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The moderating effect of income diversification on intellectual capital and company performance: Case study of banking in Indonesia

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Abstract

Purpose – This research aims to examine the influence of intellectual capital on company performance, analyze the moderating effect of revenue diversification, and provide additional insight into intellectual capital.

Design/methodology/approach – This research uses 38 banks in Indonesia that are listed on the Indonesia Stock Exchange (BEI) out of a total of 47 banks as research samples. The collected data was analyzed using linear regression and moderated regression analyses to test the effect of intellectual capital on company performance and the moderating impact of income diversification on intellectual capital and company performance.

Findings – The results of the regression analysis show that intellectual capital (VAIC) has a positive effect on company performance. In contrast, income diversification is having a moderating impact on intellectual capital and company performance. The intellectual capital component has varying influences on company performance. Whereas VACA has a positive effect on company performance, VAHU also has a positive effect on company performance. In contrast, STVA does not affect company performance. Based on the moderation test, income diversification does not moderate the relationship between intellectual capital components and company performance.

Research limitations/implications – This research uses the VAIC method to measure intellectual capital using financial report benchmarks. Future researchers should consider using new techniques that are more accurate and comprehensive in measuring intellectual capital. Thus, further research will provide a more precise picture of intellectual capital's influence in improving banking companies' performance.

Practical implications – This research shows that banking activities with an intellectual capital orientation tend to improve company performance. So, it is recommended for banking companies to utilize and develop the intellectual capital they have.

Originality/value – This research provides an understanding of intellectual capital. This research also contributes to developing economic theory related to intellectual capital and company performance.

Keywords: Banking, firm performance, intellectual capital, income diversification

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Introduction

Increasingly competitive business competition requires companies to continue to innovate to maintain their position. Currently, capital in the form of money or tangible assets alone cannot support the company's position (Siska et al., 2022). Before technology developed as rapidly as it does today, the principal capital required by a company was capital that looked like money or other tangible assets. However, as time goes by, capital in the form of tangible assets alone is not enough. Still, intangible assets called intellectual capital are also needed to add value to the company (Asare et al., 2020). Capital in the form of intangible assets is referred to as intellectual capital. When a company has developed and begun implementing a knowledge-based economy, the company becomes dominant. Proponents of science-based resource theory assume that intellectual capital is a particular and rare resource (Githaiga, 2023). In the modern economic concept, intellectual capital can support innovation, as well as competitiveness and company sustainability, which can increase added value, making the company a priority compared to its competitors (Pertiwi & Suhartini, 2022; Soetanto & Liem, 2019). Intellectual capital can also be defined as skills, experience and abilities in managing information that can be used to improve company performance (Alvino et al., 2021).

The banking industry as an intermediation institution, has played an essential role in global economic progress. However, as time goes by, banking does not only provide savings and loan services. Still, it has developed into a business offering non-interest financial services such as derivative transactions, financial guarantees, investments and foreign exchange transactions (Uniamikogbo et al., 2020). This change in the banking business model is driven by competition, forcing banks to look for alternative business activities to maintain their income and competitive advantage (Githaiga, 2022). However, diversifying revenue too high can disrupt capital stability and increase company risk, so managers need to find an optimal balance for investing in intellectual capital components and market expansion (Githaiga, 2022; Nguyen et al., 2023).

As an industry that focuses on service and is based on knowledge, banking companies rely heavily on non-physical assets, especially when developing the latest financial innovations and bank operations currently integrated with information and communication technology (ICT). In addition, banking usually involves direct interaction with customers whose expectations change over time. This shows that banks must be innovative and evolve to meet changing needs. Thus, the effective use of intellectual capital becomes increasingly essential for the success of banking companies (Githaiga, 2022).

Research conducted by (Duho & Onumah, 2021; Ni et al., 2020) revealed that capable employees can increase innovation through services that satisfy customers, thereby increasing company value. A similar statement was also expressed by Siska et al. (2022), who revealed that intellectual capital positively affects company value. Supported by (Asare et al., 2020; Soetanto & Liem, 2019), intellectual capital positively affects company performance. Apart from improving performance in intellectual capital companies, it can also improve the quality of assets owned by banks, predominantly intellectual capital in the human resources and capital structure components. Similar results, which stated that intellectual capital positively affected company performance, were also expressed by Ousama et al. (2020). Although the average intellectual capital is lower than in other studies, the positive influence on financial performance is evident. The findings also show that human resources (HC) are higher than capital employed (CE) and capital structure (SC). This study reveals that capital structure (SC) has an insignificant influence on the financial performance of Islamic banks compared to CE and HC.

Research by (Anik, 2021; Ocak & Fındık, 2019) even found that balanced intellectual capital with good corporate governance can improve a company's financial performance and ultimately increase its value. Research by Cenciarelli et al. (2018) states that intellectual capital can improve company performance, preventing companies from the risk of default and avoiding bankruptcy.

Even though it is considered capital that can support innovation, research conducted by Riyani et al. (2022) found that the absence of standard disclosures regarding the application of intellectual capital means that companies cannot fully disclose intellectual capital. Intellectual capital is long-term capital, so the impact will be visible if observed over an extended period. This

argument is also supported by Alvino et al. (2021) research results, but research by Weqar et al. (2021) which observes the influence of intellectual capital on financial sector companies in India found that intellectual capital did not affect company performance even though the observation period was ten years, that is from 2009 to 2019. Weqar et al. (2021) also revealed that the effectiveness of intellectual capital did not affect the performance of companies due to other factors, including lack of training, development and proper management of human resources. Apart from that, companies also still use physical resources to develop their business. Tarigan & Hadiprajitno (2022) added that intellectual capital does not positively affect company value. This could be due to the absence of mandatory disclosure of intellectual capital.

