



Intellectual Capital on Performance of Financial Institutes (Case Study: Balkh Province)

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ABSTRACT

This study investigates how intellectual capital influences the performance of financial institutions in Balkh province, Afghanistan, emphasizing its role as a core intangible asset that drives value creation in modern organizations. Intellectual capital, based on the model of Caba and Sierra (2001), is examined through its three key components human capital, structural capital, and relational capital. Data were collected from 120 licensed money exchangers and private commercial banks in Mazar-e-Sharif using a structured questionnaire measured on a five-point Likert scale, and the analysis was conducted using descriptive statistics and optimal scaling regression in SPSS. The results indicate that intellectual capital substantially contributes to institutional performance, with an R^2 value of 0.63, demonstrating that the examined variables account for 63% of performance variance. Within human capital, five indicators show significant influence, highlighting the importance of employee creativity, professional competencies, training, dynamism, and overall operational capability. In structural capital, two indicators organizational research and development capacity and operational efficiency emerge as meaningful contributors to performance. Relational capital also proves relevant, with communication quality with customers and suppliers showing significant positive effects. Overall, the findings confirm that human, structural, and relational capital collectively shape the performance of financial institutions in Balkh, with human capital exerting the strongest influence. These results underscore the need for financial institutions in Afghanistan to prioritize the development, management, and continuous enhancement of intangible assets to improve competitiveness, service delivery, and long-term organizational sustainability.

Introduction

The emergence of the knowledge-based economy has raised the level of concern for intellectual capital (IC) as a key driver of organizational competitiveness and sustainable performance around the world. As globalization, technological development and market liberalization shape new economic systems, organizations, particularly financial institutions, must increasingly draw on knowledge resources, innovation capability and human expertise as ways of maintaining competitive advantage.

Prior research emphasizes the fact that intangible resources, especially IC, now constitute a significant portion of corporate value, and they are frequently

more important than physical or financial resources in determining organizational success (Pew Tong et al.,2007; Seetha Raman et al.,2002). This change has spurred an increased focus on research interest in conceptualizing, measuring, and implementing IC, in various sectors, in order to improve organizational effectiveness.

Historically, there are many phases in the evolution of intellectual capital research, which starts from the initial focus on human skills and organizational learning, and gradually moves to the structured models of classifying IC into human, structural, and relational elements of IC. Earlier reviews have documented the role of IC in organizational development; however, many of them focused on

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the developed economies and large corporations, leaving a large gap in research to understand how IC operates in emerging or low-income financial systems. Limited studies have been conducted on IC in Afghanistan where the financial sector comprising the banks, money service providers as well as "Sarafi" institutions have been undergoing a major transformation in the recent years. Despite this growth, organizations in Afghanistan still pay insufficient attention to identify, measure and leverage IC which contributes to persistent inefficiencies and weak performance across many institutions.

Given this gap, the present study discusses the effect of intellectual capital on the performance of financial institutions in Balkh province with a specific focus on the role of human capital, structural capital, and relational capital. The study spans the literature from 2000 to 2024, and it captures classical and contemporary thinking about IC measurement and contribution to organizational outcomes. By combining the results of international research and putting the contextual realities of the Afghan financial sector, this review aims to explain the mechanisms by which IC contributes to efficiency, profitability, and long-term sustainability. In addition, this study also brings the issue of widening the gap between market value and book value in many organizations, which is usually attributed to the intangible assets that are not reflected in the financial statements, which may also underline the relevance of IC in the modern economic environment.

Understanding and quantifying IC is of high importance to managers, policymakers and practitioners in Afghanistan where human expertise, organizational systems and customer relationships are underutilized sources of competitive advantage. Recognizing the indicators of IC and evaluating its impact on the performance of organizations can help financial institutions enhance development strategies, boost their productivity, and improve their service delivery. By exploring the relationship between IC components and financial performance, this study helps to fill the gap in the empirical studies in the field of financial research in Afghanistan while providing insights for actionable decisions for institutions seeking sustainable competitive advantage.

