structural Capital efficiency (SCE)
Structural Capital efficiency (SCE) shows how much Structural Capital (SC) contributes to value creation (Ulum, 2016). SCE is calculated from the Process Capital (PC) and Innovation Capital (InC) components. PCs are calculated through depreciation and amortization expenses. InC is calculated by the cost of Research and Development (R&D) according to the following formula:

$$SCE_i = InC_i/VA_i + PC_i/VA_i$$

Source: Ulum (2016)

c. Relational Capital Efficiency (RCE)
Relational Capital Efficiency (RCE) is measured using marketing costs. According to Osinga et al. in Basgoze and Sayin (2013), the value of a company depends on the company's marketing activities, so marketing costs are directly proportional to performance. The following formula calculates the RCE value:

$$RCE_i = RC_i/VA_i$$

Source: Ulum (2016)

d. Capital employee efficiency (CEE)
Capital employed efficiency (CEE) uses employed capital to generate value-added or value-added. The calculation is done by dividing the value of VA by total equity or company equity as a proxy for CE.

$$CEE_i = VA_i/CE_i$$

Source: Ulum (2016)

Earnings quality variables are measured through discretionary accruals and earnings persistence indicators. Discretionary accruals with the model of Beaver and Engel (1996) with the following steps.

a. Look for the estimated coefficient values by performing the following regression equation.

$$E_{it} = \boldsymbol{\beta}_{0it} + \boldsymbol{\beta}_{1it}E_{it-1} +$$

Source: Beaver dan Engel (1996)

Note:
TAit = Total accrual (NIit – CFOit)
NIit = Net income company I during period t
CFOit = Cash flow from operating activities of the company i period t
Coi = Loans written off (Loan charge-offs) are reflected from the foreclosed properties, considering the collateral for deleting bad loans with the surrender of collateral.
Loanit = Loans outstanding
NPAit = Non-performing assets (problematic productive assets) based on current collectibility, substandard, doubtful, and loss. This NPA ratio compares problematic productive assets with their total productive assets.
ΔNPAit +1 = Difference in non-performing assets one year in the future with non-performing assets t.

a. Calculate the value of non-discretionary accruals by substituting the estimated coefficient values according to the following equation

$$NDA_{it} = T_A - (\beta_0 + \beta_1 CO_{it} + \beta_2 Loan_{it} + \beta_3 NPA_{it} + \beta_4 \Delta NPA_{it+1})$$

Source: Beaver dan Engel (1996)

b. Calculating the discretionary accruals value with the following formula

$$DA_{it} = TA_{it} - NDA_{it}$$

Source: Beaver dan Engel (1996)

Source:
TAit is total accrual calculated by the allowance for possible losses on earning assets (PPAP), NDAit is non-discretionary accruals, and DAit is discretionary accruals.

Second, the earnings quality variable is measured through earnings persistence. The persistence of earnings arrest income sustainability; persistent income is considered desirable because they are recurring (Francis, 2004). Earnings consistency is consistent through Sloan's model with the following formula.

$$TA_{it} = \beta o + \beta_1 Co_{it} + \beta_2 Loan_{it} + \beta_3 NPA_{it} + \beta_4 \Delta NPA_{it} + e_{it}$$

Source: Richardson et al., 2005)

Where Eit is the earnings (accounting profit) of the company i in year t, whereas Eit-1 is the

accounting profit (earnings) of the company i before year t, then β0 is a constant, and β1it becomes the persistence of accounting earnings. Suppose the earnings regression coefficient (β1it) > 1, then the persistent high. If the earnings regression coefficient (β1it)> 0, then persistent. At variance with, if the earnings regression coefficient (β1it) ≤ 0, then it is not persistent and fluctuating (Francis et al.2004). Data in this research is obtained from Indonesian banking financial statements, and data is presented by naming net income in the bank's annual report.

3. Results and Discussion

3.1 Testing of All Banks

Significance testing is used to test whether there is an influence of exogenous variables on endogenous variables. The test criteria state that if the value of statistics ≥ t_{table} (1.96) or probability ≤ level of significance α = 5%, then exogenous variables have a significant influence on endogenous variables. The results of the significance test can be known through the following table:

Exogenous	Endogen	Path Coefficient	SE	t_{stat}	Sig (α)
IC	*EQ*	0,615	0,042	14,656	0,000

Table 1 Hypothesis Testing Results in Direct Effect

The effect of intellectual capital on earnings quality produces a $t_{statistics}$ value of 15,134 and a probability of 0,000. The test results show that the value of statistics> 1.96 or probability <level of significance α = 5%. It means that intellectual capital has a significant effect on earnings quality. The test results show that the direct effect coefficient of intellectual capital on earnings quality of 0.530 states that intellectual capital has a positive and significant effect on earnings quality. It means that better intellectual capital can increase earnings quality.

