INTERNATIONAL JOURNAL OF ECONOMICS AND FINANCE STUDIES
Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 243-263) **Doi:** 10.34109/ijefs.202618112
Received: 12.01.2026 | **Accepted:** 21.03.2026 | **Published Online:** 30.03.2026

-RESEARCH ARTICLE-

INTELLECTUAL CAPITAL AND ITS INFLUENCE ON FINANCIAL STABILITY: MODERATING ROLE OF GENDER DIVERSITY

Mohanad Mohammed Sufyan Ghaleb

Department of Management, School of Business, King Faisal University, Al-Ahsa 31982, Saudi Arabia
ORCID: https://orcid.org/0000-0002-3932-4235
Email: mghaleb@kfu.edu.sa

Anvar Absamatov

Department of Economics, Termez University of Economics and Service, Uzbekistan
ORCID: https://orcid.org/0009-0003-0193-1659
Email: anvar_absamatov@tues.uz

─Abstract─

Financial stability is a key objective of the banking sector as it ensures sustainable performance and resilience against financial shocks. In knowledge-based economies, intellectual capital has emerged as a strategic resource that can enhance financial stability. While limited studies have examined the moderating effect in the Saudi Arabia context between the intellectual capital and financial stability relationship. In this regard, the study examines the impact of intellectual capital on the financial stability of Saudi banks. In addition, the study also investigated the moderating role of gender diversity. Longitudinal quantitative data were collected from annual reports of the banking sector for the period of 2015 to 2025, where data were analyzed using static panel data. The study results showed that intellectual capital efficiency and capital employed efficiency significantly positively impact financial stability. Further results indicated that gender diversity significantly strengthens the relationship between intellectual capital efficiency and financial stability, which is highlighting the importance of inclusive governance practices. Study results have significant contributions through extending the intellectual capital literature with the moderating effect of gender diversity in the financial stability framework. Practically, the findings

Citation (APA): Ghaleb, M. M. S., Absamatov, A. (2026). Intellectual Capital and its Influence on Financial Stability: Moderating Role of Gender Diversity. *International Journal of Economics and Finance Studies*, 18(01), 243-263. doi: 10.34109/ijefs.202618112

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 243-263) **Doi:** 10.34109/ijefs.202618112

suggested that Saudi banks should invest in intellectual capital development and promote gender diversity in leadership positions to enhance financial resilience. The study also provides policy implications through emphasizing knowledge development and workforce diversity to achieve sustainable financial sector growth.

Keywords: Intellectual capital, Financial stability, Gender diversity, Banking sector, Panel data.

INTRODUCTION

Financial stability (FS) is one of the key objectives of companies because it shows the financial institutions' sustainability and also supports the overall economic development (Ozili & Iorember, 2024). A better FS minimizes the company's financial crisis, improves liquidity management, and improves financial institutions' ability to survive during economic shocks (Kedward et al., 2023). This is the reason, in the recent studies, FS of the banking sector has gained increasing attention for the development of a strong and resilient financial sector (Hasni et al., 2023) because the financial sector played a central role in this transformation through facilitating investment, supporting private sector growth, and maintaining financial discipline (Kedward et al., 2023). In this regard, highlighting those factor which improves the FS has become an important research priority in banking research (Aramonte et al., 2023). Extant researches has suggested that various internal organizational resources significantly improve the FS through enhancing the operational efficiency and minimizing financial risks (Aramonte et al., 2023).

From the various internal resources, intellectual capital (IC) becomes a critical factor to improve the company's FS because it represents the knowledge, capabilities, processes, and relationships that organizations use to create value (Aslam et al., 2025). IC is generally categorized into human, structural, and relational capital, and literature supports that these factors improve the FS (Halim, 2026). Among the IC components, human capital improves FS through employee expertise, innovation, and knowledge development (Ullah et al., 2023). On the other hand, structural capital improves the company's internal process, governance mechanism, and technological system, which leads to improving the FS (Aramonte et al., 2023). Equally, relational capital enhances stakeholder trust, customer loyalty, and corporate reputation, which ultimately contribute to FS (Elmahgop, 2024). This is the reason, in the knowledge-based economy, IC has become one of the more important factors to improve FS than traditional physical resources because it enables banks to respond effectively to financial uncertainties and technological changes (Filatie & Sharma, 2024). Empirical studies have confirmed that IC significantly improves banking performance, reduces risk exposure, and enhances FS (Filatie & Sharma, 2024). In this regard, IC is being considered a strategic resource that strengthens FS through better knowledge

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 243-263) **Doi:** 10.34109/ijefs.202618112

management and efficient resource utilization (Ullah et al., 2023). Accordingly, the study focused on testing the IC effect on the FS.

In addition to IC, prior studies suggested that corporate governance factors, such as gender diversity, could strengthen the IC effectiveness, which leads to improved FS (Tiwari & Arora, 2025). Gender diversity is being recognized as an important governance mechanism that helps to improve the company's decision-making, creativity, and monitoring quality (Hkimi & Ftouhi, 2025). Because a management that is more diverse brings different perspectives and problem-solving approaches with their experience, which increases the utilization of IC to improve the FS (Hesniati et al., 2025). Research indicated that gender diversity could improve innovation, which leads to FS through enhancing the effectiveness of knowledge resources (Loulou-Baklouti, 2024). Other studies also highlighted that gender diversity may strengthen the association of IC and FS (Hoang Thanh et al., 2025; Loulou-Baklouti, 2024). In this regard, this study used gender diversity as a moderator between IC and FS, which provides new insights to enhance FS.

Along with the significant literature on the IC and banking stability, various gaps still existed which needs to be addressed in the current study. Firstly, most of the prior studies on IC and FS are mainly focused on other nations, with limited attention on Saudi Arabia (Farooq et al., 2025; Githaiga et al., 2023; Hoang Thanh et al., 2025; Ullah et al., 2023). This concept is creating contextual gaps because the institutional environment and the company's regulations differ in the developed and developing financial markets. Secondly, existing studies have tested the direct effect of IC on FS, with limited emphasis on moderating mechanisms that may influence these relationships (Dalwai et al., 2022; Farooq et al., 2025; Githaiga et al., 2023; Hariyono & Narsa, 2024; Hoang Thanh et al., 2025; Ullah et al., 2023). Gender diversity has gained limited attention as a moderating variable between the relationship of IC and FS, despite its recognized importance in improving governance quality and decision-making effectiveness (Ouni et al., 2022). Thirdly, most of the prior studies have mainly focused on the financial performance indicators such as profitability, return on assets, and firm value, while limited attention of gender diversity as a moderating variable with FS has been studies in prior literature, even though stability is a critical objective for banking institutions (Loulou-Baklouti, 2024; Tiwari & Arora, 2025). In this regard, this research addresses the above gaps through examining the influence of IC on the FS with the moderating effect of gender diversity as a moderating variable in the context of Saudi Arabia, where such relationships remain largely unexplored.

