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| Research Article |

Does intellectual capital efficiency spur the financial performance of banks? A comparative analysis of Islamic and conventional banks in Pakistan

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Abstract

In the contemporary landscape of banking, the concept of intellectual capital efficiency (ICE) has emerged as a pivotal force, embodying the intangible assets that wield remarkable influence over an institution's performance. Therefore, this study aims to comparatively examine the ICE on the financial performance of banks in Pakistan. This study used a panel data structure, which includes data from 16 commercial banks and 5 Islamic banks in Pakistan, over a period of 12 years, from 2009 to 2020. This study employed the GLS estimation model and found that ICE serves as a powerful catalyst for both Islamic and conventional bank to promote their financial performance. However, specific elements of VAIC, such as human capital, and structural capital are more important components for conventional banking and human and relational capital are significant factors that spur the financial performance in Islamic banking. Finally, VAIC is unpredictable and diverse in terms of spurring the bank's financial performance in Pakistan. Our findings suggest that policymakers and top management of banking should pay closer attention to VAIC components, which have the potential to spur the banking financial performance as well as keep them competitive in the financial market.

Keywords: Intellectual Capital, VAIC, Human Capital, Structural Captial, Relational capital

Introduction

Intellectual capital (IC) has emerged as a critical determinant of organisational accomplishment in today's unique business model and its efficient use helps to get a competitive advantage in the market (Aslam & Haron, 2021a). IC represents the immaterial components such as information, abilities, development, and human resources that, in general, shape a company's competitive advantage (Duho & Onumah, 2019). For banks, the critical management of intellectual capital proficiency assets has received significant attention due to the potential impact on monetary execution in exceptional ways. This effect is supported by the fact that adequately outfitting and improving IC assets can result in improved functional effectiveness, development, consumer loyalty, and long-haul manageability (A. U. Rehman, Aslam, & Iqbal, 2021). This perplexing relationship between intellectual capital proficiency and monetary execution necessitates a thorough investigation to uncover the components by which IC assets can drive banks' monetary ability (Aslam, Ur Rehman, & Iqbal, 2023).

The concept of intellectual capital efficiency (ICE) includes the prudent allocation and utilization of intellectual assets to achieve hierarchical goals, is at the heart of this relationship (Birindelli, Ferretti, & Chiappini, 2019). These assets incorporate not only the unique information and mastery moved by representatives, but also the aggregate insight implanted within the organization's way of life, cycles, and connections (Aslam, Ur-Rehman, & Iqbal, 2021). Human resources (the abilities and capacities of representatives), primary capital (the frameworks, cycles, and information of the executive's structures), and social capital (the nature of associations with partners, clients, and accomplices) are all examples of intellectual capital productivity in banks (Khalique, Bin Shaari, & Isa, 2014).

There is widespread recognition of the significance of intangible resources, particularly intellectual capital (IC), to the competitiveness and success of knowledge-based businesses. IC alludes to resources, for example, data, abilities, and information that are not reflected in budget reports but rather fundamentally affect an organization's monetary exhibition (Aslam & Haron, 2020). It is a resource for gaining an advantage over competitors in the service sector, particularly the banking sector. Small and medium-sized businesses can benefit from better financial growth and job creation when international cooperation is used effectively. Companies need to focus on talent development, brand building, and system and process integration to get the most out of IC (Lukman & Tanuwijaya, 2021). In particular, the banking industry contributes significantly to the advancement of small and medium-sized businesses and plays a significant role in a nation's financial development (Buallay, Hamdan, Reyad, Badawi, & Madbouly, 2020).

In today's knowledge-based economy, banks manage human resources by developing talent and integrating systems and processes to create and reverse their IC (Aslam & Haron, 2021a). They can improve profits and gain a competitive advantage. Organizations in the information-based economy, particularly those in the service sector like the banking industry, are said to benefit greatly from international cooperation, according to researchers (Buallay et al., 2020). As a result, for businesses to achieve long-term growth and profitability, they need to comprehend the value of their intangible resources, such as intellectual capital to spur their performance (Shamsuddin et al., 2017). Banks that concentrate on intellectual capital are better prepared to offer customized arrangements, customized administrations, and inventive items that cater to client needs (Ahmad, Amjad, & Aslam, 2018). This fosters client trust and loyalty, which translates into better client retention and strategically pitching amazing open doors, both of which help income streams. In this regard, the present study empirically evaluates how ICE spurs the financial performance of banks.

