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INVESTMENT IN INTELLECTUAL CAPITAL AND ITS IMPACT ON THE PROFITABILITY OF ISLAMIC BANKS IN INDONESIA

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ABSTRACT

Introduction: Islamic banks in Indonesia show significant potential, although their current asset contribution is only 1,9 percent of total Islamic banking asset globally. This is quite a contrast to Indonesia's title as the country with largest Muslim population in the world, as well as its ambition to become the center of the global sharia economy. One of the efforts that can be made to achieve this goal is by increasing the assets of Indonesian Islamic banks through enhancing their profitability.

Methods: This research uses secondary data from eight Sharia Commercial Banks (BUS) in the 2014-2022 period. A static panel regression model is used to examine the impact of Intellectual Capital on the profitability of BUS using Stata 17 application. The dependent variable is profitability, while the independent variables are IC and its components (Human Capital, Structural Capital, Customer Equity, and Relational Capital). The control variables consist of the ratio of total equity to total assets (EQA), non-performing financing (NPF), inflation, and the COVID-19 phenomenon.

Results: This study analyzes the impact of intellectual capital (IC) on the profitability of Islamic banks in Indonesia. The results show that IC has a significant positive effect on profitability. The components of human capital (HC) and capital employed (CE) contribute positively, while structural capital (SC) and relational capital (RC) do not have a significant impact.

Conclusion and suggestion: Findings of this research indicate that improving human resource competence and optimizing equity capital can enhance the profitability of Islamic banks, whereas investments in organizational structure, technology, and promotion do not yield significant effects. This study also provides policy implications for regulators and bank management in more effectively allocating IC investments. Additionally, the research suggests that Islamic banks should focus on digitalization and financial innovation to strengthen their performance.

INTRODUCTION

The development and success of Islamic banks in Indonesia continues to be a topic of interest for further study. This is due to the relatively low assets of Islamic banks in Indonesia, which account for only 1.9 percent of the total assets of global Islamic banks. Given this figure, it is assumed that the market potential of Islamic banks in Indonesia has not yet been fully realized. This contrasts sharply with Indonesia's status as the country with the largest Muslim population in the world, and is far from Indonesia's goal of becoming a leading hub for the global Islamic economy as outlined in the Indonesian Islamic Economy and Finance Masterplan 2019-2024.

Currently, the profitability growth of Indonesia's Islamic commercial banks (BUS), as measured by the return on assets (ROA) ratio, shows significant growth, though it remains below the profitability of Conventional Commercial Banks (BUK) from 2014 to 2022, as follows:

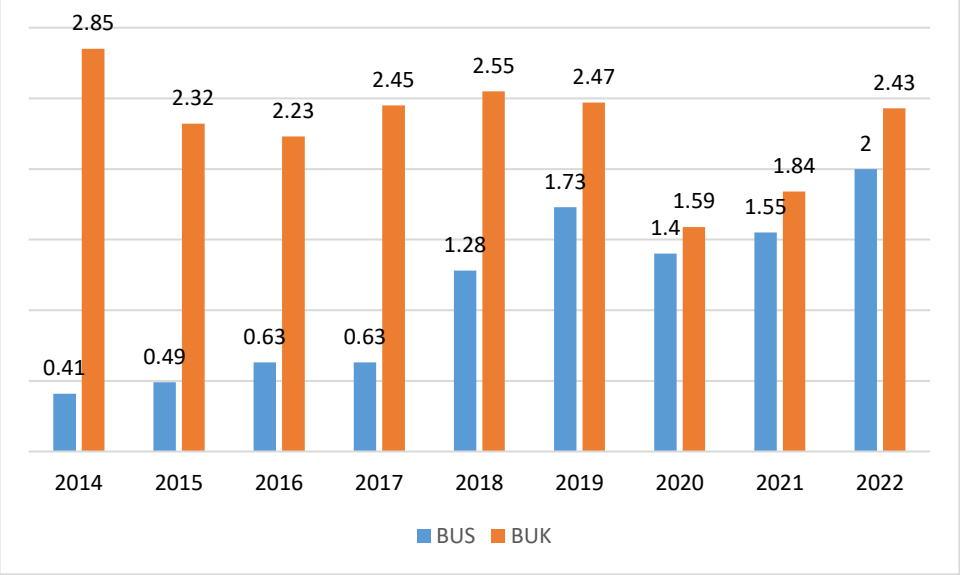

Figure 1. Growth in Return on Assets (ROA) of Indonesian Sharia Commercial Banks (BUS) and Indonesian Conventional Commercial Banks (BUK)
Source: Otoritas Jasa Keuangan (OJK)

In Figure 1, the ROA (Return on Assets) reflects the profit earned per total asset and, most importantly, indicates the management's ability to utilize the bank's financial resources and real investments to generate profit. The ROA of Islamic Commercial Banks (BUS) experienced a significant increase from 0.41 percent in 2014 to 2 percent in 2022. The ROA of Conventional Commercial Banks (BUK) tended to fluctuate but showed an increase from 2.32 percent in 2015 to 2.43 percent in 2022. The ROA growth of Islamic banks has steadily improved and fluctuated each year. However, overall, the ROA percentage of BUS in Indonesia remains below the performance of BUK.

