JOURNAL OF MANAGEMENT AND BUSINESS SOLUTIONS

Designing an Intellectual Capital Model and Investigating the Impact of Its Dimensions on Organizations' Profit Returns: A Mixed-Methods Approach

1. Mahdi. Honarmand: Department of Accounting, Qaenat Branch, Islamic Azad University, Qaenat, Iran
2. Mahmoud. Mousavi Shiri*: Associate Professor of Accounting, Department of Management, Economics, and Accounting, Payame Noor University, Tehran, Iran
3. Mahmoud. Lari Dashtbayaz: Professor, Department of Accounting, Faculty of Administrative Sciences and Economics, Ferdowsi University of Mashhad, Mashhad, Iran

*corresponding author's email: mousavi1973@pnu.ac.ir

ABSTRACT

Intellectual capital, as one of the most important intangible assets of organizations, plays a fundamental role in value creation and the improvement of financial performance. The purpose of this study is to design an intellectual capital model and investigate the impact of its dimensions on the profit returns of organizations. This research is applied in terms of its objective and descriptive-survey in terms of its methodology, conducted using a mixed-methods (qualitative-quantitative) approach. In the qualitative section, semi-structured interviews with experts were utilized to identify the dimensions of intellectual capital. In the quantitative section, data were collected through a questionnaire. The statistical population of the research comprised managers and experts of organizations and companies, and the sample size was determined to be 384individuals using Cochran's formula. Structural equation modeling (SEM) along with SPSS and Smart PLS software were used for data analysis. The results of the research indicated that human capital, structural capital, and relational capital have a positive and significant impact on the profit returns of organizations. Furthermore, the findings showed that human capital, with a path coefficient of 0.42, has the greatest impact on profit returns, followed by structural capital with a coefficient of 0.38and relational capital with a coefficient of 0.35. The results of this research suggest that focusing on the development of knowledge capitals can play a significant role in enhancing the profitability of organizations.

Keywords: Intellectual capital, human capital, structural capital, relational capital, profit returns.

Introduction

The transition from a traditional manufacturing-based economy to a modern knowledge-based economy has fundamentally altered the paradigm of value creation within contemporary organizations. In this dynamic and highly competitive environment, physical and financial assets are no longer the sole determinants of sustainable competitive advantage and long-term organizational survival. Instead, intangible assets, primarily conceptualized as intellectual capital, have emerged as the critical drivers of innovation, efficiency, and financial prosperity (1, 2). Intellectual capital encompasses the hidden value of an organization, representing a synergistic combination of knowledge, experience, organizational technology, customer relationships, and professional skills that equip a firm

Article history:
Received 22 November 2024
Revised 30 January 2025
Accepted 05 February 2025
Published online 10 February 2025

How to cite this article:
Honarmand, M., Mousavi Shiri, M., & Lari Dashtbayaz, M. (2025). Designing an Intellectual Capital Model and Investigating the Impact of Its Dimensions on Organizations' Profit Returns: A Mixed-Methods Approach. *Journal of Management and Business Solutions, 3*(1), 1-12. https://doi.org/10.61838/jmbs.250

with a unique market position. As businesses face increasingly complex global challenges, understanding the multidimensional nature of intellectual capital and its direct implications for organizational profitability has become a paramount concern for scholars, practitioners, and policymakers alike. The growing recognition of these intangible resources necessitates a comprehensive investigation into how organizations can systematically leverage their knowledge base to maximize profit returns and secure a sustainable economic future.

Historically, the academic exploration of intellectual capital began with attempts to explain the widening gap between the book value and the market value of publicly traded companies (3). Researchers posited that traditional financial accounting frameworks failed to capture the true worth of an enterprise, as they largely ignored the wealth-generating potential of human intellect and structural capabilities. Consequently, intellectual capital was introduced as a conceptual bridge to explain this discrepancy, highlighting its role in enhancing firm value through improved financial performance (4). Over time, the conceptualization of intellectual capital evolved into a tripartite model comprising human capital, structural capital, and relational capital. Human capital is widely regarded as the foundational element, encompassing the collective knowledge, competencies, creativity, and problem-solving abilities of the workforce. Effective human resource management practices are essential for harnessing this human capital, ensuring that employees remain motivated and capable of driving organizational innovation (5). Without a robust human capital base, organizations struggle to adapt to market shifts and technological advancements.