This study is unique in that it is the first to compare the financial performance of Islamic and conventional banks in Pakistan. Second, this study makes use of the most recent and up-to-date data from 2009 to 2020 from Islamic and conventional banks in Pakistan. Third, this study employs a FGLS model that takes heteroscedasticity into account. Fourth, this research focuses on the development of a conceptual narrative to explain the significance of Islamic intellectual capital in terms of Islamic ontology and epistemology, with the goal of justifying why Islamic banks should be at the forefront of intellectual capital formation. Finally, this study contends that Islamic banks should outperform conventional banks in terms of intellectual capital.

Review of Literature

Intellectual capital is an asset that significantly contributes to a company's financial performance and competitive advantage. It is a unique and irreplaceable resource that is difficult to replicate (Innayah, Fuad, & Pratama, 2021). Intangible resources are often referred to as organizational knowledge-based mental capital, which is a source of competitive advantage (Alhassan & Asare, 2016). Proper management of intellectual capital can improve a firm's performance. The level of intellectual capital influences a firm's performance, including employee skills, productivity, increased worker abilities, and increased profit (Festa, Rossi, Kolte, & Marinelli, 2021). Human capital (HC), structural capital (SC), and relational capital (RC) are the three components of IC that are generally accepted, despite the existence of various definitions of the term. Overall, the evidence suggests that IC is an important determinant of bank performance. Therefore, banks should prioritize the development and management of their IC to enhance their performance and create value for their stakeholders (Mondal & Ghosh, 2012).

The business world widely recognizes that IC is the primary source of value creation, business performance, and competitive advantage (Ousama, Hammami, & Abdulkarim, 2019). Since the 1990s, earlier studies on the IC have been conducted, and human capital was the main focus of IC scholars during this period (Shabbir et al., 2020). Studies on IC later followed these studies on intangible assets. Nichita (2019) defined intangible assets as "invisible assets." The dynamic use of an organization's intangible and tangible assets is critical to successful corporate strategies. Information-based resources such as technological, customer, and market knowledge are intangible assets (Akkas & Asutay, 2022). The use of these intangible assets must be included in business strategies. Later research in intangible assets and knowledge capital was based on this invisible asset concept.

In the past, human capital consisted only of manual workers, in contrast to modern knowledge workers. While organizations consider manual workers a cost, knowledge workers must be capital assets (Aslam, Haron, & Ahmad, 2020). Organizations need to control and reduce costs, but organizations also need to grow human capital assets. Workers who perform manual jobs may have valuable experiences, but these experiences are not portable. Knowledge workers also possess knowledge, not just experiences. Knowledge is portable and is an enormous capital asset (Onumah & Duho, 2019).

Businesses need IC because it favours business success (Akkas & Asutay, 2022). IC is highly relevant to business management. Rather than concentrating on final financial results, businesses should look deeper into the hidden factors to improve productivity and financial performance. These hidden factors are primarily intangible (Jain et al., 2023). VAIC was developed by Ante Pulic (1997) and has been used by researchers worldwide in recent years. Acuña-Opazo and González (2021) used the VAIC model to study IC's influence on a firm's performance in Pakistan. They suggest that IC plays a pivotal role in Pakistan's oil and gas sector firms' performance.

The VAIC method, according to (Xu & Liu, 2020), is ideal for statistical analysis when measuring the degree of intellectual capital consumption. The primary reason is the availability of required input data. Nawaz, Haniffa, and Hudaib (2020) determined that IC components have a statistically positive influence on actual performance, although to varying degrees. Studies worldwide have also indicated that intellectual capital has positively influenced financial performance. Earlier studies conducted in the context of the banking sector, say Indian banks (Akkas & Asutay, 2022; Aslam et al., 2023; Mahmudi & Nurhayati, 2015; Suroso & Setyawati, 2019) found mixed findings. Therefore, the

relationship between the intellectual capital efficiency and financial performance of Islamic banks is not clear. Therefore, the present study formulates the following hypothesis.

H1: There positive and significant relationship between human capital efficiency and banking financial performance.

H2: There positive and significant relationship between Structural capital efficiency and banking financial performance.

H3: There positive and significant relationship between relational capital efficiency and banking financial performance.

H4: There positive and significant relationship between VAIC and banking financial performance.