From earlier research, it can be concluded that intellectual capital will influence company performance only if it uses and maximizes the intellectual capital to diversify income in knowledge-intensive sectors. Apart from that, the effectiveness of the influence of intellectual capital is also influenced by the company's strategy in developing intellectual capital. However, whether intellectual capital can improve company performance is still uncertain because several studies have revealed that intellectual capital does not affect company performance.

Research by Githaiga (2022), which examined the effect of intellectual capital on company performance with income diversification as moderation in banking in East Africa, found that income diversification measured using the Herfindahl Hirschman Index (HHI) can moderate the components of intellectual capital measured using VAIC (HCE, SCE, and CEE). However, it will reduce the impact when measured by the overall VAIC. Research by Nguyen et al. (2023) found that income diversification strengthens the relationship between capital used, human resources and capital structure on company performance. Still, when tested with the overall intellectual capital variable, income diversification weakens the relationship between intellectual capital and bank performance. Based on earlier research, the influence of intellectual capital on company performance found inconsistent results, some studies found that intellectual capital affected company performance, but others found that intellectual capital did not affect company performance. So, the statement that intellectual capital can influence company performance cannot be fully agreed upon because several studies have found different results.

This research will examine the influence of intellectual capital on company performance in the banking sector in Indonesia and explore the moderating role of income diversification. This research aims to add to the literature regarding the influence of intellectual capital on company performance by including a moderating variable, namely income diversification, to test whether income diversification can moderate the relationship between intellectual capital and company performance because there is still little research that discusses the moderating effect of intellectual capital.

Literature Review and Hypotheses

Intellectual Capital

Intellectual capital is an asset that focuses on areas such as management, technology and information, sociology and accounting. All knowledge covering all people in the organization including databases, organizations and procedures in the organization can also be considered intellectual capital (Anik, 2021). Majumder et al. (2023) reveals that intellectual capital is an intangible asset. This asset includes knowledge, skills, experience, and employee and management relationships. Intellectual capital is an important part of innovation and development that can help companies survive business competition (Jeandry & Fajriyanti, 2023). Intellectual capital is an invisible asset, so it cannot be recorded in the balance sheet, especially if the intellectual capital is developed internally, but this does not mean it cannot be measured because all costs used in developing intellectual capital are included in the financial balance sheet (Ulum, 2022). Until now, there are no patent provisions regarding how to disclose intellectual capital. The method often used to measure intellectual capital is a concept developed by Pulic (1998) known as the value added intellectual coefficient (VAIC).

Income Diversification

Revenue diversification is a company strategy to increase sources of income so that it does not depend on just one source of income. Other factors such as improving performance, reducing risk, and business competition also force banks to diversify income (Octavianus & Fachrudin, 2022; Ovi et al., 2020), proven in Luu et al. (2020) research that income diversification can increase profitability company. To better manage risk, diversification of income sources is highly recommended (Sharma & Anand, 2018). Pertiwi & Suhartini (2022) stated that diversifying can reduce risk. This has encouraged many banks to implement income diversification strategies. However, excessive income diversification activities can also increase bank risks. So, stakeholders must find the right approach to diversify income so that it does not have a negative impact on the company.

Company decisions in diversification strategies tend to be influenced by intellectual capital and human resources. Companies with high intellectual capital tend to be careful in implementing income diversification strategies and focus on solid sources of income (Duho & Onumah, 2019). The effectiveness of income diversification in the banking industry is influenced by several factors, such as the size of the bank, type of bank (conventional or sharia), economic conditions and bank concentration (Luu et al., 2020; Octavianus & Fachrudin, 2022). The banking sector can divide income into interest and non-interest income. As time goes by, banks' revenue comes from interest income and non-interest income. Banks carried out this effort to anticipate decreased income from interest rate margins (Githaiga, 2023).

Hypotheses Development

According to Majumder et al. (2023) company performance refers to the profits a company can obtain to provide added value for shareholders and other stakeholders. Several factors influence company performance, including the work environment and corporate governance (Aydoğmuş et al., 2022). Other factors, such as intellectual capital, which refers to the capabilities of a company such as knowledge, skills, and equity, can also influence company performance (Albertini & Berger-Remy, 2019; Jeandry & Fajriyanti, 2023). The diversification strategy implemented by the company also affects the company's performance.

Intellectual Capital and Company Performance

Intellectual capital is intangible capital. According to Githaiga (2023), intellectual capital is vital for companies, especially companies operating in knowledge-intensive sectors such as banking, telecommunications, and pharmaceuticals. In today's dynamic environment, intellectual capital becomes a valuable resource for companies to achieve competitive advantage.

Research conducted by Githaiga (2023), which examined the influence of intellectual capital on bank performance, shows that intellectual capital has a positive effect, so it can be interpreted that intellectual capital can influence banking performance. In research conducted by Ni et al. (2020), who questioned whether intellectual capital was necessary for increasing company value, it was revealed that it affected growing company value. This research is measured using a comparison of the average net profit per employee by showing that wages increase to increase their resources. This research also examines how *goodwill* also influences company value.