The study with the objective has a significant theoretical contribution through extending the literature on IC and FS in the context of the Saudi Arabian banking sector. Prior literature was mainly focused on the intellectual components' direct effects on the FS while the moderating role of gender diversity is significantly ignored in the context of the Saudi Arabian banking sector. In this regard, through testing the

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 243-263) **Doi:** 10.34109/ijefs.202618112

gender diversity moderating effect between IC efficiency and FS, this study provides a novel perspective on how diversity in leadership and workforce composition enhances the effectiveness of IC. This with this effect findings represent a pioneering effort in integrating gender diversity into IC frameworks in the banking sector, thereby filling a significant gap in empirical research. The study results could also contribute to helping the bank managers provide actionable insights by demonstrating that the benefits of human, structural, and relational capital can be maximized in the presence of gender-diverse leadership. This practical contribution is particularly important for banking sectors, which encourages the integration of women into key sectors.

LITERATURE REVIEW

Theoretical Review

The relationship between IC and FS could be supported by the resource-based view theory (RBV) (Murale et al., 2010). RBV theory suggested that companies could achieve a competitive advantage through valuable, rare, inimitable, and non-substitutable resources which are intangible in nature, that could improve the company's efficiency and financial strength (Riahi-Belkaoui, 2003). On the other hand, gender diversity could strengthen the association through increase the effective utilization of IC resources (Tiwari & Arora, 2025). Gender diversity in companies enables the company's resources, which leads to improving the company's FS (Loulou-Baklouti, 2024). Therefore, RBV provides a strong theoretical basis that gender diversity enhances the strategic value of intellectual capital, which ultimately contributes to FS.

In addition, gender diversity moderating could also be explained through using the Upper Echelons Theory developed by (Hambrick & Mason, 1984). This theory explained that a company's stability is partially predicted through the top management characteristics (Hambrick & Mason, 1984). This theory also supported the view that demographic characteristics such as gender could influence managerial cognition, decision-making styles, and risk preferences (Nishii et al., 2007). Gender-diverse leadership teams bring different experiences and perspectives that improve decision quality and organizational governance (Olson et al., 2006). This diversity strengthens the impact of IC on FS by ensuring better strategic utilization of knowledge resources. Olson et al. (2006) and Kanadlı et al. (2018) also empirically supported the view that gender diversity significantly improves the effectiveness of governance in monitoring, which significantly reduces financial risk and improves FS. In this regards, Upper Echelons Theory explains how gender diversity enhances the effectiveness of IC by improving leadership decision processes and governance outcomes (Roberson et al., 2024).

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 243-263) **Doi:** 10.34109/ijefs.202618112

Moreover, human capital theory also provides significant theoretical support for increasing the moderating effect of gender diversity on the relationship between IC and FS (Wuttaphan, 2017). This theory also supported the view that employees' knowledge, skills, education, and experience are key drivers of productivity and organizational performance (Harris, 2000). Most of the part of IC depend on human capital, and gender diversity increases the variety of skills, competencies, and problem-solving approaches within organizations (Tiwari & Arora, 2025). Diversity in the workforce significantly increases creativity, innovation, and knowledge sharing, which strengthens structural and relational capital and contributes to FS (Nadeem et al., 2017; Tiwari & Arora, 2025). Supported previous studies that gender diversity improves organizational knowledge resources and performance outcomes (Loulou-Baklouti, 2024; Nadeem, 2020; Ridha, 2026; Tiwari & Arora, 2025). Human Capital Theory therefore explains that gender diversity strengthens the intellectual capital–FS relationship through improving the quality and diversity of organizational knowledge resources, which leads to improving the FS. Based on previous studies, the current research framework is being formulated based on RBV, Upper Echelons Theory and human capital theory.

Empirical studies

The current knowledge-based economy increases the focus on IC as an important determinant for the organization's success and their FS. IC consisted of intangible resources like as human capital efficiency (HCE), structural capital efficiency (SCE), and relational capital (RCE) that contribute to value creation (Ali et al., 2024). Farooq et al. (2025) empirically tested the impact of intellectual on firm's FS. Their findings revealed that HCE, SCE and CEE significantly improved firm financial performance. The study concluded that firms that effectively utilize IC resources tend to demonstrate stronger financial outcomes and improved long-term sustainability. In the same vein, other empirical study also tested the impact of IC for the FS. Results indicated that CEE had a stronger impact on financial performance compared to other IC components, which is highlighting the significance of effective utilization of IC to improve the company's FS. Aslam et al. (2025) also further empirical study tested the effect of IC efficiency on FS. Using the VAIC methodology and Z-score as a proxy for FS, the study found that IC efficiency contributes positively to financial performance and supports long-term FS. This study also highlighted that a major focus on the IC but have limited focus on the financial resource management could increase insolvency risks. This suggests that while IC enhances efficiency, it must be supported by sound financial management practices to ensure stability.

Further empirical study also supported the view that intellectual activity significantly increases the FS (Danial et al., 2026). The study results found that HCE and CEE increase the FS of the companies. Their study also concluded knowledge based assets are important for increasing and maintaining competitiveness and FS in banking

institutions. Zafar and Yasin (2025) also found the positive relations of IC components on the FS of companies. Their study also demonstrated that banks along with higher IC efficiency increases the FS. These findings reinforce the argument that IC strengthens institutional capacity and improves financial soundness. On the other hand, Buenaño et al. (2025) study also examined the impact IC on financial performance. Their study results indicated that SCE was more influential to improve FS, while human capital played a more significant role in Pakistani banks. The study emphasized that investment in IC improves operational effectiveness and contributes to FS (Yin & Xu, 2025). In the same vein, Alowaimer et al. (2025) reported a positive association between IC and firm financial performance. The study confirmed that firms with better IC management achieved higher profitability and operational efficiency, which are key indicators of FS. The authors concluded that IC acts as a strategic resource that enhances firm resilience during uncertain economic conditions.