However, human capital alone is insufficient to guarantee organizational success; it must be supported by adequate structural capital. Structural capital refers to the supportive infrastructure, including organizational processes, databases, patents, culture, and information systems, that captures and institutionalizes individual knowledge, transforming it into organizational property. Furthermore, the integration of intellectual capital with organizational learning mechanisms significantly enhances service innovation and operational efficiency, particularly in knowledge-intensive sectors (6). Relational capital, the third dimension, represents the external networks and relationships an organization maintains with its customers, suppliers, strategic partners, and other critical stakeholders. These relationships are vital for facilitating knowledge exchange, building market reputation, and ultimately driving revenue growth.

The empirical link between intellectual capital and financial performance, particularly profit returns, has been the subject of extensive investigation across various industries and geographical contexts. In the financial sector, for instance, the efficient utilization of intellectual capital has been shown to significantly boost the profitability and overall productivity of banking institutions (7, 8). This relationship is particularly pronounced in Islamic banks, where intellectual capital performance plays a crucial role in maintaining financial stability and achieving favorable financial outcomes in compliance with specific regulatory and ethical frameworks (9). Moreover, longitudinal analyses of Sharia commercial banks have demonstrated that the growth rate of intellectual capital abilities can reliably predict both present and future profitability, underscoring its strategic importance for sustainable banking operations (10). The resilience of intellectual capital was further highlighted during global crises, such as the COVID-19 pandemic, where its positive impact on bank profitability was comparatively analyzed across emerging economies, proving to be a vital buffer against external economic shocks (11).

Beyond the financial industry, the influence of intellectual capital extends to diverse sectors, each presenting unique operational dynamics. In the agricultural domain, the strategic management of intellectual capital has been empirically linked to improved profitability, demonstrating that even traditionally resource-intensive industries benefit profoundly from intangible asset optimization (12). Similarly, in the real estate and infrastructure sectors, the Value

Added Intellectual Coefficient (VAIC) methodology has been widely employed to reveal a positive association between intellectual capital efficiency, profitability, and firm value, confirming the cross-sectoral applicability of these concepts (13). Small and medium-sized enterprises (SMEs), which often operate with limited tangible resources, also rely heavily on their intellectual capital to navigate turbulent market conditions. Research indicates that during the COVID-19 pandemic, SMEs with robust intellectual capital frameworks exhibited greater resilience and sustained profitability compared to their less knowledge-driven counterparts (14).

The healthcare industry, characterized by rapid technological advancements and a critical reliance on specialized medical knowledge, provides another compelling context for intellectual capital research. Panel data evidence from the healthcare sector has established a strong nexus between intellectual capital components and organizational profitability, emphasizing the necessity of continuous investment in medical expertise and structural technologies (15, 16). These studies frequently highlight the interaction effects between different types of capital, suggesting that the true value of intellectual capital is realized not in isolation, but through the synergistic integration of human, structural, and relational resources.

In the realm of corporate finance and accounting, researchers have explored how intellectual capital interacts with various financial mechanisms and reporting practices. The disclosure of intellectual capital dimensions is heavily influenced by corporate profitability, with highly profitable firms exhibiting a greater propensity to transparently report their intangible assets to signal market superiority (17). Furthermore, the intricate dynamics of capital structure and firm value are often mediated by profitability, which itself is driven by the underlying intellectual capital base of the organization (18). Interestingly, the presence of robust intellectual capital can also interact with complex corporate behaviors, such as real earnings management. Studies have shown that profitability can moderate the relationship between intellectual capital and earnings management, indicating that highly profitable, knowledge-intensive firms may adopt different strategic financial reporting behaviors compared to their peers (19). Additionally, broader financial strategies, including capital intensity, leverage, and corporate social responsibility, play a role in corporate tax avoidance, with firm size acting as a moderating variable; these financial strategies are often formulated by the top-tier human capital within the organization's management team (20).

In recent years, the discourse on intellectual capital has expanded to include its critical role in promoting corporate sustainability and achieving broader societal goals. Organizations are increasingly evaluated not only on their financial bottom line but also on their environmental and social impact. Intellectual capital significantly influences sustainability performance reporting and the formulation of long-term business strategies, enabling firms to align their profit motives with ecological and social responsibilities (21). More specifically, intellectual capital has been identified as a key factor in strengthening the relationship between the pursuit of Sustainable Development Goals (SDGs) and overall market performance, proving that sustainable practices, driven by knowledge and innovation, yield tangible financial dividends (22).

Despite the extensive body of literature documenting the positive impacts of intellectual capital across various sectors and contexts, significant methodological and contextual gaps remain. Much of the existing research relies heavily on secondary financial data and standardized proxy measures, which often fail to capture the nuanced, qualitative realities of intellectual capital dimensions as experienced by organizational managers and stakeholders. Furthermore, in specific emerging economies, there is a conceptual ambiguity regarding how these global constructs locally translate into measurable operational structures and directly impact profit returns. Consequently, there is a pressing need for robust, mixed-methods empirical investigations that first qualitatively explore the

indigenous components of intellectual capital and subsequently test their quantitative impact on financial outcomes using structural equation modeling. Addressing this gap will provide actionable, context-specific frameworks that organizational leaders can deploy to optimize their intangible asset portfolios. Therefore, the present study aimed to design an intellectual capital model and investigate the impact of its dimensions on organizations' profit returns using a mixed-methods approach.