(Asutay & Ubaidillah, 2023; Ousama et al., 2020) examined the influence of intellectual capital on financial performance in Islamic banks stated that intellectual capital, especially in the human resources section and the capital used, has a positive effect on the financial performance of Islamic banks. Research by Majumder et al. (2023) reveals that intellectual capital positively affects bank performance, especially in the capital component used.

Research conducted by Duho & Onumah (2021) revealed that capable employees can increase innovation in the form of services that satisfy customers, thereby increasing company value. A similar statement was also expressed by Duho & Onumah (2019) that intellectual capital influences company performance, especially the human resources component and capital structure. Supported by (Asare et al., 2020; Soetanto & Liem, 2019), also reveal that intellectual capital

positively affects company performance. Apart from improving performance in intellectual capital companies, it can also improve the quality of assets owned by banks, predominantly intellectual capital in the human resources and capital structure components. Ali et al. (2022) in their research found that all parts of intellectual capital have a positive effect on company performance. Based on earlier research related to this research, it can be concluded that intellectual capital positively affects company performance. Thus, the hypothesis can be formulated as follows:

H_1: As measured by the Value Added Intellectual Coefficient (VAIC), intellectual capital positively affects company performance.
H_2: Value-added Capital Employed (VACA) positively affects company performance.
H_3: Value-Added Human Capital (VAHU) positively affects company performance.
H_4: Value Added Structural Capital (STVA) positively affects company performance.

The Moderation Role of Income Diversification on Intellectual Capital and Company Performance

The theoretical rationale for income diversification is that it results in stable operating income and reduced risk because income streams are imperfectly correlated, as established by current portfolio theory Markowitz (1952) in research by Nguyen et al. (2023).

Research by Duho & Onumah (2019) revealed a relationship between income diversification and intellectual capital, where companies with high intellectual capital tend to focus on their existing sources of income rather than diversifying income. Companies need strategies to strengthen and restructure existing resources while developing competitive advantages. So, a process that might increase the company's superiority is diversification (Nguyen et al., 2023).

Based on research conducted by Abbas & Ali (2022), who examined banks in America, it was stated that income diversification could increase bank stability and increase risk-taking in banks that have large capitalization, but this only applies to banks that have sufficient capital and does not apply to banks that have small wealth because taking significant risks will have an impact on bank stability. However, overall income diversification can increase bank stability during a crisis. Research conducted by Sharma & Anand (2018) shows that diversification positively affects banking performance as measured in terms of risk. This applies to banks with medium and large capital but does not apply to small-scale banks. Research by Luu et al. (2020) revealed that income diversification can improve the financial performance of banks in Vietnam, but the effect is different depending on how big or small the bank is.

Research by Jeandry & Fajriyanti (2023) explained that intellectual capital and company financial performance can positively affect sustainable company performance. Their research it also revealed that diversification and good intelligent capital management can improve sustainable company performance. However, diversification cannot directly influence company performance, but can provide flexibility in capital formation because it can access resources, including external funding. Furthermore, Jeandry & Fajriyanti (2023) also revealed that intellectual capital and income diversification positively affect company performance. Moreover, income diversification can benefit companies with the company's flexibility to expand assets from various resources owned by the company. Research by Kinini et al. (2023) revealed that income diversification has a positive impact on banking liquidity.

Research results by Uniamikogbo et al. (2020) show that income diversification from the commission sector positively affects the company's financial performance. Still, income diversification through foreign exchange has a negative impact, so it is recommended to increase non-interest-based income to improve bank performance and reduce revenue from the foreign exchange sector. Research by Nguyen et al. (2023) reveals that income diversification as a moderating variable increases the impact of capital structure on financial performance.

Based on earlier research, this research will test the moderating role of income diversification on intellectual capital and company performance. Thus, the role of income diversification as a moderating variable can be formulated in the following hypothesis:

H_5: Income diversification positively moderates intellectual capital as measured by the Value-Added Intellectual Coefficient (VAIC) and company performance.

H_6: Income diversification positively moderates Value-Added Capital employee (VACA) and company performance.
H_7: Income diversification positively moderates Value-Added Human Capital (VAHU) and company performance.
H_8: Income diversification positively moderates Value-Added Structural Capital (STVA) and company performance.