Methodology

Sample construction

Regarding data, this study uses panel data that is collected from 16 conventional banks and 5 Islamic banks listed in the Pakistan Stock Exchange, covering 12 years from 2009 to 2020. The data was obtained from financial statements, including balance sheets and profit and loss accounts, and was supplemented with manually collected data from annual reports and open data on banks' websites. The total of final samples is 252 observations, 192 for conventional banks and 60 for Islamic banks

To investigate the effectiveness of intellectual capital utilization in these banking institutions in Pakistan, multiple regression analysis was conducted using the generalised least square (GLS) method to determine the impact of all IC components on operating performance and stock market value proportion. GLS regression measures relationships between variables and determines the coefficient value to evaluate the impact as positive or negative. To address research questions, a comparative approach was utilized, which has been commonly used in prior studies examining the impact of IC and its intermediary variable VAIC on various dependent factors, including firm performance measures (Aslam, Kalim, & Fizza, 2019).

Research Variables

The purpose of this research is to examine the relationship between intellectual capital (IC) and financial performance of banks. The study utilizes several dependent variables, including return on equity (ROE) and return on assets (ROA) for financial performance are used by the prior study for the performance (Aslam, Ijaz, & Iqbal, 2016; Aslam, Khawar Shahzad, & Rehman, 2020; Mahmood, Khan, Ijaz, & Aslam, 2014). The independent variable is intellectual capital efficiency and it is measured with human capital Efficiency (HCE), structural capital efficiency (SCE), relational capital efficiency (RCR), and value-added intellectual coefficient (VAIC), similar to the (Aslam & Haron, 2020; A. U. Rehman et al., 2021). To calculate certain variables in banks, the initial step is to determine the Value Addition (VA) within the company. This is done by subtracting the cost of goods sold and the cost of labour expenses from the net sales revenue and adding the labour expenses. However, in the Extended VAIC model, additional variables, RC are included, and labour expenses are excluded from sales, marketing and distribution, and R&D expenses. Therefore, the adjusted equation for VA considers the gross margin of the output, subtracts the sales, general and administrative expenses, and then adds the labour expenses, sales, marketing, and distribution expenses (with labour expenses excluded), and R&D expenses (with labour expenses excluded). Control variables such as financial leverage (LEV), firm age in years (AGE), firm size, and gross domestic product (GDP are included in the study to limit the impact of certain factors

on bank performance. Leverage (LEV) is calculated as the debt-to-equity ratio, which is the book value of debt divided by the book value of total equity. This variable is useful in controlling for the impact of debt ratio on financial performance, as noted by Nawaz & Haniffa (2017). Firm age in years (AGE) is included to account for the effect of growth opportunities on market value, as suggested by Mondal & Ghosh (2012).

Empirical model

In this research, we employed the GLS estimation technique because taken into account because it controls the heteroscedasticity and serial correlation issue and makes causative understandings. Besides this, GLS considers the information's varying levels of changeability, assigning more weight to perceptions with lower fluctuation and less weight to those with greater variation. This encourages effective use of the available data. Furthermore, it provides more developed boundary gauges when compared to Customary Least Squares (OLS) relapse. It encourages more precise, rather than one-sided, coefficient assessors. GLS significantly modifies the standard errors of the evaluated coefficients to represent heteroscedasticity, resulting in more precise speculation testing and certainty stretch estimations. This allows for more solid, measurable deductions. Therefore, the current study prefers to use GLS. The following models are employed to analyse the relationship between ICE and the financial performance of banks.

$$ROA_{it} = \alpha_0 + \sum_{k}^{4} \beta_1 ICE_{it} + \sum_{L}^{4} \beta_2 X_{it} + \epsilon_{it} \dots\dots\dots\dots\dots 1$$

$$ROE_{it} = \alpha_0 + \sum_{k}^{4} \beta_1 ICE_{it} + \sum_{L}^{4} \beta_2 X_{it} + \epsilon_{it} \dots\dots\dots\dots\dots 2$$

In equations 1&2, where subscripts i and t denote the firm and time, respectively. ROA represents the return on asset in the model one, ROE represents a return on equity in the second model, X represents the set of control variables, and e represents the error terms that remain the same for all models. The values of k1 , k2 , k3 , k4 represent human capital efficiency, structural capital efficiency, relational capital efficiency, and VAIC, respectively, and the value of l1, l2, l3, and l4 represents bank size, leverage, bank age, and GDP, respectively. The above models remain the same for both Islamic and conventional banks.