The importance of studying the performance factors of Islamic banks in Indonesia extends beyond financial analysis and has broader implications for stakeholders. For regulators and the government, the increase in the ROA of Islamic banks indicates that policies supporting the growth of the Islamic banking sector are starting to yield positive results. This is also relevant for investors who view Islamic banks as an increasingly attractive investment option, as the rising ROA reflects better profitability. Additionally, for customers, the improved performance of Islamic banks signifies that these institutions are becoming more competent in managing their funds, which can enhance public trust in the Islamic banking system.

Furthermore, the improvement in ROA performance also indicates that Islamic banks are increasingly able to compete with conventional banks in terms of operational efficiency and profitability. This is a significant development, especially in the context of a more competitive market and the need for financial product innovation that aligns with Shariah principles. Therefore, studying and continuously monitoring the factors that influence the ROA performance of Islamic banks is essential, both to maintain the current growth momentum and to identify areas that still need improvement.

Based on the Resource-Based View (RBV) theory popularized by Barney et al. (2011), it explains that companies that can optimize their resources to create added value will convert this into a competitive advantage, including the performance of Islamic banks. The findings of Buallay et al. (2020) explain that a method to increase the profitability of Islamic banks is by increasing investment in the utilization of knowledge-based resources, or Intellectual Capital (IC). The existence of IC ensures that companies achieve superior economic, financial, and market performance (Orakwue & Oghuvwu, 2019; Pratama & Innayah, 2021).

Intellectual Capital (IC) can be clustered into internal and external components. The internal components include Human Capital (HC), Structural Capital (SC), and Capital Employed (CE), while the external component is Relational Capital (RC). Human Capital (HC) refers to the knowledge, skills, and experience of the bank's employees. Structural Capital (SC) encompasses the technology, procedures, and information systems that support the bank's operations. Capital Employed (CE) involves maximizing the capital resources owned by the bank. Relational Capital (RC) relates to the bank's relationships with customers, regulators, and other stakeholders. These components play crucial roles in the performance and competitiveness of Islamic banks.

In the existing literature, Intellectual Capital (IC) is generally considered one of the key factors that can influence the performance of banks, including Islamic banks. Several empirical studies suggest that IC, which consists of components such as Human Capital (HC), Structural Capital (SC), Customer Capital (CE), and Relational Capital (RC), can

significantly enhance the performance of Islamic banks through clear strategies, efficient organizational structures, the appropriate use of technological systems, and proactive relationship management (Asutay & Ubaidillah, 2023; Buallay et al., 2019; Farooq & Ahmad, 2023; Farooque et al., 2023; Saruchi et al., 2019; Weqar et al., 2020).

However, when Intellectual Capital (IC) is applied in the context of banking in Indonesia, research results show significant variation in the influence of IC components on bank performance. For example, some studies in Indonesia find that while IC is generally important for bank performance, when the components of IC—such as Human Capital (HC), Structural Capital (SC), Capital Employed (CE), and Relational Capital (RC)—are analyzed separately, the results tend to be varied and not always consistent (Al-Azizah & Wibowo, 2023; Ekaningrum, 2021; Faozan et al., 2023; Heriyanto, 2023; Margareta & Prasetyo, 2020; Setyawati et al., 2019; Soetanto & Liem, 2019a; Soewarno & Tjahjadi, 2020; Wahyuni et al., 2023). These inconsistencies suggest the presence of other factors that may influence how IC contributes to the profitability of Islamic banks in Indonesia.

Thus, this research gap indicates that while there is a general consensus on the importance of Intellectual Capital (IC) in enhancing the performance of Islamic banks, the specific impact of each IC component on the profitability of banks still requires further investigation to gain a deeper understanding. This is crucial for bank management to implement more effective and targeted IC strategies, particularly within the context of Islamic banking in Indonesia.

This research contributes to expanding the understanding of Intellectual Capital (IC) and its components in relation to the profitability of Islamic banks. It is expected to provide deeper insights into how the profitability of Islamic banks can be enhanced. Considering that the Financial Services Authority (OJK) has priority policies regarding the optimization of Islamic banks (Otoritas Jasa Keuangan, 2022), this study offers profound insights into the relationship between IC and the profitability of Islamic banks, which can significantly support OJK's efforts in achieving these goals. This research is anticipated not only to improve the understanding of the factors affecting the profitability of Islamic banks in Indonesia but also to provide insights for practitioners, regulators, and other stakeholders in developing more effective strategies to enhance the performance and competitiveness of Islamic banks in the Indonesian financial market.