Methods and Materials

The current study is methodologically categorized as mixed-methods research, implemented using an exploratory-sequential design (Creswell & Plano Clark, 2002). In this design, the research commenced with a qualitative phase to extract the main concepts and components, followed by a quantitative phase to empirically test the resulting model. The rationale for selecting this design is the conceptual ambiguity regarding the dimensions and relationships of intellectual capital and profit returns within the organizational context of the country, necessitating the development of a comprehensive and indigenous model. The statistical population in the qualitative phase consisted of accounting and finance faculty members from top-tier universities, selected due to their central role in scientific knowledge production and deep familiarity with intellectual capital concepts. Sampling in this phase was conducted using purposive and snowball sampling methods, continuing until theoretical saturation was achieved. Consequently, data collection concluded after conducting interviews with 12qualified experts who possessed extensive academic backgrounds, such as published scientific articles or research projects related to intellectual capital and financial performance. In the quantitative phase, the statistical population comprised managers and decision-makers of companies and organizations, as they possess direct knowledge of the organization's intellectual capital and play an active role in evaluating financial outcomes. Given the extensive nature of this population, the sample size was determined to be 384individuals using Cochran's formula, considering a 5%error margin and a 95%confidence level. The quantitative sampling utilized simple random and convenience sampling approaches to ensure the collected data adequately represented the statistical population and could be generalized to the broader community of organizational managers.

In the qualitative phase of the research, semi-structured interviews were utilized as the primary data collection tool, allowing the researcher to explore predetermined questions while providing ample space for experts to express novel perspectives and experiences. The interview questions were designed based on the research objectives and existing literature, formulated as open-ended inquiries to capture comprehensive data regarding the dimensions of intellectual capital and its relationship with profit returns. Prior to the sessions, a summary of the research design was provided to the interviewees to establish preliminary readiness. The execution process involved contacting qualified experts to schedule sessions, explaining the research objectives, posing the semi-structured questions, and recording the responses with the participants' explicit consent. To ensure the qualitative tool's validity and reliability, content validity was established through expert reviews, while trustworthiness was secured via peer debriefing, member checking, and systematic recoding over specified intervals. These rigorous procedures guaranteed that the extracted concepts accurately reflected the experts' genuine viewpoints and were conceptually coherent, thereby establishing a robust foundation for designing the quantitative measurement instrument.

In the quantitative phase, the principal data collection instrument was a researcher-made questionnaire developed directly from the qualitative findings, specifically incorporating the extracted components, indicators, and dimensions of intellectual capital. The measurement scale employed a five-point Likert scale ranging from 1(strongly

disagree) to 5(strongly agree), enabling precise statistical evaluations and advanced techniques such as structural equation modeling. The questionnaire comprised items dedicated to measuring human capital, structural capital, relational capital, and organizational profit returns, with exactly 8questions allocated to each respective construct. Before final administration, the questionnaire's face and content validity were confirmed by subject matter experts and a preliminary pilot test. Furthermore, construct validity was rigorously evaluated using convergent and discriminant validity metrics, where factor loadings and the Average Variance Extracted values for all constructs were strictly greater than 0.5, successfully satisfying the discriminant validity criteria based on squared correlations. The reliability of the instrument was simultaneously verified using Cronbach's alpha and Composite Reliability indices, with both metrics yielding values well above the acceptable threshold of 0.7for all measured dimensions. This comprehensive validation process ensured that the quantitative questionnaire was a highly reliable, consistent, and accurate tool for assessing the impact of intellectual capital on profit returns.

Data analysis was systematically executed across the two interconnected phases of the study. In the qualitative phase, the data derived from the semi-structured interviews were analyzed using the grounded theory approach through three consecutive levels of coding encompassing open, axial, and selective coding. During open coding, the raw qualitative data were broken down into smaller conceptual segments to extract initial concepts, which were subsequently categorized into preliminary categories based on their underlying similarities. In the axial coding stage, the relationships among these categories and their various dimensions were thoroughly examined and organized around a central phenomenon, allowing the researcher to elucidate the structural and causal relationships between intellectual capital components and the factors influencing profit returns. Finally, selective coding involved integrating the central category with other related qualitative dimensions to form the ultimate theoretical framework and paradigmatic model of the research.