This research was carried out in Mazar-e Sharif, Balkh Province, in Afghanistan from the time period 2023-2024.

Literature Review

intangible asset which determines the competitiveness of organizations, their innovation capabilities and long-term performance in modern knowledge-based economies. Scholars generally agree that IC comprises three interlinked components, namely, human capital, structural

capital and relational capital, and that all three contribute in various ways to the creation of value by their knowledge, systems and external relationships. Empirical researches in widely different economic contexts, such as Malaysia, Singapore, Japan, Taiwan, India, Iran, Luxembourg and Belgium, have shown that enterprises which possess stronger IC have higher profitability, higher productivity, better market value and more sustainable competitive advantages. These studies usually are based on standardized measurement frameworks of which the VAIC (Value Added Intellectual Coefficient) model presented by Pulic (2000) is the most widely used. VAIC is a measure of IC performance in terms of three indicators Human Capital Efficiency (HCE) which measures the value created by the knowledge and skills of employees; Structural Capital Efficiency (SCE) which is a measure of the contribution of organizational systems, processes and internal structures; and Capital Employed Efficiency (CEE) which is a measure of the efficiency with which financial and physical capital are used in value creation. This model is a useful tool for relating intangible resources to financial outcomes, and has been widely used in banking, insurance, telecommunications and corporate industries. Despite the solid international evidence of the strategic role of IC, the Afghan context is still very much under-researched. Existing studies in Afghanistan are more of general functions of financial institutions without formally defining IC and assess the impact of IC in organizational performance. This absence of localized empirical research results in a gap in the understanding of the operations of human, structural and relational capital in the financial institutions in Afghanistan, particularly at the provincial level where institutional capacity and resource availability vary greatly. Addressing this gap, the present study adopts the model of Caba and Sierra (2001) whose simplicity and applicability is recognized and, in this study, IC is analyzed through measurable indicators and its impact on the performance of financial institutions in Balkh province is analyzed. This approach not only allows to extend the global literature on IC to a new geographical context but also to share practical insights for managers and policymakers who will be trying to strengthen institutional efficiency in the developing financial sector in Afghanistan.

Methodology

This study had applied and analytical research design and aimed to investigate the impact of the intellectual capital on the performance of financial institutions in Balkh province. The target population were all the financial entities working in Mazar-e Sharif, including commercial banks, financial

institutions and licensed money exchange dealers. A systematic random sampling procedure was followed to insure representativeness. Based on the rule of thumb method for regression analysis (5-15 observations per predictor), a total of 120 valid responses were obtained and obtained in the dataset. The instrument for data collection was a structured questionnaire which was developed based on the model of Caba and Sierra (2001) which measures three components of intellectual capital (human capital, structural capital, and relational capital) and institutional performance. To assess these indicators a five-point Likert scale was used. A pilot test was performed to assure the adequacy of instruments used and Reliability were checked by using Cronbach's Alpha (a=0.62) which was found to be acceptable for exploratory research. Both descriptive and inferential statistical methods were used. Given that the independent variables were ordinal in nature, Optimal Scaling Regression, a powerful technique that can be used with mixed levels of measurement and categorical predictors was employed in this study. Prior literature that describes the method (Young, de Leeuw & Takane, 1976) was used as the theoretical reference for the

procedure. The dependent variable organizational performance was coded from 1 (lowest achievement of institutional goals) to 5 (highest achievement). A total of 120 observations were used in the regression analysis.

The statistical model, which was used in this study, was specified as:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \varepsilon$$

where X_1 , X_2 , and X_3 represent human, structural and relational capital respectively, and Y denotes institutional performance. No environmental, chemical or operational hazards were associated with the conduct of this research.

Result

The result of analysis shows that all components of intellectual capital have shown to have a strong descriptive value, with mean values greater than 4 in human, structural and relationship capital indicators with generally positive view of internal capabilities and external relationships among financial institutions in Balkh province.