LITERATURE REVIEW

The Influence of Intellectual Capital (IC) on Profitability

The development of the Resource-Based View (RBV) regarding intangible assets, such as Intellectual Capital (IC), is seen as a unique resource for creating competitive advantage and improving financial performance (Orakwue & Oghuvwu, 2019; Pratama & Innayah, 2021). Based on the previous explanations, Siswanti & Cahaya, (2020) describe

IC as a strategic asset that supports the success of Islamic banks. Nadeem et al., (2017) argue that IC helps enhance the performance of banks, whether large or small. Research findings by Wahyuni et al., (2023) indicate that the growth of IC can predict the financial performance of Islamic banks in Indonesia for the current year. Additionally, IC plays a role in guiding stakeholders in formulating and developing strategies in the banking sector (Asutay & Ubaidillah, 2023).

Previous empirical studies, such as Ousama et al., (2020), demonstrate that Intellectual Capital (IC) has a positive impact on the financial performance of Islamic banks, which have specific requirements related to their human resources, such as financial and fiqh backgrounds. Other empirical studies indicate that IC, measured using the Modified Value Added Intellectual Coefficient (MVAIC), can enhance the profitability of banks (Farooq & Ahmad, 2023; Weqar et al., 2020). Furthermore, Ulum et al. (2017) and Soetanto & Liem (2019b) show that IC, using MVAIC, is positively related to accounting-based performance in companies listed in Indonesia. Therefore, the following hypothesis can be formulated:

H1: IC has a positive effect on the profitability of Islamic Commercial Banks in Indonesia.

The Influence of Human Capital (HC) on Profitability

Human Capital (HC) measures the added value generated from investments in human resources (Chen et al., 2004). The Resource-Based View (RBV) theory states that retaining a highly skilled workforce will result in business advantages (Barney, 1991). The skills developed from employee knowledge enhancement are essential in the operations of Islamic banks, as they can improve productivity by providing quality service to customers, ultimately increasing the bank's profits.

Findings by Ousama et al. (2020) indicate that HC has a positive effect on the performance of Islamic banks operating in GCC countries. Additionally, Weqar et al., (2020) found that only HC positively influences bank performance in India. Asutay & Ubaidillah (2023) describe HC as a component that represents IC and also found that IC positively affects ROA in the top 10 countries in terms of Islamic banking. Therefore, the following hypothesis can be formulated:

H1a: HC has a positive effect on profitability.

The Influence of Structural Capital (SC) on Profitability

Structural Capital (SC) refers to the organizational structure that enables employees to achieve optimal performance in Intellectual Capital (IC). The roles of SC and Human Capital (HC) are interrelated; for instance, if employees possess high intellectual capabilities but the organization lacks the structures, systems, and processes to support their contributions, the company will not benefit from their potential. Therefore, the role

of SC is to coordinate, organize, preserve, and institutionalize knowledge based on the organization's systems and procedures.

Several findings confirm a positive relationship between SC and ROA in Islamic banks in Saudi Arabia (Naushad, 2019). Asutay & Ubaidillah (2023) also confirm that SC has a significant positive relationship with the profitability of Islamic banks in the top 10 countries for Islamic banking. Thus, the following hypothesis can be formulated:

H1b: SC has a positive effect on profitability.

The Influence of Capital Employed (CE) on Profitability

Capital Employed (CE) is an indicator of the value added in the form of utilized capital. Capital is a crucial factor for banks. Adequate capital is essential for banks as intermediary institutions that collect and distribute funds. Additionally, a substantial CE will support the optimization of Human Capital (HC) and Structural Capital (SC) to achieve the desired profitability without reducing the amount of financing provided.

Previous research confirms a similar relationship in banks in Brazil, Russia, India, China, and South Africa (BRICS) (Nadeem et al., 2017). Findings by Weqar et al. (2020) also indicate that CE positively impacts banks in India. Furthermore, the findings of Soewarno & Tjahjadi (2020) explain that CE positively affects the performance of banks in Indonesia. Therefore, the following hypothesis can be formulated:

H1c: CE has a positive effect on profitability.

The Influence of Relational Capital (RC) on Profitability

Relational Capital (RC) refers to the ability to maintain relationships with stakeholders, including customers, banking and non-banking institutions, and other stakeholders, to achieve competitive advantages that enhance the performance of the bank. Strong RC can improve the legitimacy and reputation of Islamic banks. For instance, when the public is aware that Islamic banks operate in accordance with Sharia principles, they are more likely to choose to transact with them, directly increasing the value of Islamic banks and their profits through customer satisfaction and loyalty.