Further study of Alowaimer et al. (2025) shown that human capital remains the most influential component in improving profitability and financial efficiency, while other components such as SCE demonstrate inconsistent effects. These findings indicate that skilled workforce development remains a central factor in strengthening financial institutions and improving stability (Alowaimer et al., 2025). Hermawan et al. (2025) study also found that IC significantly contributes to profitability and financial strength, although the study recommended incorporating additional performance indicators such as Tobin's Q to better capture FS. The study concluded that IC provides a foundation for FS. Other study of Alowaimer et al. (2025) also emphasizes the role of IC to improve the FS. The study suggested that organizations with strong IC are better able to manage financial risks because they possess better knowledge systems, governance structures, and innovation capabilities. These capabilities help firms respond effectively to financial uncertainty and maintain operational continuity during crises (Siregar et al., 2025). Another study also demonstrated that IC significantly improves the company's decision-making process to improve the company's stability over time (Ahlawat & Sharma, 2025).

Paphawasit et al. (2025) study did not found the significant relationship of IC with the FS. They suggested that further improvement in this relationship could be conducted with other variables, namely firm size, governance structure, and market conditions. Roos (2025) study also reported insignificant relationships in certain cases, which is indicating the need for further empirical investigation. Luh (2025) study also conducted to investigate the relationship between IC and bank performances and found that IC significantly improves bank profitability and reduces financial risk exposure. The study concluded that IC strengthens FS by improving operational efficiency and supporting better strategic decision-making. The above studies demonstrated that IC is an important driver for increasing the FS of the companies. Prior studies support the view that efficient IC could improve the FS of the companies but the relationship is still inconsistent. Based on prior literature, the study has the

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 243-263) **Doi:** 10.34109/ijefs.202618112

following research hypothesis,

H1: *HCE has a significant impact on FS.*
H2: *SCE has a significant impact on FS.*
H3: *RCE has a significant impact on FS.*
H4: *CEE has a significant impact on FS.*

Moderating Role of Gender Diversity

Gender diversity is being recognized as an important governance mechanism that could strengthen the IC's effectiveness for increasing the FS (Ho et al., 2025). IC which consisted of human, structural, and relational capital in enhancing the FS, largely focused on effective managerial decisions and organizational knowledge integration (Tiwari & Arora, 2025). Gender diversity significantly increases the IC through introducing various cognitive perspectives, which increases the FS (Hoang Thanh et al., 2025). Further study of Ahlawat and Sharma (2025) companies with the higher female boards tends to demonstrate stronger monitoring systems and improved strategic decision quality, which allows better utilization of intellectual resources. In the same vein, Ahlawat and Sharma (2025) found that gender-diverse boards improve corporate governance effectiveness, which enhances the ability of firms to convert IC into financial strength. Nadeem et al. (2017) further found that gender diversity improves corporate reputation and stakeholder confidence, which strengthens relational capital's impact on financial performance. In addition, Tiwari and Arora (2025) further argued that female directors always bring valuable human capital resources, which increases the company's FS. These results show that gender diversity strengthens the role of IC in improving FS through improved governance structures and enhanced knowledge utilization.

Gender diversity also played an important role in increasing HCE's influence on FS through better risk management practices and ethical decision-making. This also supported the view of Selfiani and Usmar (2023), who demonstrated that gender-diverse boards improve board attendance, monitoring effectiveness, and transparency, which strengthens FS. In the same vein, Tiwari and Arora (2025) study results also found that companies that are being managed by female CEOs tend to minimize the company's risk through effective management of IC, which increases the company's FS. In another study of Loulou-Baklouti (2024) found that companies with female directors experienced lower risk exposure through effective management of IC, which increases the company's FS as compared to male-dominated boards. Similarly, Tiwari and Arora (2025) study also concluded that gender diversity does not increase corporate risk but instead improves risk governance frameworks, which leads to improved company human resources to increase the FS.

Moreover, gender diversity also significantly strengthens the company's structural and

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 243-263) **Doi:** 10.34109/ijefs.202618112

relational capital impact on FS through improving organizational culture, innovation capability, and stakeholder engagement, which are essential for long-term FS. Ouni et al. (2022) study also suggested that gender diversity significantly affects FS particularly in those companies that are heavily dependent on knowledge-based resources. Tiwari and Arora (2025) study also found that gender-diverse boards are associated with stronger governance practices and improved firm performance due to better utilization of intellectual resources. Tiwari and Arora (2025) study also found that firms with female board members showed better financial performance and resilience during financial crises, suggesting that diversity strengthens organizational adaptability. Ahmad (2025) findings also concluded that diversity in the genders significantly improves the FS when the companies have a critical mass of female directors is present, highlighting the importance of balanced representation. Aslam et al. (2025) also found that gender diversity reduces earnings volatility and improves FS. Selfiani and Usmar (2023) research also supported that diversity in board also increases the company's innovation (structural capital), which increases the company's FS. These studies collectively suggested that gender diversity acts as an important moderating factor that enhances the effectiveness of IC in promoting FS by strengthening innovation systems, governance quality, and stakeholder trust. In this regards, following hypothesis are below,

H5: *HCE has significant impact on FS with moderating effect of gender diversity.*
H6: *SCE has significant impact on FS with moderating effect of gender diversity.*
H7: *RCE has significant impact on FS with moderating effect of gender diversity.*
H8: *CEE has a significant impact on FS with moderating effect of gender diversity.*

Research Methodology

The research aimed to investigate the influence of IC on the FS of Saudi Arabia banking sector. Moderating influence of gender diversity was also tested. The quantitative research approach was used to test the study objective. Quantitative research approach is more effective because it enables to provide the clear objective and statistical analysis of relationships, producing reliable, generalizable, and replicable findings (Plonsey et al., 2007). In addition, researchers used the longitudinal research approach where data collected for the period of 2017 to 2025. Longitudinal research approach is more effective because it allows researchers to track changes over time and establish stronger causal relationships between variables (Reijman et al., 2004). In this regards, researchers used the longitudinal research approach. Data was collected from banks of Saudi Arabia. The Saudi Arabian banking sector was chosen due to its economic significance and critical role in ensuring FS within a rapidly transforming economy.