In the quantitative phase, the data collected via the structured questionnaires were subjected to both descriptive and inferential statistical analyses. Descriptive statistics, including means, standard deviations, and frequency distributions, were utilized to gain an initial empirical understanding of the respondents' characteristics and data dispersion patterns. For inferential analysis, Structural Equation Modeling was employed to simultaneously investigate the complex causal relationships between the latent and observed variables of human capital, structural capital, relational capital, and organizational profit returns. The quantitative analytical procedures were conducted using SPSS software for preliminary data screening, descriptive evaluations, and initial statistical assumptions, alongside SmartPLS software for executing the advanced Structural Equation Modeling techniques, assessing measurement model validities, and testing the empirical research hypotheses. This integrated analytical framework ensured profound methodological continuity, as the conceptual relationships extracted from the qualitative coding directly informed the definition of constructs and the structural paths tested in the quantitative phase, fully realizing the logic of the exploratory-sequential mixed-methods design.

Findings and Results

The paradigmatic model of intellectual capital and the detailed description of its components are presented in Table 1.

Table 1. Paradigmatic Model of Intellectual Capital and Its Components

Categories / Components	Description of Role in the Final Model

Intellectual Capital	An integrated set of the organization's intangible assets formed through the interaction and synergy of human capital, structural capital, and relational capital, playing a fundamental role in improving the organization's profit returns.
Human Capital	Includes the knowledge, skills, experience, attitude, and intellectual capability of employees, considered the primary source of value creation and the main driver of the organization's profitability.
Structural Capital	Organizational structures, processes, information systems, procedures, and technologies that enable the effective utilization of human capital and pave the way for realizing organizational goals.
Relational Capital	The network of the organization's relationships with customers, suppliers, partners, and other stakeholders that can strengthen or moderate the intensity and direction of the impact of human and structural capital on the organization's performance and profitability.
Increased Profit Returns	Enhancing the financial performance of the organization through increasing profitability, improving efficiency, creating a sustainable competitive advantage, and increasing the economic value of the organization in the long term.

As illustrated in Table 1, the paradigmatic model of intellectual capital encompasses several key categories that collectively drive organizational success. Intellectual capital acts as a comprehensive set of intangible assets formed by the synergy of its underlying elements. Human capital, which comprises employee knowledge, skills, and intellectual capabilities, serves as the primary engine for value creation and organizational profitability. Structural capital provides the necessary organizational frameworks, processes, and technological systems to effectively leverage this human capital toward achieving strategic objectives. Concurrently, relational capital encompasses the network of external relationships with stakeholders, which serves to moderate and amplify the effects of internal assets on overall performance. Ultimately, the synergistic interaction of these fundamental components leads to increased profit returns, characterized by improved financial performance, enhanced operational efficiency, and the establishment of a sustainable competitive advantage in the long term.

The demographic characteristics of the participants indicate a predominantly male sample, with males comprising $72.9\%(n = 280)$ and females accounting for $27.1\%(n = 104)$ of the respondents. In terms of educational attainment, the largest segment held a Master's degree $(41.7\%,\ n = 160)$, followed by those with a Bachelor's degree $(37.5\%,\ n = 144)$ and a PhD $(20.8\%,\ n = 80)$. Regarding the type of organization, $41.7\%(n = 160)$ of the managers were employed in private sectors, $25.0\%(n = 96)$ in public sectors, $16.7\%(n = 64)$ in cooperative or semi-governmental companies, and $16.6\%(n = 64)$ in other organizational structures. The age distribution revealed that the majority of managers were between $40$and 49years old $(37.5\%,\ n = 144)$, with other age groups including $30$to 39years $(25.0\%,\ n = 96)$, $50$to 59years $(22.9\%,\ n = 88)$, under 30years $(8.3\%,\ n = 32)$, and 60years and above $(6.3\%,\ n = 24)$. Finally, an analysis of managerial experience demonstrated that $29.2\%(n = 112)$ had $10$to 14years of experience, $25.0\%(n = 96)$ had $15$to 19years, $20.8\%(n = 80)$ had $5$to 9years, while both the groups with less than 5years and 20years or more each represented $12.5\%(n = 48)$ of the total sample.