Empirical studies, such as Ur Rehman et al. (2022), indicate that RC positively influences profitability in 129 Islamic banks across 29 countries. Similarly, Aslam et al. (2023) confirm a positive impact on Islamic banks in 26 countries within the Organization of Islamic Cooperation (OIC). Based on the above discussion, the following hypothesis can be proposed:

H1d: RC has a positive effect on profitability.

RESEARCH METHODS

The research utilizes secondary data from eight Islamic Commercial Banks (BUS) over the period from 2014 to 2022 as the sample. To examine the impact of Intellectual

Capital (IC) on the profitability of BUS, we employ static panel regression estimation using Stata 17 as the analytical tool.

This study comprises a dependent variable represented by profitability, followed by Intellectual Capital as the independent variable. The control variables include the Total Equity to Total Assets (EQA) ratio, Non-performing Financing, inflation, and the COVID-19 phenomenon, which can be measured using Table 1.

Table 1. Research Sample

No	Name of Sharia Bank Indonesia
1.	Bank Muamalat Indonesia
2.	Bank Victoria Syariah
3.	Bank Jabar Banten Syariah
4.	Bank Mega Syariah
5.	Bank Panin Dubai Syariah
6.	Bank Syariah Bukopin
7.	BCA Syariah
8.	Bank Tabungan Pensiunan Nasional Syariah

Source: Authors, 2023

Measuring Intellectual Capital (IC) using the Modified Value Added Intellectual Coefficient (MVAIC) serves as an indicator for assessing the intellectual added value within a company. According to Ulum (2013), in the context of measuring the IC variable in Islamic banks, it should be based on accounts in Sharia-compliant financial statements. The MVAIC model used is popular because it was developed by Ulum et al. (2017).

The MVAIC measurement has been utilized in several previous studies, such as those conducted by (Buallay et al., 2020; Farooque et al., 2023; Ulum et al., 2017; Vidyarthi & Tiwari, 2020). The steps to calculate the MVAIC model are as follows:

1. Calculate value added (VA) using the following equation:

$$VA = Output - Input \ldots (1)$$

   Where output is measured by total income from sharia activities, and input is measured by operational costs and non-operational costs (other than employee costs).

2. Calculate Human Capital Efficiency (HCE), which refers to how effectively a company utilizes its human capital based on the funds allocated for labor. The calculation of HCE is done using the following equation:

$$HCE = VA/HC \ldots (2)$$

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Where HC is measured by employee burden or costs.

3. Calculate Structural Capital Efficiency (SCE), which reflects the contribution of structural capital in value creation. The calculation of SCE is as follows:

$$SC = VA - HC$$

$$SCE = SC/VA \dots (3)$$

4. Calculate Capital Employed Efficiency (CEE), which indicates how effectively a company utilizes its business capital to generate added value. The calculation of CEE is done using the following equation:

$$CEE = VA/CE \dots (4)$$

Where CE is measured by total equity.

5. Calculate Relational Capital Efficiency (RCE), which measures how effectively a company utilizes its relational capital (RC) from the funds spent on promotions and stakeholder relationships to create value. The calculation of RCE is done using the following equation:

$$RCE = RC/VA \dots (5)$$

Where RC is measured by promotional expenses.

6. After obtaining the values of CEE, HCE, SCE, and RCE, the next step is to calculate the overall Intellectual Capital Efficiency (ICE), which reflects how effectively the company utilizes its Intellectual Capital (IC) from the costs allocated to Human Capital (HC), Structural Capital (SC), Capital Employed (CE), and Relational Capital (RC), using the MVAIC (Modified Value-Added Intellectual Coefficient) proxy. The formula for calculating MVAIC is as follows:

$$MVAC = HCE + SCE + RCE + CEE \dots (6)$$

This equation represents the sum of the efficiencies of each component of IC, providing an overall indicator of how well the bank leverages its intellectual resources to generate value and improve profitability.

Table 2. Operational Definition and Variable Measurement

Variabel	Pengukuran
Value Added (VA)	VA = OUTPUT – INPUT

Human capital efficiency (HCE)	$\mathrm{HCE} = \mathrm{VA}/\mathrm{Employee\ Expenses}$
Structural capita efficiency (SCE)	$\mathrm{SCE} = (\mathrm{VA} - \mathrm{Employee\ Expenses})/\mathrm{VA})$
Capita employed efficiency (CEE)	$\mathrm{CEE} = \mathrm{VA}/\mathrm{Total\ equity}$
Relational capita efficiency (RCE)	$\mathrm{RCE} = \mathrm{Promotion\ expenses}/\mathrm{VA})$
Intellectual Capital efficiency (ICE)	MVAIC= HCE + SCE + CEE + RCE
Profitabilitas	$\mathrm{ROA} = \mathrm{Netto}/\mathrm{Total\ Asset}$
Total aquity to total assets (EQA)	$\mathrm{EQA} = \mathrm{Total\ Equity}/\mathrm{Total\ Asset}$
Non-Performing Financing (NPF)	$\mathrm{NPF} = \mathrm{Bad\ debt\ financing}/\mathrm{Total\ financing}$
Inflasi (INF)	Annual Inflation Precentage
COVID	Score 0 for periode 2014 to 2019 and 2022
	Score 1 for periode 2020 and 2021