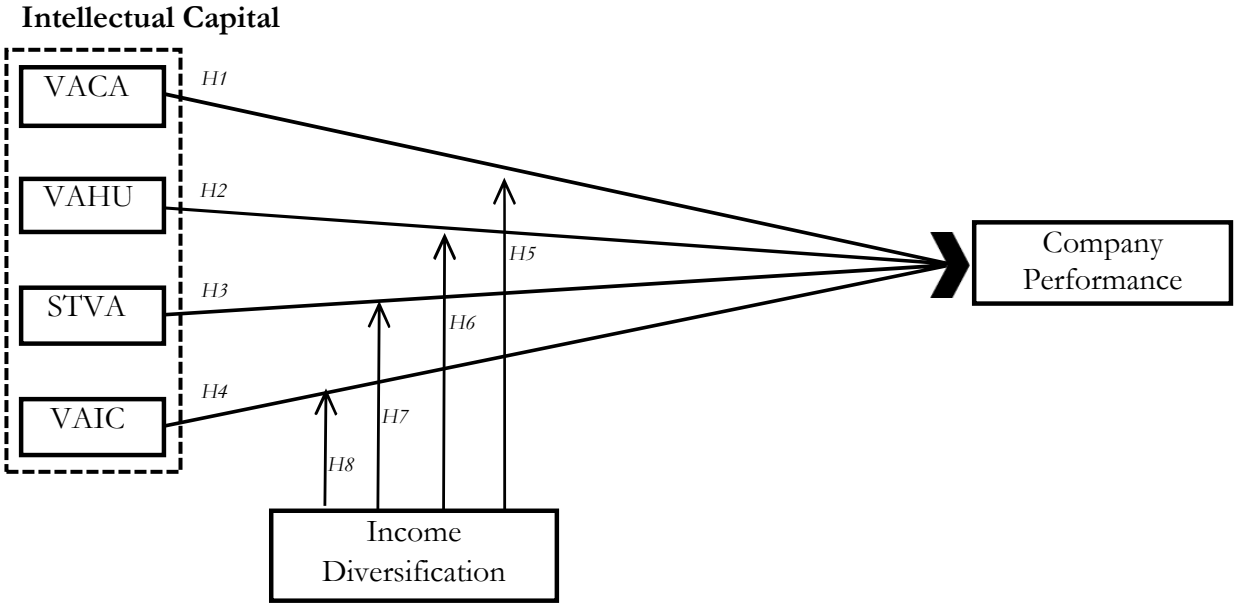

Figure 1. Research Conceptual Framework

Research Methods

This research is quantitative, where the analysis is carried out based on data processed in statistical software, that is SPSS, to prove hypotheses made previously and that a specific variable influences other variables (Hardani et al., 2020). This research uses 38 banks as samples from 47 banks listed on the Indonesia Stock Exchange (BEI). The method used in determining the sample is purposive sampling by considering several provisions, namely that the bank has been registered on the Indonesia Stock Exchange (BEI) at least from 2015 to 2022 and published financial reports successively from 2015 to 2022.

Hypothesis testing uses two regression methods: linear regression and moderated regression analysis (MRA). Linear regression analysis is used to: (1) test the influence of intellectual capital on company performance; and (2) to test the impact of intellectual capital components on company performance. Moderated regression analysis (MRA) tests: (3) the moderating effect of income diversification and intellectual capital on company performance; (4) the moderating effect of income diversification and the components of intellectual capital on company performance. The following is the model used to analyze the data in this research:

$$\mathrm{ROA} = \alpha + \beta.\mathrm{VAIC} + \varepsilon \quad (1)$$

$$\mathrm{ROA} = \alpha + \beta_1\mathrm{VACA} + \beta_2\mathrm{VAHU} + \beta_3\mathrm{STVA} + \varepsilon \quad (2)$$

$$\mathrm{ROA} = \alpha + \beta_1\mathrm{VAIC} + \beta_2\mathrm{ID} + \beta_3\mathrm{VAIC} * \mathrm{ID} + \varepsilon \quad (3)$$

$$\mathrm{ROA} = \alpha + \beta_1\mathrm{VACA} + \beta_2\mathrm{VAHU} + \beta_3\mathrm{STVA} + \beta_4\mathrm{VACA} * \mathrm{ID} + \beta_5\mathrm{VAHU} * \mathrm{ID} + \beta_6\mathrm{STVA} * \mathrm{ID} + \varepsilon \quad (4)$$

Information :
a : Constant value
β : Regression coefficient
ROA : Return on Assets
VAIC : Value-added Intellectual Coefficient

VACA : Value-added Capital Employed
VAHU : Value Added Human Capital
STVA : Value-Added Structural Capital
ID : Capital diversification
ε : Error value

Table 1. Variable Operational Definitions

Variables	Formula	References
Return on Assets (ROA)	$\text{ROA} = \frac{\text{Return}}{\text{Aset}}$	(Majumder et al., 2023)
Intellectual Capital	$\text{VAIC} = \text{VACA} + \text{VAHU} + \text{STVA}$	(Ulum, 2022)
Income Diversification	$\text{HHI} = \left[\left\{\left(\frac{\text{Interest Income}}{\text{Total Income}}\right)^2 + \left(\frac{\text{Noninterest Income}}{\text{Total Income}}\right)^2\right\}\right]$ $\text{ID} = 1 - \left[\left\{\left(\frac{\text{Interest Income}}{\text{total income}}\right)^2 + \left(\frac{\text{Noninterest Income}}{\text{Total Income}}\right)^2\right\}\right]$	(Githaiga, 2023)

Dependent Variable

In this research, company performance is an independent variable. Company performance is measured using a profitability ratio known as return on assets (ROA) as a measure of company performance, ROA is calculated by comparing the net profit that the company can generate in a certain period with the assets owned by the company (Majumder et al., 2023).

Independent Variable

An independent variable is a variable that is not bound by other variables in this research. Intellectual capital is an independent variable. VAIC concept, developed by Pulic (1998), is based on a combination of value added capital employed (VACA), value-added human capital (VAHU), and value added structural capital (STVA). VAIC is calculated by adding up VACA, VAHU, and STVA. VAIC comes from the company's ability to create added value. Adding value is obtained from the difference between output and input. VACA is an indicator to measure how much physical capital a company has to produce value for the company, VAHU shows the added value that can be generated from funds spent on labor, and STVA provides an idea of how much structural capital can give importance to the company (Ulum, 2022).