Results and Discussions

Summary statistics and correlation structure

Table 1 shows a summary of the descriptive analysis of conventional banks' variables, which were observed from 2009 to 2020. The average profit margin of ROA is .0124 with a standard deviation of .01366, indicating that banks' profitability remained positive throughout the period. The average financial performance of ROE is 1.38 with a deviation of 5.41, suggesting that banks performed well financially during the period. The average HCE value is 23.33 with a deviation of 72.74, indicating that banks' human capital remained positive throughout the period. The average SCE value is -7.204 with a deviation of 111.68, indicating that banks' structural capital proficiency remained negative throughout the period. The average RCE value is 173.23 with a deviation of 170.65, indicating that banks' relational capital remained positive throughout the period. The average VAIC value is 194.89 with a deviation of 196.85. The average LEV value is 55.727 with a deviation of 185.033, indicating that banks' debt ratio remained approximately 55.72 throughout the period. The average SIZE value is 5.602 with a deviation of .4989, indicating the relative size of the banks. The average AGE value is 43.687 with a deviation of

6.196, indicating that banks have an average age of 43 years.

Table 1. Descriptive Statistics of Conventional Banks

Variable	Obs	Mean	Std.Dev	Min	Max
Return on Asset	192	0.012414	0.013661	-0.03812	0.078911
Return on Equity	192	1.381635	5.413017	-15.6192	24.47106
Human capital efficiency	192	23.33149	72.74719	-67.1875	657.2
Structural capital efficiency	192	-7.20404	111.6817	-1546	44.31646
Relational capital efficiency	192	173.2378	170.6529	-22.1904	1026.029
Value-added intellectual capital	192	194.8942	196.8597	-596.461	1037.276
bank size	192	5.602475	0.498922	4.28921	6.508817
leverage	192	55.72711	184.0336	-33.0727	1137.464
bank age	192	43.6875	34.99568	1	156

Table 2 presents a summary of the statistical analysis for the variables used in the study of Islamic banks. The average value of ROA is 0.0076, with a standard deviation of 0.0125, indicating a positive profitability trend for the banks during the period under consideration. Similarly, the average value of ROE is 0.5640 with a deviation of 0.8957, indicating a positive financial performance trend for the banks during the period. The average value of human capital efficiency (HCE) is 7.1287, with a deviation of 21.3194, indicating a positive trend in the banks' human capital during the period. The average value of structural capital efficiency (SCE) is 1.0320, with a deviation of 2.8286, suggesting positive structural capital proficiency for the banks during the period. The average value of relational capital efficiency (RCE) is 141.9073, with a deviation of 87.6767, indicating a positive trend in the banks' relational capital during the period. The average profit margin of VAIC is 150.801, with a deviation of 92.8600, indicating a positive financial performance trend for the banks during the period. The average value of leverage (LEV) is 31.4096, with a deviation of 31.0155, indicating a positive trend in the banks' debt ratio or financial performance during the period. The average size of the banks (SIZE) is 5.2571, with a deviation of 0.5181, suggesting a positive impact of bank size on the banks' financial performance during the period. Finally, the average age of the banks (AGE) is 13.1, with a deviation of 6.196, indicating a growth trend for the banks during the period.

Table 1. Descriptive Statistics of Islamic banks

Variable	Obs	Mean	Std.Dev	Min	Max
Return on Asset	60	0.564072	0.895715	1253333	3.565017
Return on Equity	60	0.007699	. 012545	-0.02854	0.050303
Human capital efficiency	60	7. 128745	21. 39144	-6.11628	169.1207
Structural capital efficiency	60	1.032069	2.828652	. 1821192	22.52632
Relational capital efficiency	60	141.9073	87.67676	-8.91525	495.4958
Value-added intellectual capital	60	150.801	92.86003	-13. 78727	502.5867
bank size	60	5. 257169	0.518174	4.218457	6. 180456
leverage	60	18.72711	14.0336	-3.0727	135.464

bank age	60	13. 1	6. 1965	3	27

Correlation analysis

Correlation analysis is a statistical method used to evaluate the relationship between variables. The resulting correlation coefficient ranges from -1 to 1, where values closer to 1 indicate a stronger positive correlation and values closer to -1 indicate a stronger negative correlation. In a correlation matrix, each variable is compared to every other variable, and the values in the matrix represent the correlation coefficient between them. Tables 3 and 4 show that intellectual capital efficiency variables have a mixed and moderate relationship with the financial performance of conventional and Islamic banks. Moreover, this study did not find any serial correlation ship among the variables because are variable relationship is less than 0.80.