This research employs two analytical models. The first model, Model 1, examines the overall impact of Intellectual Capital (IC) on the profitability performance of Islamic Commercial Banks (BUS) in Indonesia. Model 2 tests the effects of the individual components of IC (such as HCE, SCE, RCE, and CEE) on the profitability performance of BUS in Indonesia.

The static panel regression equations used in this study are as follows:

Model 1

$$ROAit = \alpha + \beta 1\, ICit + \beta 2\, EQAit + \beta 3\, NPFit + \beta 4\, INFit + \beta 5\, Covidit + \varepsilon it \ldots\ldots\ldots (7)$$

Model 2

$$ROAit = \alpha + \beta 1\, HCit + \beta 2\, SCit + \beta 3\, CEit + \beta 4\, RCit + \beta 5\, EQAit + \beta 6\, NPFit + \beta 7\, INFit + \beta 8\, Covidit + \varepsilon it \ldots\ldots\ldots (8)$$

In the equations mentioned above, the variables are defined as follows:

- ROA: Represents the Return on Assets, which measures the profitability of the Islamic banks.
- IC: Refers to the Intellectual Capital score (MVAIC).
- HC: Denotes Human Capital, indicating the efficiency of human resource utilization.
- SC: Stands for Structural Capital, reflecting the contribution of organizational structures and systems.
- CE: Represents Capital Employed, measuring the efficiency of financial capital utilization.
- RC: Denotes Relational Capital, referring to the value derived from relationships with stakeholders.

For the control variables:

- EQA: Ratio of total equity to total assets, indicating financial stability.
- NPF: Non-Performing Financing, showing the proportion of non-performing loans.
- INF: Represents inflation, which affects overall economic conditions.
- Covid: Refers to the COVID-19 phenomenon, indicating the impact of the pandemic on financial performance.

These variables are used to test the impact of Intellectual Capital and its components on the profitability (ROA) of Islamic banks in Indonesia.

RESULT AND ANALYSIS

Research Findings

Descriptive statistical analysis is used to provide an overview of the 72 observations of the independent, dependent, and control variables used in the panel data regression model in this study as follows:

Table 3. Variable Descriptive Statistic 2014-2022

Variables	Obs	Mean	Std. Dev.	Min	Max
ROA	72	1.094	4.053	-10.77	13.58
IC	72	1.803	2.589	-7.484	9.036
HC	72	1.314	1.99	-7.617	6.881
SC	72	.301	1.266	-6.413	5.17
CE	72	.158	.459	-2.983	1.283
RC	72	.03	.062	-.133	.297
EQA	72	18.097	13.122	3.178	100
NPF	72	4.377	6.61	0	43.99
INF	72	3.694	1.966	1.68	8.36
Covid	72	.222	.419	0	1

Source: Stata 17 data processing result

Based on Table 3, which presents the results of the descriptive statistical analysis, it can be concluded that the highest ROA value of 13.58 percent was achieved by BTPN Syariah in 2019, while the lowest value of -10.77 percent was recorded by Bank Panin Dubai Syariah in 2017. The overall average ROA for Islamic Commercial Banks (BUS) is 1.09 percent. Furthermore, the lowest efficiency score of 0.31 was held by Bank Mega Syariah in 2020, while the average efficiency score for BUS in Indonesia is 0.61. The highest IC score of 9.036 was achieved by Bank Jabar Banten Syariah in 2014, while the lowest IC score of -7.84 was recorded by Bank Panin Dubai Syariah in 2017. The average IC score for BUS in Indonesia during the observation period is 1.80.

The Human Capital (HC) recorded a minimum score of -7.61 in 2021, achieved by Bank Panin Dubai Syariah, while the maximum score of 6.88 was recorded in 2014 by Bank Jabar Banten Syariah, with an average HC score of 1.31 across all samples. Next, Structural Capital (SC) had a minimum score of -6.41 in 2022, recorded by Bank Bukopin Syariah,

while the maximum score of 5.17 was achieved in 2015 by Bank Victoria Syariah, with an average SC score of 0.30 across all samples. Capital Employed (CE) recorded a minimum score of -2.98 in 2017, achieved by Bank Panin Dubai Syariah, while the maximum score of 1.28 was recorded in 2014 by Bank Jabar Banten Syariah, with an average CE score of 0.18 across all samples. The final component, Relational Capital (RC), recorded a minimum score of -0.31 in 2015, achieved by Bank Victoria Syariah, while the maximum score of 0.29 was recorded in 2014 by Bank Victoria Syariah, with an average RC score of 0.03 across all samples.