3.2 State-Owned Bank Testing

Similar to testing the overall bank data, the next step is to analyze per bank type. The first stage is to analyze state-owned banks. The results of the significance test can be known through the following table:

Exogenous	Endogen	Path Coefficient	SE	t_{stat}	Sig (α)
IC	*EQ*	0,523	0,032	16,532	0,000

Table 2 Hypothesis Testing Results in Direct Effect of State-Owned Banks

The influence of State-Owned Bank capital and intellectual capital on the earnings quality of State-Owned Banks produces a $t_{statistics}$ value of 16,532 and a probability of 0,000. The test results indicate that the value of statistics> 1.96 or probability <level of significance α = 5%. It means that intellectual capital has a significant influence on the earnings quality of State-Owned Banks. From these results, it can be informed that the direct effect coefficient of intellectual capital on earnings quality of 0.523 states that intellectual capital has a positive and significant effect on the earnings quality of State-Owned Banks. It means that better intellectual capital can increase earnings quality.

3.3. Private Bank Testing

Furthermore, after the State-Owned Banks, further analysis is carried out on the Private bank group. The results of the significance test can be known through the following table:

Exogenous	Endogen	Path Coefficient	SE	t_{stat}	Sig (α)
IC	*EQ*	0,530	0,035	15,134	0,000

Table 3 Hypothesis Testing Results for the Direct Effect of Private Banks

The effect of private bank intellectual capital on the earnings quality of private banks produces a $t_{statistics}$ value of 14,656 and a probability of 0,000. The test results indicate that the value of statistics> 1.96 or probability <level of significance α = 5%. It means that intellectual capital has a significant influence on the earnings quality of private banks. The direct effect coefficient of private bank intellectual capital on private bank earnings quality is 0.615 states that intellectual capital has a positive and significant effect on the earnings quality of private banks. It means that better intellectual capital can increase the earnings quality of private banks.

3.4 Multigroup Testing

After testing the PLS on the state-owned bank group and the private bank group, the coefficient and standard error of the effect of intellectual capital influence on earnings quality per group,

from the results of testing the hypothesis of direct influence, then the calculation is using the Smith-Satterthwait test formula. From these calculations, the results obtained as set out in Table 4.

Type of Banks		Effect IC -> EQ
State-Owned Bank	Coefficient	0.523
	SE	0.032
Private Bank	Coefficient	0.615
	SE	0.042
Multigroup Testing	SE	0.053
	t	-1.735

Table 4 Multigroup Testing Results The Effect of IC on EQ

The moderation test on the effect of intellectual capital on earnings quality produces a t value of -1.735. The test results indicate that the value of | t-test | <1.96. It shows that the two channels do not differ significantly between the State-Owned Banks group and the private bank group, so it can be concluded that the type of bank is not a moderating variable of influence between intellectual capital on earnings quality.

The results of this study mean rejecting the second hypothesis, that is, the type of bank moderates the effect of intellectual capital on earnings quality. It shows that the effect of intellectual capital on earnings quality in the state and private banks is the same, and there is no difference. Based on the knowledge-intensive nature of banking, based on the results of this study, both state-owned and private banks provide the best intellectual capital to produce quality profits for companies. Investments in intellectual capital such as human resources, research and development, marketing, and others will significantly and positively impact quality profits, both in state-owned and private banks.

4. Conclusion

The intellectual capital variable has a significant positive effect on earnings quality. It means that better intellectual capital tends to increase earnings quality significantly. This study's results reinforce the resourced-based theory, where companies with unique resources (intellectual capital) will achieve a competitive advantage. Intellectual capital as a unique resource can create value for the company. Added value for this company is in the form of increasingly optimal performance within the company. The results of this study further strengthen previous research on the effect of significant intellectual capital on earnings quality, such as research from Zanjirdar & Chonga (2012).

This type of bank does not moderate the effect of intellectual capital on earnings quality. It shows no difference between the effect of intellectual capital on earnings quality in state-owned and private banks. The results of this study reject the fourth hypothesis that intellectual capital influences earnings quality moderated by the type of bank. This study shows that the effect of intellectual capital on earnings quality in the state and private banks is the same, and there is no difference. Based on the knowledge-intensive nature of banking, both state-owned and private banks provide the best quality of their intellectual capital to produce quality profits for companies. The company's investment in intellectual capital, such as human resources, research and development, marketing, and others, will significantly impact quality profits, both in state-owned and private banks.

This research suggests that banks in Indonesia, both state-owned banks and private banks, pay more attention to their intellectual capital. It is because that empirically proven intellectual capital can have a positive and significant effect on the quality of banking profits in Indonesia. Quality profit is essential because profit is an important component of the company, requiring reporting on quality earnings for each company.

This research has research limitations, only conducting research from the 2006 - 2019 period due to the consideration of the pandemic conditions causing banking financial reports to experience severe fluctuations. Further research can continue this research by extending the research year by including the year after the COVID-19 pandemic.

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