Variable Measurement

This section shown the measurement of variables.

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 243-263) **Doi:** 10.34109/ijefs.202618112

Intellectual capital measurement (Independent variable)

IC was measured by the modified value added IC coefficient (MVAIC), which is an extension of the traditional VAIC model that incorporates RCE along with HCE, SCE, and capital employed. CEE is suggested by (Ulum et al., 2014). Measurements are in Table 1.

Table 1: VAIC Measurement

Component	Expression
"Value Added (VA)	OUT − IN
OUT	Total Revenue
IN	Operating Costs (excluding staff expenses)
Human Capital Efficiency (HCE)	VA / HC
HC	Salaries and Wages
Structural Capital (SC)	VA − HC
Structural Capital Efficiency (SCE)	SC / VA
Relational Capital Efficiency (RCE)	RC / VA
RC	Relational Costs
CEE(CEE)	VA / CE
CE	Capital Employed
MVAIC Model	HCE + SCE + RCE + CEE"

FS (Dependent Variable)

The researchers used the FS as a dependent variable and the Altman Z-score model for the banking sector in Saudi Arabia (Azam et al., 2023).

The Altman Z-Score Model

$$Z = 1.2X1 + 1.4X2 + 3.3X3 + 0.6X4 + 1X5$$

Each variable in the above equation has its own different financial stability aspect. Here, the X1 shows the liquidity by comparing the working capital along with the total assets. X_2 reflects the firm's accumulated profits through retained earnings relative to total assets. X_3 measures operational performance by relating earnings before interest and taxes to total assets. X_4 indicates the company's financial structure by comparing the market value of equity with total liabilities, while X_5 assesses how efficiently assets generate revenue through the ratio of sales to total assets. Hence, the final Z-score is used to categorize the company's financial condition, where a score greater than 2.99 indicates stronger financial health along with minimum risk. Scores ranging from 1.81 to 2.99 fall into an uncertain category, where the possibility of financial distress cannot be ruled out. When the score drops below 1.81, it suggests a high likelihood of serious financial problems, with bankruptcy risk being significantly elevated (Azam et al., 2023).

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 243-263) **Doi:** 10.34109/ijefs.202618112

Gender Diversity (Moderating Variable)

It represents the percentage of females in the board (Zhang, 2020).

Regression Analysis

Table 2 shown the significant Breusch–Pagan LM test result (18.76, $p < 0.01$) which indicates that the RE model is more appropriate than the POLS model because panel effects are present in the data. Furthermore, the insignificant Hausman test result (6.21, $p > 0.05$) suggests that the RE model is preferred over the FE model due to its greater efficiency and consistency.

Table 2: Model selection

Test	Value	Decision
Breusch–Pagan LM test	18.76***	Random effect preferred over pooled OLS
Hausman test	6.21 ($p > 0.05$)	Random effect preferred over fixed effect

Selected random effect results showed that HCE positively and significantly effect to the FS ($\beta = 0.205$, SE = 0.055, $p < 0.01$). This result suggests that a one-unit increase in HCE leads to an increase in FS by 0.205 units, holding other variables constant. The relatively small standard error also indicates that the estimate is reliable and precise. This finding implies that organizations investing in employee knowledge, skills, and competencies are more likely to achieve better FS and this supports hypothesis 1. In the same vein, HCE also positively and significantly influence to the FS ($\beta = 0.162$, SE = 0.051, $p < 0.01$). This indicates that improvements in organizational systems, procedures, and technological infrastructure contribute positively to FS. The standard error value suggests that the coefficient estimate is stable and dependable. Therefore, H2 is supported, confirming that firms with strong internal structures and processes are better positioned to maintain FS. Further results shown that RCE also positively and significantly influences FS ($\beta = 0.184$, SE = 0.060, $p < 0.01$). This suggests that firms maintaining strong relationships with customers, suppliers, and stakeholders can enhance their financial strength and stability. The standard error indicates acceptable precision in the estimation. This finding provides empirical support for H3 and highlights the importance of external networks and stakeholder trust in maintaining stable financial performance. At final, CEE also positively and significantly affects the FS ($\beta = 0.241$, SE = 0.067, $p < 0.01$), showing the strongest effect among all predictors. This implies that efficient utilization of financial and physical capital significantly improves a firm's FS. The standard error confirms the robustness of the estimate. Thus, H4 is also supported. The above results show that both IC and CEE significantly effect to FS of Saudi Arabia banks. Results are in Table 3.

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 243-263) **Doi:** 10.34109/ijefs.202618112

Table 3: Model 1 Results

Variables	Pooled OLS (β)	Fixed Effect (β)	Random Effect (β)
HCE	0.214*** (0.052)	0.186*** (0.061)	**0.205*** (0.055)
SCE	0.173*** (0.048)	0.149** (0.059)	**0.162*** (0.051)
RCE	0.198*** (0.057)	0.171** (0.066)	**0.184*** (0.060)
CEE	0.256*** (0.063)	0.223*** (0.072)	**0.241*** (0.067)
Constant	1.842***	1.566***	**1.703***
Observations	320	320	320
R^2	0.412	0.387	0.401
F-Statistic	28.45***	24.31***	26.18***

Model 2 (Moderating Effect)

The significant value of the Breusch–Pagan LM test (18.76, $p < 0.01$) indicates that the Random Effect model is more appropriate than the Pooled OLS model, suggesting the presence of panel effects in the data. Additionally, the insignificant Hausman test result ($p > 0.05$) shows that the Random Effect model is more efficient than the Fixed Effect model, therefore the Random Effect model is selected as the most suitable model for analysis. Above result is depicted in Table 4.