The descriptive statistics for the control variables, categorized based on specific banks and macroeconomic variables, show that the highest EQA was recorded by Bank Muamalat Indonesia in 2020 at 100 percent, while the lowest was 31 percent, recorded by Bank Panin Dubai Syariah in 2017. Another specific bank control variable is NPF (Non-Performing Financing), where Bank Jabar Banten Syariah had both the highest and lowest NPF, at 43.99 percent in 2016. As for the macro control variable, inflation, the highest recorded inflation was 8.36 percent in 2014, and the lowest was 1.68 percent in 2021. Lastly, the dummy variable for COVID-19 applies only to observations in the years 2020 and 2021.

Before presenting the static panel regression results, model selection was conducted for both models 1 and 2, as they utilize static panel regression. Therefore, the Chow, Hausman, and Lagrange Multiplier (LM) tests were performed to determine the best regression model. The Lagrange Multiplier test was used to select the most suitable model. These tests were conducted using STATA 17 software, with the results presented as follows.

Table 4. Result of Selecting the Panel Data Model

Model Determination	Model 1				Model 2		
	Prov > F	Prob > chi2	Prob > chibar2	Model Terpilih	Prov > F	Prob > chi2	Selected Model
Chow Test	0.000			FEM	0.000		FEM
Hausman Test		0.1117		REM		0.000	FEM
LM Test			0.000	REM			
Best Model	REM				FEM		

Source: Stata 17 data processing result

Based on the table above, for model 1, the Chow test results show that the value of prob > F is 0.0000, which is less than the significance level of 0.05, so H0 is rejected, indicating that the best model is Fixed Effect Model (FEM). Then, the Hausman test results show that the value of Prob > chi2 is 0.1117, which is greater than the significance level of 0.05, indicating that the best model is Random Effect Model (REM). Since the results of the Chow and Hausman tests are inconsistent, the Lagrange Multiplier (LM) test was

required. The LM test results show that the value of Prob > chibar2 is 0.0000, which is less than the significance level of 0.05, indicating that the best model for model 1 is REM.

Next, for model 2, the Chow test results show that the value of prob > F is 0.0000, which is less than the significance level of 0.05, so H0 is rejected, indicating that the best model is FEM. Then, the Hausman test results show that the value of Prob > chi2 is 0.0000, which is also less than the significance level of 0.05, indicating that the best model is FEM. Since the Chow and Hausman test results are consistent, the best model for model 2 is FEM.

Table 5. Regression Result

Variabel Independen		Variabel Dependen	
		ROA	
		Model 3	Model 4
Intellectual Capital	Coefficient	0.6094***	
	Std. err.	0.1007	
Human Capital	Coefficient		0.8101***
	Std. err.		0.1381
Structural Capital	Coefficient		-0.2024
	Std. err.		0.3212
Capital Employed	Coefficient		1.1972*
	Std. err.		0.6198
Relational Capital	Coefficient		-0.2364
	Std. err.		6.8636
EQA	Coefficient	0.0340*	0.0178
	Std. err.	0.0197	0.0158
NPF	Coefficient	-0.1054**	-0.0587*
	Std. err.	0.0381	0.0310
Inflasi	Coefficient	-0.1567	-0.3167**
	Std. err.	0.1345	0.1130
COVID	Coefficient	-0.7484	-0.675
	Std. err.	0.6519	0.5101
Constant	Coefficient	0.5856	1.1640*
	Std. err.	1.094	0.6295
Wald chi2		59.78	15.57
Prob > chi2		0.000***	0.000***
Bank		8	8
No of Observation		72	72

Ket: *** Sig. 1% > ** Sig. 5% > * Sig. 10%

Source: Stata 17 data processing result

The results of Tobit regression and static panel regression on 8 Islamic banks over 9 years, from 2014 to 2022, are as follows above.

The descriptive results show that profitability, measured by ROA, has an average of 1.094 percent for Islamic banks in Indonesia. Additionally, the average value for the independent variable, IC, is 1.803. The regression results in model 1 indicate that IC has a positive effect on the profitability of Islamic banks operating in Indonesia. This suggests that IC plays a significant role in profit management for these banks. These findings support the empirical results of studies by (Farooq & Ahmad, 2023; Ousama et al., 2020; Weqar et al., 2020), which show that allocating resources towards IC positively impacts the financial gains of banks. Therefore, the empirical results confirm hypothesis H1, which assumes that IC is a key contributing factor to improving the profitability of Islamic banks.