Several steps are taken to obtain the VAIC value, starting with calculating the Value Added (VA), which is obtained by subtracting the total income received by the company in a certain period from operating expenses but not including employee expenses. VACA is obtained from the division between VA and equity. The VAHU value is obtained from the division between VA and employee expenses. This indicator determines the added value employees generate from the capital the company has spent. The next step is to measure STVA, and this is an indicator of the company's capital structure. STVA is first calculated by finding the difference between VA and employee expenses, known as structural capital (SC). After getting SC, it is then divided by the VA value. VAIC is the sum of the three previous components.

Moderating Variable

Moderating variables are variables that can strengthen or weaken the relationship between the independent variable and the dependent variable. Income diversification in this research is a moderating variable. The most commonly used way to measure the income diversification ratio is

the Herfindahl Hirschman Index (HHI). The HHI can be calculated mathematically using the formula as shown in table 1 (Githaiga, 2023). HHI indicates how far a company is diversified in terms of earning income, provided that the smaller the result of the HHI calculation, it can be said that the company is diversified, but the more greater and significant the development of the HHI calculation, the company is declared to be more concentrated in generating income.

Results and Discussion

Banks support economic growth and state financial stability (Asma, 2018; Jeandry & Fajriyanti, 2023). In general, banks are financial institutions whose role is to collect funds from the public and then redistribute these funds through loans or credit schemes that can be given to companies or individuals (Duho & Onumah, 2019; Ovi et al., 2020). Besides providing credit, banks offer other services such as asset management, risk management, and investment (Asma, 2018).

Banks are an industry that focuses on knowledge in their operational activities (Asutay & Ubaidillah, 2023). Banks use technology, information, and human resources to develop their products and services. With their significant role, banks must have adequate knowledge of resource management. Hence, this research chooses banks as the object of industrial study, which illustrates intellectual capital's importance in achieving good performance.

This research will examine the influence of intellectual capital on the performance of banking companies in Indonesia, with income diversification as a moderating variable. This research uses 38 banking companies as research samples from 47 banking companies listed on the Indonesia Stock Exchange. The sample was determined using a purposive sampling method by considering several provisions, namely that the bank was registered on the Indonesia Stock Exchange (BEI) at least from 2015 to 2022 and published financial reports consecutively from 2015 to 2022.

Table 2. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	304	-0.06	0.07	0.0046	0.02214
VAIC	304	-409.76	431.42	10.7947	152.26468
VACA	304	-0.29	0.64	0.1728	0.16909
VAHU	304	-2.71	5.48	1.3798	1.48443
STVA	304	-411.54	430.08	9.2422	152.34453
HHI	304	0.50	1.11	0.7800	0.13149
Valid N	304				

Based on the results of the descriptive analysis explaining the data used in this research, it is known that ROA consists of 304 lines of data with a minimum value of -0.06, a maximum value of 0.07, and an average data of 0.0046 and a standard deviation of 0.02214. VAIC consists of 304 lines of data with a minimum value of -409.76, a maximum value of 431.42, an average data of 10.7947 and a standard deviation of 152.26468. VACA consists of 304 rows of data with a minimum value of -0.29, a maximum value of 0.64, a data average of 0.1728, and a standard deviation of 0.16909. VAHU consists of 304 rows of data with a minimum value of -2.71, a maximum value of 5.48, an average data of 1.3798, and a standard deviation of 1.48443. STVA consists of 304 rows of data with a minimum value of -411.54, a maximum value of 430.08, an average data of 9.2422, and a standard deviation of 152.34453. HHI consists of 304 rows of data with a minimum value of 0.50, a maximum value of 1.11, an average data of 0.7800, and a standard deviation of 0.13149.

This research examines the influence of intellectual capital and its components on company performance and the moderating effect of income diversification. Intellectual capital is measured using a method developed by Pulic (1998) called the value added intellectual coefficient (VAIC) which consists of three components, that is: value added capital employed (VACA), value added human capital (VAHU), value added structural capital (STVA). Company performance are measured using return on assets (ROA), while income diversification is calculated using the Herfindahl Hirschman Index (HHI) method.

Table 3. Hypotheses Testing Summary

Hypothesis	T value	sig	Conclusion
H1: VAIC → ROA	14.753	0.000	H1 is supported.
H2: VACA → ROA	6.610	0.000	H2 is supported.
H3: VAHU → ROA	12.469	0.000	H3 is supported
H4: STVA → ROA	0.364	0.716	H4 is not supported.
H5: VAICxHHI → ROA	-3.415	0.001	H5 is supported
H6: VACAxHHI → ROA	0.270	0.787	H6 is not supported.
H7: VAHUxHHI → ROA	-1.622	0.106	H7 is not supported.
H8: STVAxHHI → ROA	-1,615	0.107	H8 is not supported.

Note: VAICxHHI, VACAxHHI, VAHUxHHI, STVAxHHI are interaction variables between VAIC and the VAIC component of income diversification.

Based on the results of a linear regression analysis that examines the effect of intellectual capital on company performance, it shows that intellectual capital has a positive impact on company performance ($p = 0.000$, $p < 0.05$), it can be concluded that hypothesis 1 (H1) states that intellectual capital has a positive effect on company performance is supported.