Table 2. Descriptive Statistics of Intellectual Capital and Profit Returns Constructs

Construct	Mean	Median	Standard Deviation	Minimum	Maximum	Distribution Status
Human Capital	4.12	4.20	0.52	2.50	5.00	Right-skewed (high responses)
Structural Capital	3.88	3.90	0.61	2.00	5.00	Approximately normal
Relational Capital	3.95	4.00	0.58	2.25	5.00	Concentration in the 3.5to 4.5range
Profit Returns	3.76	3.80	0.67	2.00	5.00	Balanced dispersion

The descriptive statistics for the research constructs, as presented in Table 2, demonstrate the central tendency and dispersion of the participants' responses on a five-point scale. Human capital recorded the highest mean score $(M = 4.12,\ SD = 0.52)$, with a median of $4.20$and a right-skewed distribution indicating a strong tendency toward higher responses. Relational capital followed with a mean of $3.95(SD = 0.58)$ and responses primarily concentrated between $3.5$and 4.5. Structural capital exhibited an approximately normal distribution with a mean of $3.88(SD =$

0.61). Finally, the dependent variable, profit returns, showed a balanced dispersion of responses with a mean of 3.76, a median of 3.80, and the highest standard deviation among the constructs ($SD = 0.67$), while all constructs spanned a range with maximum values of 5.00.

Table 3. Factor Loadings, Average Variance Extracted (AVE), Composite Reliability (CR), and Cronbach's Alpha of the Constructs

Construct	Minimum Factor Loading	AVE (Convergent Validity)	CR (Composite Reliability)	Cronbach's Alpha	Validity Result	Reliability Result
Human Capital	0.62	0.57	0.91	0.89	Confirmed	Reliable
Structural Capital	0.60	0.53	0.88	0.86	Confirmed	Reliable
Relational Capital	0.61	0.55	0.90	0.88	Confirmed	Reliable
Profit Returns	0.63	0.54	0.87	0.85	Confirmed	Reliable

Table 3 details the measurement model's evaluation metrics, confirming both the validity and reliability of all research constructs. The minimum factor loadings for all items exceeded the acceptable threshold, ranging from 0.60for structural capital to 0.63for profit returns. Convergent validity was established as the Average Variance Extracted (AVE) values for human capital (0.57), relational capital (0.55), profit returns (0.54), and structural capital (0.53) were all strictly greater than 0.50. Furthermore, the internal consistency and reliability of the measurement models were robustly verified; human capital exhibited the highest Composite Reliability (CR) at 0.91and Cronbach's Alpha at 0.89, while the other constructs also demonstrated excellent reliability metrics, with CR values ranging from 0.87to 0.90and Cronbach's Alpha values ranging from 0.85to 0.88, leading to the definitive confirmation of validity and reliability across all models.

Table 4. Model Fit Indices and Coefficient of Determination

Index	Obtained Value	Acceptable Threshold	Result
Standardized Root Mean Square Residual (SRMR)	0.048	<0.08	Desirable
Normed Fit Index (NFI)	0.92	> 0.90	Appropriate
Chi-Square / df	1.85	<3.00	Acceptable
Profit Returns (Coefficient of Determination, R^2)	0.61	–	Good explanatory power

The structural equation model's overall fit and explanatory power are reported in Table 4, indicating that the conceptual model adequately represents the empirical data. The Standardized Root Mean Square Residual (SRMR) was calculated at 0.048, which falls well below the maximum acceptable threshold of 0.08, denoting a desirable model fit. The Normed Fit Index (NFI) reached 0.92, satisfying the requirement of being greater than 0.90, while the relative Chi-Square value (Chi-Square/df) was 1.85, fitting comfortably within the acceptable limit of less than 3.00. Additionally, the Coefficient of Determination (R^2) for the endogenous variable, profit returns, was determined to be 0.61, indicating that the independent intellectual capital constructs account for 61%of the variance in organizational profit returns, thereby demonstrating a good explanatory power for the structural model.

Table 5. Ranking of Intellectual Capital Components and Sub-components Based on Their Impact on Profit Returns

Main Component	Sub-components	Path Coefficient (β)	Overall Rank
Human Capital	Employee skills and expertise	0.43	1
	Training and empowerment	0.41	
	Work experience and knowledge	0.40	
	Motivation and job satisfaction	0.39	

Relational Capital	Internal organizational relations	0.39	2
	Collaboration with stakeholders	0.38	
	Professional networking	0.37	
	Trust and interaction between units	0.36	
Structural Capital	Clear organizational structure	0.36	3
	Documented work processes	0.35	
	Knowledge management	0.34	
	Information systems and technology	0.33	

Table 5 provides a detailed ranking of the main intellectual capital components and their respective sub-components based on the magnitude of their standardized path coefficients (β) concerning their impact on profit returns. Human capital emerged as the most influential main component (Overall Rank 1), driven primarily by "employee skills and expertise" ($\beta = 0.43$), followed closely by "training and empowerment" ($\beta = 0.41$), "work experience and knowledge" ($\beta = 0.40$), and "motivation and job satisfaction" ($\beta = 0.39$). Relational capital secured the second overall rank, with "internal organizational relations" ($\beta = 0.39$) and "collaboration with stakeholders" ($\beta = 0.38$) showing the strongest effects within this category. Finally, structural capital ranked third overall, where "clear organizational structure" ($\beta = 0.36$) and "documented work processes" ($\beta = 0.35$) were identified as its most impactful sub-components on enhancing organizational profit returns.