Table 3. Correlation matrix of conventional bank variables

Variables	ROA	ROE	EHCE	ESCE	ERCE	EVAIC	SIZE	LEV	AGE
ROA	1.0000								
ROE	0.1614*	1.0000							
EHCE	-0.1055	-0.0457	1.0000						
ESCE	0.0196	0.0175	0.0450	1.0000					
ERCE	-0.0153	0.1063	0.0919	0.0969	1.0000				
EVAIC	-0.0477	0.0794	0.0746	0.0701	0.4156*	1.0000			
SIZE	0.0611	0.1987*	-0.1675*	0.1752	-0.1887*	0.2359*	1.0000		
LEV	0.2097*	0.9252*	0.0621	0.9205	-0.0517	0.1143	0.0188	1.0000	
AGE	0.1378*	0.1739*	-0.1446*	0.1674*	0.0007	-0.1451*	-0.0760	-0.0793	1.0000

Table 4. Correlation matrix of Islamic bank variables

Variables	ROA	ROE	EHCE	ESCE	ERCE	EVAIC	SIZE	LEV	AGE
ROA	1								
ROE	0.8544*	1							
EHCE	0.0127	0.1004	1						
ESCE	-0.0535	-0.0714	-0.2624*	1					
ERCE	0.3826*	0.5044*	0.4202	0.2923*	1				
EVAIC	0.3623*	0.4978*	0.4465*	0.2628*	0.3663*	1			
LEV	0.7432	0.6737*	0.0478	0.7327	-0.0002	0. 1105	1		
SIZE	0.7475*	0.7214*	-0.0225	0.5943*	0.0801	0.2898	-0.1	1	

AGE	0.7438*	0.6570*	-0.0262	0.6218*	0.058	0.2473*	-0.2127	0.3419*	I

Empirical results

Table 5 presents the findings of the relationship between ICE and the financial performance of Islamic and conventional banks in Pakistan. We used the GLS model, with Panel A displaying the results for conventional banks and Panel B displaying the results for Islamic banks. GLS is chosen because our data is a panel. By using this method, we can minimize error time-invariant compared to ordinary least squares (OLS).

In terms of intellectual capital efficiency, the results show that HCE positive and significant (p-value < 0.01) relationship with financial performance with conventional banks, similar to the findings (Alhassan & Asare, 2016) from Africa and (A. U. Rehman et al., 2021) from OIC countries. These results indicate that higher investment in human capital efficiency help to promote the financial performance of conventional banks because well-trained human is the most significant resource for any organization to enhance their performance. On the other side, it has a negative and significant relationship with ROE in Islamic banks, similar to the finding (Aslam et al., 2023). This negative association might be because of overstaffing which can lead to negative financial outcomes. While an adequately skilled and competent workforce is critical for a bank's operations, a focus on increasing human capital efficiency may result in an overabundance of employees relative to the tasks at hand. This can result in increased labour costs, reduced operational agility, and hampered cost-cutting efforts. In such cases, a bank's financial performance may suffer as a result of increased overhead expenses that do not contribute to increased revenue generation.

Table 5. ICE and Financial Performance in Conventional and Islamic Banks

Variable	Panel A Conventional banks		Panel A Islamic banks	
	ROA	ROE	ROA	ROE
Human capital efficiency	0.0383***	0.046***	0.0077*	-0.0493
Structural capital efficiency	0.1734	-0.0036***	0.0105**	0.0074***
Relational capital efficiency	0.1045***	0.0069***	0.0013	0.0101**
VAIC	0.1037***	0.0187**	0.0299***	0.1013***
Log of total assets	0.029***	0.0015***	-0.0008	0.0099**
leverage	-0.0178***	0.0174***	0.0130***	-0.002**
Bank age	0.02058**	0.0132**	0.0095***	-0.0063
Gross domestic product	0.0205	0.0019*	0.0094***	0.0059***
Year dummy	Yes	Yes	Yes	Yes
Constant	0	0	-0.2049**	0.0095***
N. of observations	192	192	60	60