For the intellectual capital component, when tested together, it shows a positive influence on company performance. Still, when tested individually, the VACA variable shows a positive impact on company performance ($p = 0.000$, $p < 0.05$), and the VAHU variable also indicates a positive influence on company performance ($p = 0.000$, $p < 0.05$). However, in contrast to VACA and VAHU, the STVA variable does not show an influence on company performance ($p = 0.716$, $p > 0.05$), so it can be concluded that hypothesis 2 (H2) which states that VACA has a positive effect on company performance is supported, hypothesis 3 (H3) which states saying that VAHU has a positive impact on company performance is supported, while hypothesis 4 (H4) which states that STVA has a positive effect on company performance is not supported, because the company is more focused on the ability and knowledge of human resources (Albertini & Berger-Remy, 2019; Ali et al., 2022).

The results show that hypothesis 5 (H5) is supported, income diversification positively moderates intellectual capital as measured by the Value-Added Intellectual Coefficient (VAIC) and company performance ($p = 0.001$, $p < 0,05$). The results of testing the moderating relationship between income diversification and intellectual capital components show that income diversification does not moderate the relationship between all parts of intellectual capital and company performance with the value of VACA ($p = 0.787$, $p < 0.05$), VAHU ($p = 0.106$, $p < 0.05$), STVA ($p = 0.107$, $p < 0.05$), so hypothesis 6 (H6) which states income diversification has a positive moderating effect on VACA is not supported, hypothesis 7 (H7) which states income diversification has a positive moderating effect on VAHU is not supported, and hypothesis 8 (H8) which states that income diversification has a positive moderating effect on STVA also not supported.

This research reveals new findings income diversification moderates the relationship between intellectual capital and company performance. This can be seen from the moderation regression test, which examines the effect of income diversification on intellectual capital and company performance. However, this only occurs for intellectual capital and the intellectual capital component. Not occur. So, banking companies in developing intellectual capital to improve company performance are advised to establish a good income diversification strategy because this can increase the influence of intellectual capital on company performance.

Discussion

The regression analysis results show that intellectual capital positively affects company performance, but not all intellectual capital components influence company performance. The VACA and VAHU components influence company performance, but STVA does not. Similar results were also obtained from research results (Asare et al., 2020; Githaiga, 2023; Soetanto & Liem, 2019), which found that intellectual capital positively affected company performance. In

addition (Asutay & Ubaidillah, 2023; Ousama et al., 2020), explained although the average intellectual capital is lower than in other studies, the positive influence on financial performance is evident. These findings also show that human resources are higher than capital used and capital structure. This study reveals that capital structure has an insignificant influence on the financial performance of Islamic banks compared to the capital employed and human resources. Research by Majumder et al. (2023) reveals that intellectual capital positively affects bank performance, especially in the capital component used. The results of the moderation regression analysis test show that income diversification has a moderating effect on intellectual capital and company performance. In contrast, for the intellectual capital component, income diversification cannot moderate the relationship with company performance.

The results of this research are in contrast to the findings of research from Nguyen et al. (2023), which revealed that income diversification strengthens the relationship between capital used, human resources, and capital structure on company performance, but when tested with the overall intellectual capital variable, income diversification weakening the relationship between intellectual capital and bank performance. Similar results were also revealed by Githaiga (2023) research, which examined the influence of intellectual capital on company performance with income diversification as moderation in banking in East Africa, finding that income diversification measured using the Herfindahl Hirschman Index (HHI) could moderate the components *in* intellectual capital measured using VAIC (HCE, SCE, and CEE). However, (Githaiga, 2023; Nguyen et al., 2023) also found that over-diversifying will have an impact on increasing banking risk, especially in small-scale banking, so an appropriate strategy for diversification is needed. Furthermore, research by (Githaiga, 2023; Nguyen et al., 2023) revealed that income diversification can moderate the components of intellectual capital and company performance but cannot moderate the relationship between intellectual capital and company performance, while this research reveals that income diversification does not moderate the relationship between capital components. Intellectual capital, namely VACA*,* VAHU*,* and STVA, on company performance when tested individually, but income diversification can moderate the relationship between intellectual capital (VAIC) and company performance.

Theoretical Implication and Managerial Implication

This research provides an understanding of intellectual capital. In addition, this research contributes to developing economic theory related to intellectual capital and company performance. For future researchers, this research can be used as a starting point to uncover other factors that can influence the relationship between intellectual capital and company performance.

The results of this research can be used by the banking industry in Indonesia to develop and understand how intellectual capital can influence company performance. Apart from that, by knowing that intellectual capital affects company performance, this research can be used to develop business strategies that focus on using intellectual capital, if it is proven that intellectual capital influences company performance. Investors and stakeholders can also utilize the findings from this research to make better investment decisions. By knowing that intellectual capital affects company performance, investors can use this research to assess the company's growth potential.

Conclusion and Future Direction

The results of the regression analysis show that intellectual capital (VAIC) has a positive effect on company performance. Furthermore, income diversification is having a moderating impact on intellectual capital and company performance. The intellectual capital component has a varied influence on company performance, whereas VACA has a positive effect on company performance, and VAHU also has a positive impact on company performance. In contrast, STVA does not affect company performance. Based on the moderation test, income diversification does not moderate the relationship between intellectual capital components and company performance. This research reveals something new intellectual capital can moderate the relationship between intellectual capital and company performance. However, the intellectual capital component of

income diversification cannot moderate its relationship with company performance.

This research provides insight into the influence of intellectual capital on bank performance, but several aspects need to be improved by future researchers. First, further research needs to be more specific in distinguishing the influence of intellectual capital on banks with large capitalization and banks with smaller capitalization. This will provide a deeper understanding of the differences in the impact of intellectual capital on company performance between the two categories of banks.