Discussion and Conclusion

The present study utilized an exploratory-sequential mixed-methods design to construct a comprehensive intellectual capital model and subsequently evaluate the impact of its underlying dimensions on the profit returns of organizations. The quantitative phase of the research, which tested the conceptual model developed during the qualitative phase, yielded significant empirical insights into the hierarchical importance of intellectual capital components. The structural equation modeling analysis revealed that all three primary dimensions of intellectual capital exerted a positive and statistically significant impact on organizational profit returns. Notably, the path coefficient analysis demonstrated a distinct ranking among these dimensions in terms of their magnitude of influence. Human capital emerged as the most influential factor, ranking first with the highest predictive power ($\beta = 0.42$). Relational capital was identified as the second most impactful dimension ($\beta = 0.38$), followed closely by structural capital, which ranked third ($\beta = 0.35$). These findings provide robust empirical support for the premise that intangible assets are critical drivers of financial performance, highlighting the specific areas where organizational investments yield the highest economic returns.

The primary finding that human capital constitutes the most significant driver of profit returns aligns seamlessly with foundational and contemporary paradigms in intellectual capital research. Human capital encapsulates the collective knowledge, skills, innovativeness, and problem-solving capabilities of the workforce. The predominant influence of this dimension suggests that the bedrock of value creation in modern organizations is fundamentally rooted in human intellect. This result is strongly supported by previous studies emphasizing that effective human resource practices and the continuous enhancement of employee competencies are indispensable for organizational success (5). Furthermore, in highly specialized and knowledge-intensive sectors, such as healthcare, researchers have consistently found that human expertise is the primary catalyst for improved financial metrics and operational efficiency (15, 16). The finding also resonates with the historical conceptualization of intellectual capital, which initially sought to bridge the gap between book and market value by recognizing the immense, yet frequently

unrecorded, wealth-generating potential of the human workforce (3, 4). Ultimately, without the creative and cognitive input of human capital, structural and relational assets remain inert and incapable of driving profitability.

The identification of relational capital as the second most impactful dimension highlights the critical role of external networks, customer relationships, and brand reputation in translating internal capabilities into financial gains. Relational capital serves as the conduit through which an organization interacts with its market environment, facilitating knowledge exchange and fostering stakeholder loyalty. The significant positive impact of relational capital on profit returns is corroborated by extensive literature demonstrating that strong external networks are vital for sustaining competitive advantage and driving revenue growth (2). In the context of the financial sector, particularly within banking institutions, robust customer relationships and stakeholder trust have been shown to significantly boost profitability and productivity (7, 8). This is especially true for Islamic banks, where relational capital, built on ethical compliance and shared values with stakeholders, is a pivotal component of financial stability and successful performance (9). Therefore, the ability of an organization to effectively manage its boundary-spanning relationships directly moderates its capacity to capture market value and enhance profit returns.

Structural capital, ranking third in its impact on profit returns, represents the supportive infrastructure—such as databases, processes, patents, and organizational culture—that institutionalizes human knowledge and makes it accessible across the enterprise. While its direct impact on profitability was found to be slightly lower than human and relational capital in this study, its positive and significant coefficient ($\beta = 0.35$) confirms its indispensable role as an enabling mechanism. Structural capital provides the necessary framework that allows human capital to function efficiently and relational capital to be managed systematically. This finding is consistent with recent research highlighting the integration of structural intellectual capital with organizational learning to enhance service innovation and operational efficiency (6). Furthermore, studies investigating Small and Medium-sized Enterprises (SMEs) during crises, such as the COVID-19 pandemic, have demonstrated that robust structural frameworks are essential for maintaining resilience and sustained profitability (14). In commercial banking, the systematic growth of structural and intellectual capabilities has similarly been proven to reliably predict ongoing and future profitability (10).

The combined positive effect of these three dimensions on profit returns also sheds light on broader corporate financial behaviors and sustainability strategies. As demonstrated by the findings, organizations that effectively harness their intellectual capital achieve superior financial outcomes, which in turn influences their strategic positioning. Highly profitable firms, driven by strong intellectual capital, often exhibit greater transparency in disclosing their intangible assets to signal market superiority to investors (17). Moreover, the interplay between capital structure, firm value, and profitability is deeply intertwined with the underlying knowledge base of the firm (18). Profitability derived from intellectual capital can also moderate complex corporate actions, including real earnings management, suggesting that knowledge-driven firms employ distinct financial reporting strategies (19). Top-tier human and structural capital also guide broader financial decisions, such as leverage, capital intensity, and corporate social responsibility initiatives, which interact to optimize tax strategies and overall corporate value (20).