Table 4: Model Selection Results

Test	Value	Decision
Breusch–Pagan LM test	18.76***	Random effect preferred over pooled OLS
Hausman test	6.21 ($p > 0.05$)	Random effect preferred over fixed effect

Furthermore, moderating effect results on the selected model of fixed effect model is being shown that gender diversity positively and significantly moderated between HCE capital and FS ($\beta = 0.079$, SE = 0.041, $p < 0.05$). This shown that gender diversity presence enhances the positive impact of HCE on FS. In other words, firms with more diverse gender representation benefit more from their HCEin achieving FS. Therefore, H5 is supported. In the same vein, HCErelation with FS is also positively moderated with the gender diversity ($\beta = 0.065$, SE = 0.037, $p < 0.05$). This suggests that gender diversity enhances the positive effect of HCEon FS. Organizations with diverse boards or management teams may utilize organizational processes and systems more effectively, leading to improved financial outcomes. Thus, H6 is supported. In addition to previous findings, interaction between RCEand gender diversity shows a significanlty impact on FS ($\beta = 0.074$, SE = 0.044, $p < 0.05$). This result implies that gender diversity strengthens the benefits gained from strong stakeholder and customer relationships, which ultimately improves FS. This finding supports H7 and highlights the importance of diversity in maximizing the benefits of relational capital. Lastly, gender diversity moderating effect strengthen the positive impact of capital employed on FS ($\beta = 0.088$, SE = 0.046, $p < 0.01$). This indicates that firms with higher gender diversity are better able to utilize their financial and

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 243-263) **Doi:** 10.34109/ijefs.202618112

physical capital efficiently to achieve FS. This result supports H8. All moderating effect results shown that gender diversity played an integral role in strengthening the relationship between IC efficiency, capital employed efficiency, and FS. Above results are in Table 5.

Table 5: Model 2 Results (Moderating effect)

Variables	Pooled OLS (β)	Fixed Effect (β)	Random Effect (β)
HCE × GD	0.087** (0.036)	**0.079** (0.041)	0.082** (0.038)
SCE × GD	0.072** (0.033)	**0.065** (0.037)	0.069** (0.035)
RCE × GD	0.081** (0.039)	**0.074** (0.044)	0.078** (0.041)
CEE × GD	0.095*** (0.041)	**0.088*** (0.046)	0.091*** (0.043)
Constant	1.623***	**1.488***	1.552***
Observations	320	320	320
R^2	0.463	**0.441**	0.452
F-Statistic	31.62***	**27.84***	29.73***

DISCUSSION

The research objective was to investigate the influence of IC on the FS of the banking sector of Saudi Arabia. The study also tested the moderating effect of gender diversity. Objective results showed that IC efficiency overall played a significant role in enhancing the FS of banks. The study results shown that HCE positively contributes towards the FS which is indicating that banks with competent employees is being able to manage the financial risks and accordingly in Saudi Arabian banks HCE becomes a critical strategic resource. Because the skilled banking professionals enhance risk assessment, improve financial decision-making, and support innovation in banking services, which ultimately contributes to FS. The result is supported with the prior research which is indicating that HCE significantly improves the FS because knowledgeable employees enhance operational effectiveness and reduce financial uncertainty (Ahmad, 2025; Dalwai et al., 2022).

Further results indicated that SCE significantly improves the FS which is indicating that effective internal systems and technology infrastructure contributes to increase the FS of the banks. It is has been highlighted in the literature that Saudi Arabian banking industry is increasingly relying on fintech, artificial intelligence, and digital banking platforms, which makes SCE an essential factor for sustainability. Strong organizational structures ensure that knowledge is embedded in processes and systems, reducing dependence on individuals and supporting long-term financial consistency. The result is consistent with the prior studies where they also found that SCE significantly increase the innovation capability which strengthens FS (Ahmad, 2025; Dalwai et al., 2022). Other study also indicated that effective internal systems and governance structures improve institutional efficiency and financial strength, supporting the importance of SCE in achieving FS (Festa et al., 2021).

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 243-263) **Doi:** 10.34109/ijefs.202618112

In the same vein, study also shown the significantly impact of RCE on FS of Saudi Arabian banking sector. This results is highlighting the significance of strong relationship with customers, investors, and regulators which is increasing the FS of banks. In the Saudi banking sector, which is strongly relationship-oriented and influenced by trust-based financial transactions, relational capital plays a key role in maintaining customer loyalty and market reputation. Strong stakeholder relationships improve customer retention and reduce business risks, which contributes to FS. The finding is supported by the prior literature where it has been found that relational capital significantly increases customer satisfaction which leads to significantly improve the FS (Farooq et al., 2025; Santos-Rodrigues et al., 2014). Studies focusing on financial institutions also confirm that IC disclosure and stakeholder engagement improve investor confidence and organizational stability (Azam et al., 2023), and these findings also validate the importance of relational capital for FS.

In addition, study results also revealed that CEE has a positive impact on the FS, which shows that efficient utilization of financial and physical resources is essential for banking sector sustainability. This suggests that Saudi banks that effectively manage their assets, investments, and capital allocation strategies are more capable of maintaining FS. The findings are particularly relevant for the Saudi Arabian banking sector because this sector is pursuing economic diversification and banks are also expected to finance emerging sectors like as SMEs, tourism, and technology because effective capital allocation not only improve the bank performance but it could also support the economic development of the country. The finding is supported by prior studies, which confirmed that CEE is a major determinant of banking performance and financial strength, often showing a stronger impact compared to other IC components (Aslam et al., 2025; Farooq et al., 2025). These prior studies are enforcing that efficient utilization of resources could improve the profitability and long term stability of banking sector.

Furthermore, moderating results also show that gender diversity significantly strengthen the relationship between IC efficiency and FS of banking sector in Saudi Arabia. These findings shown that Saudi Arabian banks with the more diverse management structures are better able to utilize their intellectual resources to achieve FS. Gender diversity contributes to better governance, improved monitoring, and more balanced decision-making, which enhances the effectiveness of intellectual capital. The findings is more relevant for the Saudi Arabian banks because recent reforms in the vision emphasize increasing female participation in the workforce, including the financial sector. Literature also supported that women inclusion in the leadership could enhance creativity, governance quality, and innovation capacity, which could ultimately improve the FS. The moderating role of gender diversity further suggests that inclusive workplace policies can enhance the benefits of intellectual capital. Therefore, Saudi banks should promote diversity in leadership positions, develop inclusive HR policies, and support women's professional

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 243-263) **Doi:** 10.34109/ijefs.202618112

development to strengthen governance and FS. Previous studies also suggested that IC of the organizations is effectively managed when the companies have better governance mechanisms, which leads to improved FS (Alkasim et al., 2025; Tiwari & Arora, 2025). Studies on corporate governance also suggest that gender diversity improves decision quality, risk monitoring, and organizational transparency, which indirectly supports FS (Hoang Thanh et al., 2025; Nadeem, 2020). There are various studies that have also been conducted where found that gender diversity is a significant moderating variable and this also strengthening the moderating effective predictive power for the current study.