Table 1. Descriptive Statistics of IC Indicators

Intellectual Capital Components	Number of Indicators	Mean (Overall)	Standard Deviation (Overall)
Human Capital	10	4.31	0.70
Structural Capital	10	4.31	0.72
Relational Capital	4	4.31	0.65

Source: Research Findings

The reliability assessment of the measurement instrument indicates that the internal consistency

level is acceptable to conduct exploratory research. Cronbach's alpha is 0.62.

Table 2. Table of Cronbach's alpha test

Reliability Statistics	
Cronbach's Alpha	N of Items
.620	24

Source: Research findings

In order to investigate the effect of intellectual capital on institutional performance, an optimal scaling regression model was estimated. The model shows that the multiple correlation is 0.795 and R2 is 0.632, which means that about 63% of the

variation of the institutional performance is accounted for by the combined effects of human, structural and relational capital.

Table 3. Model Summary (R Square)

Model Summary			
Multiple R	R Square	Adjusted R Square	Apparent Prediction Error
.795	.632	.374	.368

Source: Research findings

The statistical significance of the regression model is further confirmed using the analysis of variance (F=2.449, p<0.001), showing that the set of

predictors as a whole is a meaningful explanation for the differences in performance between institutions.

Table 4. ANOVA Table

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Regression	75.786	49	1.547	2.449	.000
Residual	44.214	70	.632		
Total	120.000	119			

Source: Research findings

Analysis of standardized beta coefficients indicates that a number of human capital factors such as creativity of employees, employee dynamics, manpower changes, training and competencies, and previous experience have significant positive impact on performance. Within the structural capital, the existing organizational culture and the efficiency of its operation come to be relevant as important predictors, while in the case of the relational capital,

communication with customers and suppliers as well as the development of the institution's research and development network are demonstrated to possess significant and statistically significant effects. First of all, the R&D network displays the highest beta value, which implies a dominant role in affecting the institutional performance.

Table 5. Standardized Beta Coefficients

	Standardized Coefficients		df	F	Sig.
	Beta	Bootstrap (1000) Estimate of Std. Error			
employee's creativity	.199	.308	3	.417	.007
employee dynamics	.545	.266	2	4.200	.019
hiring new employees	-.468	.408	4	1.315	.273
dismissal of employees and the change in manpower	.483	.449	2	1.160	.032
reward and service compensation system	-.265	.374	2	.504	.606
effects of employee's job competencies and training before taking job and during service	.233	.301	3	.600	.006
effect of age and individual variables of the employees	-.251	.332	3	.570	.637
effect of per capita cost of each employee and their added value	-.411	.257	1	2.562	.114
effect of group activities and the ability to work in a group	.029	.265	1	.012	.912
effect of previous experience of individuals and employees	.430	.308	1	1.949	.017
organizational culture	.205	.263	3	.612	.006
clear relationship and authority of employees	.343	.353	1	.945	.334
credibility of the organization's control system	.143	.375	1	.145	.704
the creation and use of information network within the organization	.314	.451	2	.485	.618
creation and use of organizational information repositories	-.313	.340	3	.849	.472
level of quality of the services	.299	.301	1	.986	.324
operational efficiency of the organization	.695	.334	2	4.339	.017
mutual support and cooperation between employees	-.102	.266	3	.146	.932
ability of employees to access information	-.071	.234	3	.092	.964
the process of knowledge sharing among employees	-.325	.248	1	1.714	.195

development of the organization's research and development network	.885	.401	3	4.871	.004
the knowledge about customers	-.341	.372	1	.842	.362
strategic agreements and relationships	.416	.284	2	2.153	.124
communicating with customers and suppliers	.341	.351	1	.941	.003
Source: Research findings					

Discussion

The findings of this study clearly demonstrate that intellectual capital is a major determinant of performance in financial institutions in Balkh province. Consistent with global literature, human capital emerged as the strongest component, confirming the arguments of Bontis (1998) and Tan et al. (2007) that creativity, skills, experience and employee dynamics directly enhance organizational outcomes. The significance of indicators such as creativity, training and previous experience highlights the need for continuous development of human resources in financial institutions.