The concept of Intellectual Capital (IC) relates to the potential for gaining a competitive advantage by leveraging knowledge as a valuable resource derived from intangible assets that organizations use to achieve their objectives and optimize operational performance. A high IC score indicates an increased potential for a bank to optimize its profitability. On the other hand, ineffective IC management can lead to various issues, including employee unproductiveness, substandard service quality, inefficient work procedures, and poor external relationships.

Discussion

This study provides empirical evidence that Intellectual Capital (IC) can significantly enhance the profitability of Islamic banks. Therefore, banks must focus on their employees' competencies not only at the time of recruitment but also throughout their careers. Human Capital (HC) skills require continuous monitoring and enhancement to deliver optimal value. Islamic banks should also fund personal expenses related to skill improvement and upgrading through training or other activities. Future technological advancements will transform jobs typically performed by humans, with technology such as Artificial Intelligence (AI) or robotics taking over these roles. Consequently, only employees or human resources skilled in specific tasks that cannot be replaced by technology will be needed.

Additionally, Islamic banks need to offer complex products and schemes, as they serve as intermediary institutions to channel funds to those with a deficit. Therefore, it is crucial to understand the core business and risk profile while adhering to Sharia principles. Besides having strong Human Resources (HR) skills, employees in sales roles within Islamic banks must possess a solid understanding of Islamic philosophy. The primary task of sales personnel is to market Islamic bank products. Employees responsible for sales must effectively communicate to the public that transactions in Islamic banks are not merely business transactions but also involve blessings and welfare.

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Islamic banks should also pay attention to Structural Capital (SC) as the infrastructure that supports Human Capital (HC) and Capital Employed (CE). Generally, Islamic banks have lower levels of SC compared to conventional banks, especially in developing countries. SC, derived from technology adoption, internal process documentation such as corporate culture, and internal procedures, enables Islamic banks to mitigate internal and external shocks. Finally, Islamic banks need to optimize Relational Capital (RC) to maintain stakeholder trust.

This study finds that Intellectual Capital (IC) is a primary driver of profitability in Islamic banks in Indonesia. These findings provide empirical evidence for the Resource-Based View (RBV) theory, which states that banks with superior intangible assets are able to achieve greater profitability and attain a stronger competitive advantage compared to banks with limited intangible assets.

The regression results from Model 2 indicate that only Human Capital (HC) and Capital Employed (CE) have a positive effect on the profitability of Islamic banks. These findings support hypotheses H2a and H2c, but do not support H2b and H2d. This suggests that Islamic banks will benefit from hiring employees with capabilities or competencies focused on philosophy, IT, digitalization, and strong customer service skills. Importantly, these employees should possess high problem-solving abilities. Additionally, increasing the Capital Employed (CE) in Islamic banks by enhancing equity will drive the bank's business performance.

These findings demonstrate that Human Capital (HC) influences the profitability of Islamic banks, validating several previous studies, including those by Ousama et al. (2020), Weqar et al. (2020); Soewarno & Tjahjadi (2020); Akkas (2022); and Asutay & Ubaidillah (2023). These studies reveal that banks with higher investments in Human Capital are better positioned to achieve strong financial performance.

According to Gho (2005), Human Capital (HC) or investment in human resources is a top priority for banks as intermediary institutions, as it determines the quality of services provided to customers. The differences between Islamic banks and conventional banks pose greater challenges in investing in human resources. This is because employees of Islamic banks are expected to possess skills and knowledge related to conventional banking as well as a strong understanding of Islamic law. Knowledge of Islamic law is essential for enhancing the reputation and credibility of Islamic banks, which can lead to sustainable performance for these institutions.

In addition, it was found that Structural Capital (SC) does not have a significant effect on the profitability of Islamic banks. This implies that investments in structural capital have not been optimal in generating and enhancing value within Islamic banking, which in turn affects financial performance. These findings align with previous studies conducted by Ousama et al. (2020) and Asutay & Ubaidillah (2023), which explain that

investments in infrastructure and facilities that support human resources in creating and developing knowledge do not directly lead to improved financial performance independently.

Furthermore, Capital Employed (CE) has a positive impact on profitability, which is consistent with findings from (Asutay & Ubaidillah, 2023; Soewarno & Tjahjadi, 2020; Nawaz & Haniffa, 2017). This result implies that Islamic banks in Indonesia have effective capital management strategies to generate revenue. According to Van Nguyen & Lu, (2023), CE plays a crucial role in enhancing the intermediation performance of banks during both crisis and non-crisis periods. Therefore, optimizing CE is an essential requirement for Islamic banks, both in the medium and long term, such as through mergers to increase the assets of Islamic banks in Indonesia.