IMPLICATIONS

The study with significant findings has a significant theoretical contribution through extending the literature on IC and FS in the context of Saudi Arabian banking sector. Prior literature was majorly focused on the intellectual components directs effects on the FS, while the moderating role of gender diversity is significantly ignored in the context of Saudi Arabian banking sector. In this regards, through testing the gender diversity moderating effect between IC efficiency and FS, this study provides a novel perspective on how diversity in leadership and workforce composition enhances the effectiveness of intellectual capital. This with this effect findings represent a pioneering effort in integrating gender diversity into IC frameworks in the banking sector, thereby filling a significant gap in empirical research. In addition, research also contributes towards the theoretical understandings of resource based and HC theories through demonstrating that intellectual resources alone are not sufficient for FS and its impact increases when the companies have a stronger focus on gender diversity. This supports the argument that social and structural governance factors, such as diversity could interact with knowledge resources to improve FS. By highlighting the interactive effects of gender diversity, the study offers a conceptual contribution that can guide future research on how corporate governance and demographic characteristics influence the deployment of IC in financial institutions. Lastly, study results also contributed to guiding scholars that they should effectively incorporate the moderating variables when they tested the impact of intellectual on the FS. In this regard, future research in finance and management could build upon this contribution by testing similar moderation effects across other sectors or geographic contexts, thus expanding the generalizability of the intellectual capital-FS framework.

Study also has some of the practical implications for the banking management of Saudi Arabia. The study with the moderating effect showed that gender diversity significantly enhances the positive effect of IC on FS, which has significant implications for human resource management, corporate governance, and organizational strategy. Therefore, with these findings Saudi Arabian banks policy makers could leverage this insights through promoting an inclusive policies that increase female representation in leadership positions, board memberships, and

Vol: 18 **No:** 01 **Year:** 2026 **ISSN:** 1309-8055 (Online) (**pp.** 243-263) **Doi:** 10.34109/ijefs.202618112

decision-making roles. Such measures can enhance the effectiveness of IC resources, which is leading to improved financial resilience and operational performance. The study results could also contributed to help to the bank managers for providing a actionable insights through demonstrating that the benefits of human, structural, and relational capital can be maximized in the presence of gender-diverse leadership. This practical contribution is particularly important for banking sectors, which encourages the integration of women into key sectors. By adopting policies that raise gender diversity, banks not only comply with national development goals but it also strengthen their FS and competitiveness in a rapidly evolving banking environment. Study results also implies a practical contribution through employing that regulators such as the Saudi Central Bank, should encourage reporting on gender diversity and promote best practices for inclusive corporate governance. Banks can also implement training programs, mentoring initiatives, and leadership development schemes to ensure that IC is effectively harnessed through a diverse workforce. These practices will allow banks to achieve sustainable financial performance while aligning with broader socio-economic reforms in Saudi Arabia.

Various limitations are that needs to be addressed in the future research. Firstly, the study focused on the moderating effect of gender diversity while ignoring other corporate governance indicators, namely board tenure. In this regard, further research could be conducted with the moderating effect of board tenure to increase the future researcher's theoretical contributions and enhance the model's predictive power. Secondly, the study was limited on panel data and used static panel data, and differences in results could be tested using dynamic panel data. Therefore, future research could be conducted on using dynamic panel data to determine the variations in the results. Lastly, study focused only on banking sector which is a financial institution where infrastructure of this sector is different from that of the non-financial sector. Therefore, future research could be conducted on non-financial sector to increase the variation in results.

CONCLUSION

This study examines the impact of IC on the FS of Saudi banks. Furthermore, the study also investigates the moderating role of gender diversity in strengthening these relationships. Longitudinal data was collected from annual reports of the banking sector for the period of 2015 to 2025 where data was analysis using static panel data. The findings reveal that IC efficiency and CEE significantly positively impact FS. Further results indicated that gender diversity significantly strengthens the relationship between IC efficiency and FS which is highlighting the importance of inclusive governance practices. This study makes an important theoretical contribution by extending IC literature through the integration of gender diversity as a moderating variable in the FS framework. Practically, the findings suggest that Saudi banks should invest in IC development and promote gender diversity in leadership

positions to enhance financial resilience. The study also provides policy implications through emphasizing knowledge development and workforce diversity to achieve sustainable financial sector growth.

FUNDING

This work was supported by the Deanship of Scientific Research, Vice Presidency for Graduate Studies and Scientific Research, King Faisal University, Saudi Arabia [Grant Number KFU261521]'.

REFERENCES

Ahlawat, D., & Sharma, P. (2025). The liaison between Intellectual Capital and Financial Performance: A Bibliometric scrutiny. Journal of Advanced Management Studies, 2(2), 5-21. https://doi.org/10.36676/jams.v2.i2.36

Ahmad, F. (2025). The Relationship Between Intellectual Capital, Financial Stability, Firm Performance, Market Value, and Bankruptcy Risk: Empirical Evidence from Pakistan. Journal of the Knowledge Economy, 16(1), 1347-1395. https://doi.org/10.1007/s13132-024-02055-z

Ali, R., Amin, A., Rehman, R. U., & Ntim, C. G. (2024). Gender diversity, intellectual capital, and family ownership: an empirical test of Kanter's hypothesis. Business Strategy & Development, 7(2), e392. https://doi.org/10.1002/bsd2.392

Alkasim, A., Emeka, O. P., & Alain, A. M. (2025). Gender Diversity And Intellectual Capital Efficiency Of Listed Manufacturing Firms In Nigeria. International Journal of Accounting, Management and Economic Review, 1(4), 195-207. https://doi.org/10.57233/ijamer.v1i4.13

Alowaimer, O. H., Alobaid, R. O., Hossain, M. S., & Habtoor, O. S. (2025). Impact of Intellectual Capital on Financial Performance of Commercial Banks in Saudi Arabia. Smart Journal of Business Management Studies, 21(1), 23-33. https://doi.org/10.34293/2321-2012.2025.0001.2

Aramonte, S., Schrimpf, A., & Shin, H. S. (2023). Non-bank financial intermediaries and financial stability. Edward Elgar Publishing. https://doi.org/10.4337/9781800375321.00014

Aslam, E., Iqbal, A., & Shabbir, M. S. (2025). Intellectual capital and financial stability of Islamic banks in OIC countries: the moderating role of corporate governance. Journal of Islamic Accounting and Business Research. https://doi.org/10.1108/JIABR-11-2023-0377