Structural capital also showed a meaningful impact, especially through organizational culture and operational efficiency. Similar to the results reported by Pulic (2000), and Mavridis (2004), this study indicates that strong internal systems, clear processes and supportive organizational culture create an environment where employees can use their competencies effectively. Improved efficiency and better access to information contribute to faster service delivery and higher customer satisfaction.

Relational capital was another influential factor, particularly communication with customers and the development of research and development networks. This reinforces the views of Stewart (1997) and Sveiby (1997), who emphasize the strategic role of external relationships in organizational success. In Afghanistan's financial sector where trust-based transactions are common strong customer relationships are essential for institutional stability. The regression model showing that intellectual capital explains 63% of performance is comparable to findings in Indian and Iranian financial institutions (Mondal & Ghosh,2012; Alipour & Hejazi,2016). This indicates that intellectual capital is not only conceptually important but empirically significant across different financial systems.

Overall, the results confirm that human, structural and relational capital operate together to enhance organizational performance. Human capital fuels innovation, structural capital provides the operational backbone and relational capital strengthens customer and stakeholder engagement. Improving these components can substantially enhance the competitiveness and sustainability of financial institutions in Afghanistan.

Conclusion

The findings of this study demonstrate that intellectual capital plays a crucial role in the performance of financial institutions in Balkh

province. Human, structural and relational capital all have significant relationships with performance, and together they explain a large proportion of the variance in institutional outcomes.

Human capital is particularly important. Employee creativity, dynamics, competencies, training and previous experience are strongly linked to institutional performance. This highlights the need for continuous investment in human resource development, including training programs, skill enhancement and the creation of an organizational environment that supports innovation and learning. Structural capital, especially organizational culture and operational efficiency, also contributes significantly to performance. Financial institutions that establish clear processes, effective control systems, strong information networks and a cooperative culture are better positioned to use their human capital effectively and deliver high-quality services.

Relational capital is essential in the context of Afghanistan's financial sector, which is largely trust-based. The development of research and development networks and strong communication with customers and suppliers are key factors that connect internal capabilities with external stakeholders and markets. Institutions that maintain close relationships with customers, understand their needs and engage in strategic cooperation with partners are more likely to sustain and improve their performance.

In summary, intellectual capital is not only an important part of organizational capital but also a source of sustainable competitive advantage for financial institutions. Managers and policymakers in the Afghan financial sector should therefore give priority to strategies that enhance human, structural and relational capital in order to improve performance and support long-term financial sector development.

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Authors' Contributions

All authors contributed to data analysis, drafting, and revising of the paper and agreed to be responsible for all the aspects of this work.