Another finding in this study is that Relational Capital (RC) does not have an impact on profitability. This means that investments made by Islamic banks in marketing do not significantly affect their financial performance. This result is consistent with previous findings by Farooque et al., (2023), which indicate that RC does not influence the financial performance of Islamic banks. This may be due to the fact that Islamic banks have yet to employ qualified and experienced personnel who can better understand the needs and preferences of their customers.

Human Capital (HC) and Capital Employed (CE) are observed as catalysts for increasing the profitability of Islamic banks in Indonesia. This implies that Islamic banks with superior human resources and significant assets or equity have the capability to generate added value, thereby enhancing their profit margins. The direction of HC policy has been previously explained by the Financial Services Authority (Otoritas Jasa Keuangan, 2022) through strengthening the identity of Islamic banking by preparing studies and regulations on Sharia Governance Framework (SGF) and the standards for Islamic bankers' competencies. Additionally, OJK recommends the development direction of Islamic banks by enhancing Relational Capital (RC) through synergy with other Islamic financial institutions, including partnerships with conventional banks to expand access to Islamic banking services. Furthermore, the establishment of a Sharia Banking Committee is suggested to strengthen relationships with stakeholders in Islamic banking in Indonesia.

CONCLUSION

This research provides additional empirical studies on the impact of Intellectual Capital (IC) on the profitability of Islamic banks. IC is found to have a significant positive effect on the profitability of Islamic banks in Indonesia. This means that investments made by Islamic banks in IC can be utilized to enhance their margins. The Human Capital (HC) component positively

influences the profitability of Islamic banks in Indonesia. In other words, the expenditures made by Islamic banks for employee costs lead to increased profits. This indicates that the more competent the human resources of an Islamic bank, the higher the bank's profitability will be.

On the other hand, the Structural Capital (SC) component does not significantly impact the cost efficiency of Islamic banks in Indonesia. This suggests that investments made by Islamic banks to facilitate employees through organizational structures, culture, and information technology do not improve their profitability. The Capital Employed (CE) component positively affects the profitability of Islamic banks in Indonesia, implying that Islamic banks that optimize their equity capital can enhance their earnings management. Finally, Relational Capital (RC) does not have a significant impact on the profitability of Islamic banks in Indonesia, indicating that investments in promotional expenses do not contribute to increased profits for these banks.

This research contributes to policymakers in two ways. First, it highlights the prevalence of Intellectual Capital (IC) investments in Islamic banks in Indonesia and their subsequent impact on profitability. In this context, policymakers, particularly the Financial Services Authority (OJK), can identify which components of intangible assets or IC—namely Human Capital (HC), Structural Capital (SC), Capital Employed (CE), and Relational Capital (RC)—require additional investment to enhance the performance of Islamic banks.

The future business model of banking will undoubtedly be characterized by the digitalization of banking products and services. This means that banks seeking to compete in the money market must invest in new technologies. Such a transition will inevitably alter organizational structures, minimizing labor costs to invest in compatible technologies. This shift or change in the business model requires superior human resources to optimize the investments made by Islamic banks, thereby generating additional revenue during the transformation phase of Islamic banking.

Additionally, this research suggests that Islamic banks in Indonesia should operate at an appropriate scale and strive to find their respective niche specializations. Islamic banks are recommended to engage in digital business and provide a diverse range of financial innovation services, which can increase non-profit-sharing revenue and, subsequently, enhance the net financial profit of the banks.

As a result, the increase in revenue will enable banks to significantly engage in financial innovation activities. The findings obtained from the regression analysis can have implications for understanding the impact of Intellectual Capital (IC) on the profitability of Islamic banks in Indonesia. This research confirms that investing in IC can be an effective means for bank managers to enhance resource utilization and investment efficiency, leading to improved efficiency and profit management. In other words, expenditures on labor, information technology, and the growth of operational revenue are considered valuable assets that will yield economic benefits in the future for Islamic banks.

Furthermore, this study has several limitations. First, it only considers Return on Assets (ROA) as a measure of the profitability of Islamic banks. Future research could consider other measures such as Return on Equity (ROE), Net Interest Margin (NIM), and Tobin's Q. Second, this study does not differentiate Islamic banks based on their core capital. Future research could take into account the categorization of Islamic banks according to OJK regulations from 2016 regarding the minimum core capital requirements for banks.

Third, this study is limited to eight Islamic commercial banks in Indonesia. Future research could expand the sample size to include Islamic Business Units (UUS) or Islamic Rural Banks (BPRS). Finally, this study also has limitations regarding the time period considered, which is from 2014 to 2022, and does not take into account long-term relationships among the variables. Therefore, future research should delve deeper into the analysis to provide more comprehensive recommendations for the development of Islamic banking in Indonesia.

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