Beyond immediate financial metrics, the verified model underscores the strategic importance of intellectual capital in diverse operational contexts, from traditionally resource-intensive sectors like agriculture to dynamic fields like real estate (12, 13). The resilience provided by strong intellectual capital was especially evident during global economic shocks, functioning as a vital buffer to maintain bank profitability in emerging economies (11). Furthermore, as the corporate landscape increasingly prioritizes sustainable development, intellectual capital

serves as the critical link integrating profit motives with ecological and social responsibilities. Research affirms that intellectual capital not only influences sustainability reporting (21) but also significantly strengthens the relationship between the pursuit of Sustainable Development Goals (SDGs) and overall financial performance (1, 22). Thus, the empirical validation of the intellectual capital model in this study confirms that investing in human, relational, and structural capital is not merely an operational necessity but a fundamental strategic imperative for maximizing profit returns and ensuring long-term sustainable growth.

Despite the rigorous mixed-methods design employed in this study, several limitations must be acknowledged when interpreting the findings. First, the quantitative phase utilized a cross-sectional research design, capturing data from the sample of 384managers at a single point in time. While structural equation modeling allows for the testing of causal paths based on theoretical frameworks, the cross-sectional nature restricts the ability to definitively establish long-term causal relationships between intellectual capital dimensions and profit returns. Second, the reliance on a researcher-made questionnaire utilizing a Likert scale introduces the potential for self-report bias, as managers may have overestimated their organization's intellectual capital capabilities or financial performance due to social desirability. Finally, while the sample included diverse organizations (private, public, cooperative), the findings may be bounded by the specific cultural, economic, or regulatory contexts in which these organizations operate, potentially limiting the generalizability of the model to fundamentally different international or industry-specific environments.

To address these limitations and further advance the field, several avenues for future research are recommended. Future studies should prioritize longitudinal research designs to track the evolution of intellectual capital within organizations over time, allowing for a more dynamic analysis of how changes in human, structural, and relational capital sequentially impact profit returns. Additionally, researchers could incorporate objective financial data, such as audited financial statements or market valuation metrics, to supplement and triangulate the subjective perceptual data gathered from management surveys. It is also highly recommended to expand the structural model by introducing potential moderating or mediating variables, such as environmental turbulence, leadership styles, or technological disruption, to better understand the boundary conditions under which intellectual capital most effectively translates into financial performance. Cross-cultural and multi-national comparative studies would also be valuable in determining the universal applicability of the developed model versus its context-specific variations.

For organizational leaders and practitioners, the findings of this study offer clear and actionable strategic directives. Given that human capital was identified as the most impactful driver of profit returns, organizations must prioritize investments in continuous employee training, professional development, and the creation of incentive structures that attract and retain top talent. Cultivating an environment that encourages innovation and rewards knowledge-sharing will directly augment the organization's primary value-creation engine. Concurrently, recognizing the second-place ranking of relational capital, managers should strategically invest in customer relationship management systems, brand-building initiatives, and the formation of strategic alliances to strengthen their external network. Finally, to ensure these human and relational assets are fully leveraged, executives must systematically upgrade their structural capital by modernizing information technology infrastructure, optimizing internal workflows, and fostering a robust organizational culture that institutionalizes acquired knowledge. By adopting this holistic, prioritized approach to managing intangible assets, organizations can significantly enhance their competitive positioning and maximize their long-term profit returns.

Acknowledgments

We would like to express our appreciation and gratitude to all those who helped us carrying out this study.

Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

All ethical principles were adheried in conducting and writing this article.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

Funding

This research was carried out independently with personal funding and without the financial support of any governmental or private institution or organization.