Second, this study tests the moderating effect produced by revenue diversification without considering other variables that might influence company performance. Therefore, future researchers are advised to include additional relevant variables, such as market factors, company size, and risk management, to enrich the analysis of the impact of intellectual capital.

Finally, this research uses the VAIC method to measure intellectual capital using financial report benchmarks. Future researchers should consider using new techniques that are more accurate and comprehensive in measuring intellectual capital. Thus, further research will provide a more precise picture of intellectual capital's influence in improving banking companies' performance

References

Abbas, F., & Ali, S. (2022). Dynamics of diversification and banks' risk-taking and stability: Empirical analysis of commercial banks. *Managerial and Decision Economics*, *43*(4), 1000–1014. https://doi.org/https://doi.org/10.1002/mde.3434

Albertini, E., & Berger-Remy, F. (2019). Intellectual capital and financial performance: A meta-analysis and research agenda. *M@n@gement*, *22*(2), 216–249. https://doi.org/10.3917/mana.222.0216

Ali, S., Murtaza, G., Hedvicakova, M., Jiang, J., & Naeem, M. (2022). Intellectual capital and financial performance: A comparative study. *Frontiers in Psychology*, *13*, 1–12. https://doi.org/10.3389/fpsyg.2022.967820

Alvino, F., Di Vaio, A., Hassan, R., & Palladino, R. (2021). Intellectual capital and sustainable development: a systematic literature review. *Journal of Intellectual Capital*, *22*(1), 76–94. https://doi.org/10.1108/JIC-11-2019-0259

Anik, S. (2021). The Effect of Intellectual Capital and Good Corporate Governance on Financial Performance and Corporate Value: A Case Study in Indonesia. *Journal of Asian Finance, Economics and Business*, *8*(4), 391–402. https://doi.org/10.13106/jafeb.2021.vol8.no4.0391

Asare, N., Laryea, M. M., Onumah, J. M., & Asamoah, M. E. (2020). Intellectual capital and asset quality in an emerging banking market. *Asian Journal of Accounting Research*, *6*(1), 55–68. https://doi.org/10.1108/AJAR-05-2020-0034

Asma, S. (2018). The Relation Between Corporate Values and Firm Performance of the World's 142 Largest Banks. *11th IBA Bachelor Thesis Conference*, 1–8. http://essay.utwente.nl/75383/

Asutay, M., & Ubaidillah. (2023). Examining the Impact of Intellectual Capital Performance on Financial Performance in Islamic Banks. *Journal of the Knowledge Economy*. https://doi.org/10.1007/s13132-023-01114-1

Aydoğmuş, M., Gülay, G., & Ergun, K. (2022). Impact of ESG performance on firm value and profitability. *Borsa Istanbul Review*, *22*, S119–S127. https://doi.org/10.1016/j.bir.2022.11.006

Cenciarelli, V. G., Greco, G., & Allegrini, M. (2018). Does intellectual capital help predict bankruptcy? *Journal of Intellectual Capital*, *19*(2), 321–337. https://doi.org/10.1108/JIC-03-2017-0047

Duho, K. C. T., & Onumah, J. M. (2019). Bank diversification strategy and intellectual capital in

Ghana: an empirical analysis. *Asian Journal of Accounting Research*, *4*(2), 246–259. https://doi.org/10.1108/AJAR-04-2019-0026

Duho, K. C. T., & Onumah, J. M. (2021). Determinants of intellectual capital performance in banks: empirical insights from an emerging market. *Afro-Asian J. of Finance and Accounting*, *11*(4), 583–606. https://doi.org/10.1504/AAJFA.2021.117740

Githaiga, P. N. (2022). Income diversification and bank risk-taking: The moderating role of intellectual capital. *Cogent Business and Management*, *9*(1), 2149142. https://doi.org/10.1080/23311975.2022.2149142

Githaiga, P. N. (2023). Intellectual capital and bank performance: the moderating role of income diversification. *Asia-Pacific Journal of Business Administration*, *15*(4), 509–526. https://doi.org/10.1108/APJBA-06-2021-0259

Hardani, Auliya, N. H., Andriani, H., Fardani, R. A., Ustiawaty, J., Utami, E. F., Sukmana, D. J., & Istiqomah, R. R. (2020). *Metode Penelitian Kualitatif & Kuantitatif* (H. Abadi (ed.)). Penerbit Pustaka Ilmu. https://www.researchgate.net/publication/340021548_Buku_Metode_Penelitian_Kualitatif_Kuantitatif

Jeandry, G., & Fajriyanti, N. (2023). Financial performance as mediation is influenced by diversification and intellectual capital on sustainability performance. *International Journal of Research in Business and Social Science (2147- 4478)*, *12*(3), 345–352. https://doi.org/10.20525/ijrbs.v12i3.2483

Kinini, D. M., Ocharo, K. N., & Kariuki, P. W. (2023). Do income diversification and capital adequacy affect liquidity creation? A case study of commercial banks in Kenya. *Cogent Business & Management*, *10*(2), 2240082. https://doi.org/10.1080/23311975.2023.2240082

Luu, H. N., Nguyen, L. Q. T., Vu, Q. H., & Tuan, L. Q. (2020). Income diversification and financial performance of commercial banks in Vietnam. *Review of Behavioral Finance*, *12*(3), 185–199. https://doi.org/10.1108/RBF-05-2019-0066