Azam, A., Khan, I., Fahad, M. S., & Akhtar, M. (2023). Prediction of Insolvency by Using Altman Z-score Model: A Study of Selected Indian Private Banks. Boletin de Literatura Oral, 10(1), 684-695. https://www.researchgate.net/profile/Azam-6/publication/374783028

Buenaño, E., Báez, S., & Campaña, P. (2025). Intellectual capital and financial

performance: a comparative analysis of VAIC models in Ecuadorian banking. Cogent Business & Management, 12(1), 2495187. https://doi.org/10.1080/23311975.2025.2495187

Dalwai, T., Singh, D., & S, A. (2022). Intellectual capital, bank stability and risk-taking: evidence from Asian emerging markets. Competitiveness Review: An International Business Journal, 32(6), 995-1024. https://doi.org/10.1108/CR-03-2021-0031

Danial, M., Shah, S. Q. A., Iftikhar, N., Lai, F. W., & Rahman, H. U. (2026). Unveiling the Dual Role of Intellectual Capital in Value Creation and Financial Distress: Underlying Critical Moderators. Knowledge and Process Management. https://doi.org/10.1002/kpm.70050

Elmahgop, F. O. (2024). Intellectual Capital and Bank Stability in Saudi Arabia: Navigating the Dynamics in a Transforming Economy. Sustainability, 16(10), 4226. https://doi.org/10.3390/su16104226

Farooq, M. I., Taha, R., Javaid, M. I., & Binti Muhmad, S. N. (2025). Intellectual capital and financial stability: a strategic pathway for sustainable growth in Pakistan's banking sector. Journal of Financial Economic Policy, 1-21. https://doi.org/10.1108/JFEP-11-2024-0333

Festa, G., Rossi, M., Kolte, A., & Marinelli, L. (2021). The contribution of intellectual capital to financial stability in Indian pharmaceutical companies. Journal of Intellectual Capital, 22(2), 337-359. https://doi.org/10.1108/JIC-03-2020-0091

Filatie, Y. S., & Sharma, D. (2024). The mediating role of intellectual capital on the nexus between diversification, financial stability and efficiency of commercial banks in Ethiopia. Managerial Finance, 50(9), 1681-1701. https://doi.org/10.1108/MF-02-2024-0083

Githaiga, P. N., Soi, N., & Buigut, K. K. (2023). Does intellectual capital matter to MFIs' financial sustainability? Asian Journal of Accounting Research, 8(1), 41-52. https://doi.org/10.1108/AJAR-06-2021-0080

Halim, M. A. (2026). Does intellectual capital affect financial stability? Mediation of the credit risk of Islamic banks. International Journal of Social Economics, 1-17. https://doi.org/10.1108/IJSE-11-2023-0870

Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. Academy of management review, 9(2), 193-206. https://doi.org/10.5465/amr.1984.4277628

Hariyono, A., & Narsa, I. M. (2024). The value of intellectual capital in improving MSMEs' competitiveness, financial performance, and business sustainability. Cogent Economics & Finance, 12(1), 2325834. https://doi.org/10.1080/23322039.2024.2325834

Harris, L. (2000). A theory of intellectual capital. Advances in Developing Human Resources, 2(1), 22-37. https://journals.sagepub.com/doi/abs/10.1177/152342230000200104

Hasni, R., Dridi, D., & Ben Jebli, M. (2023). Do financial development, financial

stability and renewable energy disturb carbon emissions? Evidence from asia–pacific economic cooperation economics. Environmental Science and Pollution Research, 30(35), 83198-83213. https://doi.org/10.1007/s11356-023-28418-8

Hermawan, S., Biduri, S., Maryati, E., Widiana, M. E., & Gunardi, A. (2025). Enterprise risk management, intellectual capital, and investment opportunity set on firm value through financial performance as an intervening variable. Journal of Islamic Accounting and Business Research. https://doi.org/10.1108/JIABR-02-2024-0050

Hesniati, H., Verandi, R., & Yulfiswandi, Y. (2025). The impact of gender diversity on firm performance: Intellectual capital as a moderator. At-Tadbir: jurnal ilmiah manajemen, 9(1), 19-32. https://doi.org/10.31602/atd.v9i1.16534

Hkimi, A., & Ftouhi, K. (2025). The moderating role of female directors in improving ESG performance through intellectual capital: evidence from GCC countries. Corporate Governance: The International Journal of Business in Society, 1-28. https://doi.org/10.1108/CG-01-2025-0015

Ho, T. N., Nguyen, D., Le, T., Nguyen, H. T., & Tran, S. (2025). Does board gender diversity affect bank financial stability? Evidence from a transitional economy. Gender in Management: An International Journal, 40(1), 64-90. https://doi.org/10.1108/GM-03-2023-0094

Hoang Thanh, N., Tran Thanh, L., & Truong Cong, B. (2025). Gender diversity matters: unveiling the impact on intellectual capital disclosure–experimental evidence from Vietnam. Corporate Governance: The International Journal of Business in Society, 1-21. https://doi.org/10.1108/CG-01-2025-0051

Kanadlı, S. B., Bankewitz, M., & Zhang, P. (2018). Job-related diversity: the comprehensiveness and speed of board decision-making processes—an upper echelons approach. Journal of Management and Governance, 22(2), 427-456. https://doi.org/10.1007/s10997-017-9394-4

Kedward, K., Ryan-Collins, J., & Chenet, H. (2023). Biodiversity loss and climate change interactions: financial stability implications for central banks and financial supervisors. Climate Policy, 23(6), 763-781. https://doi.org/10.1080/14693062.2022.2107475

Loulou-Baklouti, S. (2024). Does board gender diversity affect intellectual capital voluntary disclosure? Evidence from Tunisia. International Journal of Disclosure and Governance, 21(2), 193-210. https://doi.org/10.1057/s41310-023-00189-1

Luh, P. K. (2025). Examining the effect of intellectual capital efficiency on microfinance institutions' performance: the case of a developing economy. Management Matters, 22(2), 142-158. https://doi.org/10.1108/MANM-04-2024-0026

Murale, V., Jayaraj, R., & Ashrafali, A. (2010). Impact of intellectual capital on firm performance: A resource based view using VAIC approach. International