References

1. Mandariani H, Cave S. Assessing the Impact of Intellectual Capitals Towards Business and Stock Market Performance for Indonesian Consumer Goods Industries Post AFCTA Using VAIC™ Method Ergo Number. Journal Transnational Universal Studies. 2025;3(5). doi: 10.58631/jtus.v3i5.164.
2. Yin J, Xu J. Intellectual capital, digital transformation and firms' financial performance: Evidence from ecological protection and environmental governance industry in China. PLoS ONE. 2025;20(1):e0316724. doi: 10.1371/journal.pone.0316724.
3. Mondal A, Ghosh SK. Intellectual capital and financial performance of Indian banks. Journal of Intellectual Capital. 2012;13(4):515-30. doi: 10.1108/14691931211276115.
4. Nuryaman A. The Influence of Intellectual Capital on The Firm's Value with The Financial Performance as Intervening Variable. Procedia - Social and Behavioral Sciences. 2015;211:292-8.
5. Rajput N, Das G, Shivam K, Kumar Nayak C, Gaurav K, Nagpal P. An inclusive systematic investigation of human resource management practice in harnessing human capital. Materials Today: Proceedings. 2023;80:3686-90. doi: 10.1016/j.matpr.2021.07.362.
6. Abubakr K, Kalifa W. The Impact of Sustainability Knowledge Sharing on Service Innovation in Libyan Banks: The Mediating Role of Intellectual Capital and Organizational Learning. Sustainability. 2025. doi: 10.3390/su17083545.
7. Haris M, Yao H, Tariq G, Malik A, Javaid HM. Intellectual Capital Performance and Profitability of Banks: Evidence from Pakistan. Journal of Risk and Financial Management [Internet]. 2019; 12(2).
8. Yao H, Haris M, Tariq G, Javaid HM, Khan MAS. Intellectual capital, profitability, and productivity: evidence from Pakistani financial institutions. Sustainability. 2019;11(14):3842.

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

10. Wahyuni S, Pujiharto P, Pratama BC, Azizah SN. Analysis of the rate of growth of intellectual capital ability in predicting present and future profitability of Sharia commercial banks in Indonesia. Asian Journal of Accounting Research. 2023;8(2):194-206. doi: 10.1108/AJAR-10-2021-0226.

11. Xu J, Haris M, Irfan M. The Impact of Intellectual Capital on Bank Profitability During COVID-19: A Comparison With China and Pakistan. Complexity. 2022;2022(1). doi: 10.1155/2022/2112519.

12. Ovechkin DV, Romashkina GF, Davydenko VA. The Impact of Intellectual Capital on the Profitability of Russian Agricultural Firms. Agronomy. 2021;11:286. doi: 10.3390/agronomy11020286.

13. Singla HK. Does VAIC affect the profitability and value of real estate and infrastructure firms in India? A panel data investigation. Journal of Intellectual Capital. 2020;21(3). doi: https://doi.org/10.1108/JIC-03-2019-0053.

14. Papíková L, Papík M. Intellectual Capital and Its Impacts on SMEs Profitability During COVID-19 Pandemic. Journal of Eastern European and Central Asian Research (Jeecar). 2022;9(3):521-31. doi: 10.15549/jeecar.v9i3.894.

15. Tiwari R. Nexus Between Intellectual Capital and Profitability With Interaction Effects: Panel Data Evidence From the Indian Healthcare Industry. Journal of Intellectual Capital. 2021;23(3):588-616. doi: 10.1108/jic-05-2020-0137.

16. Tiwari R. Nexus between intellectual capital and profitability with interaction effects: Panel data evidence from the Indian healthcare industry. Journal of Intellectual Capital. 2022;23:588-616. doi: 10.1108/JIC-05-2020-0137.

17. Pakdalan S, Azarbarhaman A, Bazghandi M, Zeinabi N. Investigating the Impact of Corporate Profitability on the Disclosure of Intellectual Capital and its Dimensions in Companies Listed on the Tehran Stock Exchange. Scientific Journal of New Research Approaches in Management and Accounting. 2020;4(15):48-76.

18. Kamisanti R. The Effect of Capital Structure on Company Value With Profitability as an Intervening Variable. Journal of Studies in Academic Humanities Research and Innovation. 2025;2(2):744-55. doi: 10.71305/sahri.v2i2.1136.

19. Rachmawati S. Moderating Effect of Profitability on Intellectual Capital and Real Earnings Management. The Accounting Journal of Binaniaga. 2020;5(01):33. doi: 10.33062/ajb.v5i01.366.

20. Sulaeman A. The Influence of Capital Intensity, Leverage, Profitability, and Corporate Social Responsibility on Tax Avoidance With Firm Size as a Moderating Variable. Asian Journal of Economics Business and Accounting. 2024;24(5):433-42. doi: 10.9734/ajeba/2024/v24i51320.

21. Bonabi Ghadim R, Vaez SA, Ensani R. The Effect of Intellectual Capital on Sustainability Performance Reporting and Business Strategy. Financial Accounting Research. 2022;14(2):63-90. doi: 10.22108/far.2022.133847.1890.

22. Arif W, Habbe AH, Rasyid S, Madein A. The Role of Intellectual Capital in Strengthening the Relationship Between Sustainable Development Goals (SDGs) and Market Performance. JLSDGR. 2025;5(1):e04107. doi: 10.47172/2965-730x.sdgsreview.v5.n01.pe04107.