Majumder, M. T. H., Ruma, I. J., & Akter, A. (2023). Does intellectual capital affect bank performance? Evidence from Bangladesh. *LBS Journal of Management & Research*, *21*(2), 171–185. https://doi.org/10.1108/LBSJMR-05-2022-0016

Nguyen, D. T., Le, T. D., & Tran, S. H. (2023). The moderating role of income diversification on the relationship between intellectual capital and bank performance evidence from Viet Nam. *Cogent Business and Management*, *10*(1), 2182621. https://doi.org/10.1080/23311975.2023.2182621

Ni, Y., Cheng, Y. R., & Huang, P. (2020). Do intellectual capitals matter to firm value enhancement? Evidences from Taiwan. *Journal of Intellectual Capital*, *22*(4), 725–743. https://doi.org/10.1108/JIC-10-2019-0235

Ocak, M., & Fındık, D. (2019). The impact of intangible assets and sub-components of intangible assets on sustainable growth and firm value: Evidence from Turkish listed firms. *Sustainability*, *11*(19), 5–7. https://doi.org/10.3390/su11195359

Octavianus, H., & Fachrudin, K. A. (2022). Income Diversification Strategy on Bank Stability: International Banks Evidence. *Jurnal Keuangan Dan Perbankan*, *26*(3), 538–551. https://doi.org/10.26905/jkdp.v26i3.7764

Ousama, A. A., Hammami, H., & Abdulkarim, M. (2020). The association between intellectual capital and financial performance in the Islamic banking industry: An analysis of the GCC banks. *International Journal of Islamic and Middle Eastern Finance and Management*, *13*(1), 75–93. https://doi.org/10.1108/IMEFM-05-2016-0073

Ovi, N., Bose, S., Gunasekarage, A., & Shams, S. (2020). Do the business cycle and revenue

diversification matter for banks' capital buffer and credit risk: Evidence from ASEAN banks. *Journal of Contemporary Accounting & Economics*, *16*(1), 100186. https://doi.org/10.1016/j.jcae.2020.100186

Pertiwi, S. P., & Suhartini, D. (2022). Pengaruh Diversifikasi Pendapatan, Modal Intelektual, Dan Pengungkapan Manajemen Risiko Terhadap Nilai Perusahaan(Studi Empiris Pada Bank Umum Konvensional Yang Terdaftar Di Bursa Efek Indonesia Tahun 2015-2020). *Fair Value : Jurnal Ilmiah Akuntansi Dan Keuangan*, *4*(7), 1082–1094. https://doi.org/10.32670/fairvalue.v4i7.1179

Pulic, A. (1998). Measuring the Performance of Intellectual Potential (IP) in Knowledge Economy. In C. Tiffany & S. Jennifer (Eds.), *19th Annual National Business Conference*. DeGroote School of Business. https://www.bib.irb.hr/35384

Riyani, D., Ardini, L., & Hermanto, S. B. (2022). Pengaruh manajemen risiko, modal intelektual dan inovasi terhadap nilai perusahaan dimediasi kinerja perusahaan. *Owner*, *6*(4), 3670–3679. https://doi.org/10.33395/owner.v6i4.1170

Sharma, S., & Anand, A. (2018). Income diversification and bank performance: evidence from BRICS nations. *International Journal of Productivity and Performance Management*, *67*(9), 1625–1639. https://doi.org/10.1108/IJPPM-01-2018-0013

Siska, S., Kusumawati, S. M., & Faliany, L. J. (2022). Analisis Dampak Modal Intelektual, Kepemilikan Manajerial, Kepemilikan Institusional, Dan Dewan Komisaris Independen Terhadap Kinerja Keuangan Di Masa Depan. *Jurnal Manajemen*, *18*(2), 109–131. https://doi.org/10.25170/jm.v2i18.2876

Soetanto, T., & Liem, P. F. (2019). Intellectual capital in Indonesia: dynamic panel approach. *Journal of Asia Business Studies*, *13*(2), 240–262. https://doi.org/10.1108/JABS-02-2018-0059

Tarigan, V. B., & Hadiprajitno, P. T. B. (2022). PENGARUH MODAL INTELEKTUAL DAN MODAL KERJA TERHADAP NILAI PERUSAHAAN DENGAN KINERJA PERUSAHAAN SEBAGAI VARIABEL INTERVENING. *Jurnal Ilmu Manajemen Dan Akuntansi Terapan (JIMAT)*, *13*(2), 70–84. https://doi.org/10.36694/jimat.v13i2.425

Ulum, I. (2022). *INTELLECTUAL CAPITAL: Model Pengukuran, Framework Pengungkapan, dan Kinerja Organisasi*. UMM PRESS.

Uniamikogbo, E., Okoye, E. I., & Amos, A. O. (2020). Income Diversification and Financial Performance of Selected Deposit Money Banks in Nigeria. *International Journal of Applied Management Sciences and Engineering*, *8*(1), 89–105. https://doi.org/10.4018/ijamse.20210101.oa1

Weqar, F., Khan, A. M., Raushan, M. A., & Haque, S. M. I. (2021). Measuring the Impact of Intellectual Capital on the Financial Performance of the Finance Sector of India. *Journal of the Knowledge Economy*, *12*(3), 1134–1151. https://doi.org/10.1007/s13132-020-00654-0