References

- [1] Alipour, Mohammad, Hejazi, Rezvan, (2016). The importance of measuring intellectual capital. *Accounting Research Journal* No. 20.
- [2] Anghel, I. (2008). *Intellectual Capital and Intangible Assets Analysis and Valuation. Theoretical and Applied Economics*, vol. 2.
- [3] Anne-Laure & Bontis, Nick. (2013). Intellectual capital and performance within the banking sector of Luxembourg and Belgium. *Journal of Intellectual Capital*. 14. 10.1108/14691931311323896.
- [4] Anshori, M., Iswati, S. (2007). The Influence of Intellectual Capital to Financial Performance at Insurance Companies in Jakarta Stock Exchange (JSE). 13th Asia Pacific management Conference. Melbourne, Australia.
- [5] Becker, B. E., Huselid, M. A., & Ulrich, D. (2001). *Scorecard: linking people, strategy and performance*. Boston, Massachusetts: Harvard Business School Press.
- [6] Bernardin, H. J. (2003). *Human Resource Management: An Experiential Approach*. McGraw-Hill higher education: McGraw-Hill/Irwin, 2003.
- [7] Bhartesh, k. R., and A. K. Bandyopadhyay. (2005). Intellectual Capital: Concept and its measurement. *Finance India*, Vol. 19, No. 4.
- [8] Bontis. (1996). there is a price on your head: managing intellectual capital strategically. *Business Quarterly Summer*.
- [9] Bontis. (1996). There is a Price on Your Head: Managing Intellectual Capital Strategically. *Ivey Business Journal (Formerly Business Quarterly)*. Summer.
- [10] Bontis, N. (1998). Intellectual capital: an exploratory study that develops measures and models. *Managing Decision* Vol. 36. No. 2.
- [11] Brooking, A. (1996). *Intellectual Capital*. London: International Thompson Business Press.
- [12] Burud, S. & Tumolo, M. (2004). Leveraging the new human capital: Adaptive strategies, results achieved, and stories of transformation. Palo Alto, CA: Davies-Black Publishing.
- [13] Caba, C. & Sierra, M. (2001). Incorporation de un estado sobre el capital intelectual en los organismos. *Actual dad Financiera*, No. 175.
- [14] Chen, J., & Zhu. Z. and Xie, H. (2004). Measuring intellectual capital: a new model and empirical Study. *Journal of Intellectual Capital*, Vol.5, No.1.
- [15] Chen, M.Chin, Cheng, S.J., Hwang, Y. (2005). An Empirical - Investigation of the Relationship between Intellectual Capital and Firm Market Value and Financial Performance. *Journal of Intellectual Capital*. No 2.
- [16] Chen, Y. S. (2008). The Positive Effect of Green Intellectual Capital on Competitive Advantages of Firms. *Journal of business ethics*.
- [17] Donalson, T., Preston, L.E. (1995). The Stakeholders Theory of the Corporation: Concepts, Evidence and Implications. *Academy of Management Review*. No 1.
- [18] Edvinson, L. P. (1996). Developing a Model for Managing Intellectual Capital. *European Management Journal*. No 14.
- [19] Firer, S and Williams, M. (2003). Intellectual capital and traditional measures of corporate Performance. *Journal of Intellectual Capital* Vol.4, No.3.
- [20] Fornell, C., Johnson, M. D., Anderson, E. W., Cha, J., & Everitt Bryant, B. (1996). Growing the trust relationship. *Journal of Marketing*, 60 (4).
- [21] Goodarzi M. R. & Goodarzi A. (2015). The Role of Human Capital Development and Innovation in Healthcare. *Journal of health management and informatics*, 20.
- [22] Green, K. W., Nman, R., Brown, G. & Willis, T. (2010). Market orientation: Relation to structure and performance. *The Journal of Business and Industrial Marketing*, 20 (6).
- [23] Haqqani. (2018). Measuring Intellectual Capital to Develop Human Resources in Automobile Companies. *New Approach in Educational Management*, Volume 9, Number 1.
- [24] Johari, F. Rezvani Chaman Zamin, M. Moghimi, F. (2013). Investigating the Impact of Employment Strategy on Employee Performance in Public Organizations. *Quantitative Management Studies*, No. 24.
- [25] Joia, L. A. (2000). Measuring and benchmarking intellectual capital. *Benchmarking*, Vol. 11, No. 6.
- [26] Kaplan, R. S. (1993). Putting the balanced scorecard to work. *Harvard Business Review* (September-October).
- [27] Kaplan, R. S. and D. P. Norton. (2004). Measuring the strategic readiness of intangible assets. *Harvard Business Review* (February).
- [28] Kogut, B., & Znder, U. (1996). What do firms do? Coordination, identity and learning. *Organization Science*, vol7.
- [29] Kontic. L., & Cabrilo S. (2009). A strategic model for measuring intellectual capital in Servian industrial enterprise, *Economic Annals*, Volume LIV, No 183.
- [30] Koushanfar & Gulchin. (2016). Accounting Theories and Methods of Measuring Intellectual Capital. *Applied Research in Management and Accounting*, No. 7.