Structural capital efficiency has a positive and significant relationship with the financial performance of

conventional banks. The results are consistent with the findings of (Aslam & Haron, 2021b; Khalique, Shaari, & Isa, 2011; Rehman, Rehman, Usman, & Asghar, 2012), who stated that higher infrastructure leads to higher performance. As a result, the positive impact of structural capital within the banking sector is critical in shaping financial performance outcomes. Structural capital refers to an assortment of intangible assets such as processes, systems, patents, proprietary knowledge, and organizational structure, all of which contribute to the bank's operational efficiency and effectiveness. In addition, relational capital has a negative and significant relationship with financial performance in terms of ROE of conventional banks, but it has a positive and significant relationship with both ROA and ROE performance of Islamic banks. The present results are parallel to the findings of (Aslam et al., 2023; Buallay et al., 2020). This indicated that relational capital is a significant component of ICE to spur the financial performance in Islamic banks. Relationship capital refers to intangible assets associated with a bank's external relationships, stakeholder commitments, reputation, and trust in the market and society. Thus, efficient relationship capital management can have a significant positive impact on Islamic banks' financial performance. First and foremost, strong relationships and a positive market reputation can foster customer trust and loyalty. Customers are more likely to choose Islamic banks that have established a trustworthy reputation, resulting in increased customer loyalty and a larger customer base as a result it spurs the financial performance of Islamic banks.

Lastly, VAIC has a positive and significant relationship with financial performance in both panels of Islamic and conventional banks. These results are in line with the findings (Acuña-Opazo & González, 2021; Xu & Liu, 2020), they stated that value-added intellectual capital is an integral part of the organization's success. This positive relationship demonstrates that VAIC serves as a strong impetus for advancing financial execution through the use of immaterial resources. Furthermore, it encourages banks to convey dominant administrations, improve asset portions, and gain an advantage, ultimately pushing their general exhibition and achievement.

In terms of control variables, bank size has a positive and significant relationship with both Islamic and conventional banking financial performance, in line with the findings (Aslam & Haron, 2021b; Aslam, Haron, & Tahir, 2019). This indicates that large-size banks invest more in their intellectual capital resources to gain higher financial performance. Leverage has a mixed association with the financial performance of Islamic and conventional banks, similar to the findings (Aslam, Ashraf, & Iqbal, 2022; Aslam, Azam, & Iqbal, 2020). This indicates that banks having more debt are performing less performance it might be because of bad loans or higher cost of debt management. Bank age has a positive and significant relationship with financial performance in both banking systems, supporting the findings (Tahir, Hussain, Iqbal, Aslam, & Masri, 2020). Last, GDP has a positive and significant relationship with banking financial performance. These findings corroborate those of (Ahmad, Aslam., Haq, & Billah, 2019) who stated that high GDP corresponds to greater national growth, which improves the financial stability of Islamic banks.

Conclusion

This study contributes to the existing research by examining how intellectual capital efficiency affects the financial performance of Pakistani banks using an VAIC model. For this purpose, this study used 12 years of data from 2009 to 2020 from Islamic and conventional banks in Pakistan. This study

employed the GLS estimation model to analyse the relationship. The findings show that the VAIC significantly spurs the financial performance of Islamic and conventional banks. However, specific elements of VAIC, such as human capital, and structural capital are more important components for conventional banking and human and relational capital are significant factors that help to spur the financial performance in Islamic banks in Pakistan. Finally, VAIC is unpredictable and diverse in terms of spurring the bank's financial performance in Pakistan. An essential combination of human resources, primary capital, and social capital can result in increased consumer loyalty, functional effectiveness, executive risk, and brand steadfastness. Regardless, all aspects of VAIC is critical to achieving supported and adjusted monetary development in the unique financial scene.

The study suggests that conventional banks require increased investments in various forms of ICE, such as human capital and relational capital establish significant relationships with their financial performance. Similarly, the study recommends that Islamic banks should invest in human capital and structural capital to enhance their financial performance. Islamic banks should provide employees with security, hire the right people, form effective teams, offer fair and performance-based compensation, provide relevant training, and establish a flat and egalitarian organization to enhance human capital efficiency. They must use debt financing, reduce costs, increase sales, dispose of assets, and improve human efficiency. They should use advertising to raise awareness and build strong relationships to improve relational capital. They should reward innovation, encourage risk-taking, encourage openness, and look for creativity in applicants to improve innovational capital efficiency. They must enhance their learning and cooperation strategies, vision, culture, data systems, databases, and licenses to enhance structural capital. However, the study has limitations due to the small sample size and control factors used. The findings of this study are limited to the banking sector and future studies could be carried out in a broader amount of time and concentrate on a different industry or a more specific sub-sector.

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