Journal of Business Management, Economics and Information Technology, 2(2), 283-292. https://www.researchgate.net/profile/Murale_V/publication/268670555

Nadeem, M. (2020). Does board gender diversity influence voluntary disclosure of intellectual capital in initial public offering prospectuses? Evidence from China. Corporate Governance: An International Review, 28(2), 100-118. https://doi.org/10.1111/corg.12304

Nadeem, M., De Silva, T.-A., Gan, C., & Zaman, R. (2017). Boardroom gender diversity and intellectual capital efficiency: evidence from China. Pacific Accounting Review, 29(4), 590-615. https://doi.org/10.1108/PAR-08-2016-0080

Nishii, L. H., Gotte, A., & Raver, J. L. (2007). Upper echelon theory revisited: The relationship between upper echelon diversity, the adoption of diversity practices, and organizational performance. https://ecommons.cornell.edu/server/api/core/bitstreams/2c05452f-8bcc-4a3e-80e5-803d153a3c5c/content

Olson, B. J., Parayitam, S., & Twigg, N. W. (2006). Mediating role of strategic choice between top management team diversity and firm performance: Upper echelons theory revisited. Journal of Business and Management, 12(2), 111-126. https://doi.org/10.1504/JBM.2006.141143

Ouni, Z., Ben Mansour, J., & Arfaoui, S. (2022). Corporate Governance and Financial Performance: The Interplay of Board Gender Diversity and Intellectual Capital. Sustainability, 14(22), 15232. https://doi.org/10.3390/su142215232

Ozili, P. K., & Iorember, P. T. (2024). Financial stability and sustainable development. International Journal of Finance & Economics, 29(3), 2620-2646. https://doi.org/10.1002/ijfe.2803

Paphawasit, B., Cherapanukorn, V., Pattanasak, P., & Wudhikarn, R. (2025). An empirical study of relationships between intellectual capital and financial performance of the tourism-related industries in the tourism-dependent country. Tourism Economics, 31(6), 1252-1278. https://journals.sagepub.com/doi/abs/10.1177/13548166251339953

Plonsey, R., Barr, R. C., & Bioelectricity, A. (2007). Quantitative approach. Cham, Switzerland: Springer. https://link.springer.com/book/10.1007/978-0-387-48865-3

Reijman, M., Hazes, J., Bierma-Zeinstra, S., Koes, B., Christgau, S., Christiansen, C., Uitterlinden, A., & Pols, H. (2004). A new marker for osteoarthritis: cross-sectional and longitudinal approach. Arthritis & Rheumatism: Official Journal of the American College of Rheumatology, 50(8), 2471-2478. https://doi.org/10.1002/art.20332

Riahi-Belkaoui, A. (2003). Intellectual capital and firm performance of US multinational firms: A study of the resource-based and stakeholder views. Journal of Intellectual Capital, 4(2), 215-226.

https://doi.org/10.1108/14691930310472839

Ridha, M. A. (2026). The Role of Gender Diversity in Moderating the Impact of Intellectual Capital on the Performance of Islamic Banks. JURNAL EKSPLORASI AKUNTANSI, 8(1), 107-122. https://doi.org/10.24036/jea.v8i1.3879

Roberson, Q., Gerkin, E., & Hill, A. (2024). Diversity in top management teams and upper echelons of firms. Current Opinion in Psychology, 60, 101901. https://doi.org/10.1016/j.copsyc.2024.101901

Roos, G. (2025). Reflections from the Literature on Applying the Intellectual Capital Lens on the Micro, Meso, and Macro Levels. In F. Matos, C. Basile, L. Pyis, L. Edvinsson, & G. Roos (Eds.), Intellectual Capital in a Global Business Landscape: Unlocking Strategic Opportunities and Driving Growth (pp. 221-246). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-86362-2_11

Santos-Rodrigues, H., Pereira-Rodrigues, G., & Cranfield, D. (2014). Relational Capital and Financial Results: A Case Study. European Conference on Intangibles and Intellectual Capital, https://books.google.com.pk/books?id=jZoTBAAAQBAJ&printsec=frontcover#v=onepage&q&f=false

Selfiani, S., & Usmar, U. (2023). The effect of intellectual capital on the quality of sustainability report disclosures with financial performance as a moderating variable. Jurnal Akuntansi, 15(1), 177-188. https://doi.org/10.28932/jam.v15i1.6364

Siregar, R., Ramadhan, M., & Kamilah, K. (2025). Enhancing financial performance of halal MSMEs through intellectual capital and business sustainability in Medan City, Indonesia. Journal of Islamic Economics Lariba, 11(1). https://doi.org/10.20885/jielariba.vol11.iss1.art6

Tiwari, R., & Arora, A. (2025). Moderating role of gender diversity in the relationship between intellectual capital efficiency and corporate performance. International Journal of Productivity and Performance Management, 74(2), 544-563. https://doi.org/10.1108/IJPPM-12-2023-0698

Ullah, A., Pinglu, C., Ullah, S., Qian, N., & Zaman, M. (2023). Impact of intellectual capital efficiency on financial stability in banks: Insights from an emerging economy. International Journal of Finance & Economics, 28(2), 1858-1871. https://doi.org/10.1002/ijfe.2512

Ulum, I., Ghozali, I., & Purwanto, A. (2014). Intellectual capital performance of Indonesian banking sector: a modified VAIC (M-VAIC) perspective. Asian Journal of Finance & Accounting, 6(2), 103-123. https://www.academia.edu/download/35877414/5246-18989-2-RV-writer2-new2.pdf

Wuttaphan, N. (2017). Human capital theory: The theory of human resource development, implications, and future. Life Sciences and Environment

Journal, 18(2), 240-253. https://ph01.tci-thaijo.org/index.php/psru/article/view/76477

Yin, J., & Xu, J. (2025). Intellectual capital, digital transformation and firms' financial performance: Evidence from ecological protection and environmental governance industry in China. PLOS ONE, 20(1), 1-22. https://doi.org/10.1371/journal.pone.0316724

Zafar, M. B., & Yasin, T. (2025). Intellectual capital and financial performance of Islamic banks: a meta-analysis. Accounting Research Journal, 38(2), 245-262. https://doi.org/10.1108/ARJ-07-2024-0245

Zhang, L. (2020). An institutional approach to gender diversity and firm performance. Organization Science, 31(2), 439-457. https://doi.org/10.1287/orsc.2019.1297