- [31] Lev, & B., R. S. (2003). The measurement of Firm-Specific Organization Capital. NBER Working Paper. No 9581.
- [32] Maditinos, D., Chatzoudes, D., Tsairidis, C. and Theriou, G. (2011). The impact of intellectual capital on firms' market value and financial performance. *Journal of Intellectual Capital*, Vol. 12 No. 1.
- [33] Madooshi, Mehrdad & Asgharnejad Amiri, Mehdi. (2009). Measuring Intellectual Capital and Investigating its Relationship with Corporate Financial Return. *Accounting and Auditing Studies*, No. 57.
- [34] Mavridis, D. (2004). The intellectual capital performance of the Japanese banking sector. *Journal of Intellectual Capital*.
- [35] Mondal, Amitava & Ghosh, Santanu. (2012). Intellectual capital and financial performance of Indian banks. *Journal of Intellectual Capital*. 13. 10.1108/14691931211276115.
- [36] Moorhead, H. a. (1998). *Organizational Behavior*. Boston. Lixivia: Houghton Mifflin Company.
- [37] Murray, A., Papa, A., Cuzzo, B., Russo, G. (2016). Evaluating the innovation of the Internet of Things: empirical evidence from the Intellectual Capital assessment. *Business Process Management Journal*, 22.
- [38] Namazi, M. &. (2009). Investigating the effect of intellectual capital on current and future financial performance of listed companies in Tehran Stock Exchange. *Journal of Accounting and Auditing Research*.
- [39] Pablos, P. O. (2003). Intellectual capital reporting in Spain: a comparative view. *Journal of Intellectual Capital*, Vol. 4 No. 1.
- [40] Pew Tong, H. P. (2007). Intellectual Capital and Financial Returns of Companies", PP. *Journal of Intellectual Capital*, No.1.
- [41] Pew Tong, Hong, Plowman, David & Hancock, Phil. (2007). Intellectual Capital and Financial Returns of Companies. *Journal of Intellectual Capital*, No. 1.
- [42] Pulic, A. (2000). VAIC an Accounting Tool for IC Management". Available online: Retrieved from <http://www.measuring-ip.at/papers/ham99txt.htm>.
- [43] Rodov, I. P. (2002). FIMIAN: Financial Method of Intangible Assets Measurement. *Journal of Intellectual Capital*. No 3.
- [44] Roos, G & Roos, J. (1997). Measuring your company's intellectual performance. *Long Range Planning*, Vol. 30. No. 3.
- [45] Roos, Johan & Roos, Göran & Dragonetti, Nicola & Edvinsson, Leif. (1997). *Intellectual Capital: Navigating in the New Business Landscape*. London: MACMILLAN press LTD.
- [46] Roos, Johan, Gooran Roos, Leiv Edvinson & Nicola C Dragonetti. (1997). *Intellectual Capital; Navigating in The New Business Landscape*. *Journal of Systemic Knowledge Management*, Feb 1998.
- [47] Rostami. Ali Asghar, Seraji. Hassan. (2005). Measuring Intellectual Capital and Investigating the Relationship between Intellectual Capital and Stock Market Value of Tehran Stock Exchange Companies", Twelfth Year N. 35. *Journal of Accounting and Auditing Reviews*.
- [48] Schultz, T. (1971). *Investment in Human Capital*. New York: The Free Press.
- [49] Seetharaman, A. & Zaini, Helmi & Saravanan, A.s. (2002). Intellectual Capital Accounting and Reporting in the Knowledge Economy. *Journal of Intellectual Capital*. 3.
- [50] Stewart, T. (1997). *Intellectual Capital: The New Wealth of Nations*. New York, NY: Doubleday Dell Publishing Group.
- [51] Sveiby, K. (1997). *The New Organizational Wealth: Managing and Measuring Knowledge-based Assets*. San Francisco, CA: Berrett-Koehler.
- [52] Talukdar. (2008). What is Intellectual Capital? Retrieved from ATTAINIX consulting: WWW.ATTAINIX.COM
- [53] Tan, H. P., Plowman, D., Hancock, P. (2007). Intellectual Capital and Financial Returns of Companies. *Journal of Intellectual Capital*. No 1.
- [54] Todericiua, R., serban, A. (2015). Intellectual Capital and its Relationship with Universities. *Procedia Economics and Finance* 27.
- [55] Weatherly, L. A. (2003). *Human Capital the Elusive Asset Measuring and Managing Human Capital: A Strategic Imperative for HR*.