“Moderating role of managerial ambidexterity in the relationship between intellectual capital and financial performance”

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MODERATING ROLE OF MANAGERIAL AMBIDEXTERITY IN THE RELATIONSHIP BETWEEN INTELLECTUAL CAPITAL AND FINANCIAL PERFORMANCE

Abstract

Intangible assets represent a crucial source of competitive advantage, particularly for small and medium-sized enterprises in emerging markets. This study examines the moderating role of managerial ambidexterity in the relationship between intellectual capital and financial performance. A quantitative, non-experimental, cross-sectional design was employed, and data were collected from 530 manufacturing firm workers between March and August 2024. The measurement models were validated through assessments of convergent and discriminant validity, while the hypothesized relationships were tested using structural equation modeling with SPSS 27 and AMOS 28. The empirical results demonstrate that intellectual capital exerts a significant positive effect on financial performance ($\beta = 0.257$, $p < .001$). Moreover, managerial ambidexterity significantly moderates this association, further strengthening the intellectual capital–financial performance relationship (interaction $\beta = 0.081$, $p < .001$). In addition, the structural model exhibited satisfactory fit indices, confirming the robustness of the analysis. The study concludes that intellectual capital constitutes a key strategic resource for enhancing financial performance, and its impact is substantially amplified when firms develop managerial ambidexterity capabilities that enable a balance between efficiency and innovation. Finally, this study adds value by demonstrating how intellectual capital and managerial ambidexterity jointly enhance financial performance. Moreover, it addresses a critical research gap in emerging markets, where empirical evidence remains scarce. The findings extend the resource-based view by confirming the synergistic role of dynamic capabilities in emerging-market SMEs.

Keywords intellectual capital, financial performance, managerial ambidexterity, small manufacturing, Peru

JEL Classification D24, M54, L25

INTRODUCTION

In contemporary business environments, financial performance has emerged as a critical indicator for assessing a firm's ability to generate economic results and efficiently allocate resources. Bansal et al. (2023) emphasize that, in today's knowledge-based economy, financial performance increasingly depends on intellectual capital, a set of intangible resources including knowledge, skills, and experiences that enhance competitive advantage. As a result, recent studies have identified intellectual capital as a key driver of financial performance, particularly in the manufacturing sector (Taha et al., 2022). Furthermore, empirical evidence suggests that proper intellectual capital management significantly improves the financial outcomes of small firms (Lestari & Adhariani, 2022).

However, for intellectual capital to effectively drive performance, firms must develop managerial capabilities that enable them to adapt

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and innovate. In this regard, managerial ambidexterity has gained prominence as a strategic capability that allows organizations to balance the exploitation of current resources with the exploration of new opportunities (Osiyevskyy et al., 2020). Managerial ambidexterity empowers managers to implement ambidextrous strategies that foster both efficiency and innovation (Zhang et al., 2022). Despite these theoretical and empirical advances, there remains a notable gap in the literature regarding the integration of intellectual capital, financial performance, and managerial ambidexterity within a unified framework applied to small manufacturing enterprises (Baima et al., 2021; Bansal et al., 2023). This gap remains particularly unexplored in the Latin American SME sector. Although both intellectual capital and managerial ambidexterity are widely acknowledged as critical to firm performance, the interaction between these constructs has not been sufficiently examined in this specific business context (Shamout, 2023; Soewarno & Tjahjadi, 2020).

1. LITERATURE REVIEW

The resource-based view (RBV) has become a fundamental conceptual framework, as it posits that a firm's sustainable competitive advantages derive from the proper identification, management, and exploitation of its strategic resources. From this perspective, the RBV not only guides the optimal administration of organizational resources but also provides directives for more effective strategic decision-making aligned with long-term objectives (Barney, 1991). Along these lines, several empirical studies grounded in this framework have demonstrated that the efficient management of intellectual capital and managerial ambidexterity are indispensable resources that strengthen financial performance by balancing the exploitation of existing resources with the exploration of new opportunities for the firm (Shamout, 2023; Shehzad et al., 2023).

Conceptually, intellectual capital is defined as the set of knowledge, skills, experiences, and relationships possessed by employees, systems, and organizational structures, which interact to create value and build sustainable competitive advantages (Amendola et al., 2023; Gul et al., 2022; Ting et al., 2020; Wang & Hu, 2018). Managerial ambidexterity refers to the managerial ability to simultaneously exploit existing resources while exploring new opportunities, thereby ensuring both operational efficiency and adaptability to dynamic environments (Duncan, 1976; Effendi et al., 2024; Paoloni et al., 2023; Seepana et al., 2022; Shehzad et al., 2023; Zhang et al., 2022). Financial performance, on the other hand, denotes the extent to which an organization achieves its economic objectives, typically measured through indicators such as profitability, liquidity, operational efficiency, and growth (Taha et al., 2022).

Within the knowledge economy, intangible resources such as intellectual capital have gained increasing importance, as they constitute a decisive element for fostering innovation, adaptability, and ultimately, organizational success (Bansal et al., 2023; Yin & Xu, 2025). Accordingly, intellectual capital has been categorized into three components: human capital, structural capital, and relational capital. Human capital is critical for innovation and adaptability, structural capital supports knowledge retention and efficiency, and relational capital enhances reputation and access to external resources (Gul et al., 2022; Liu et al., 2022; Paoloni et al., 2023; Sardo et al., 2018; Shehzad et al., 2023; Rambe et al., 2025).

The relationship between intellectual capital and financial performance has been extensively analyzed in the academic literature (Daat et al., 2021; Gupta et al., 2023; Xu et al., 2023). Empirical studies have confirmed that effective management of intangible assets significantly improves financial performance, reinforcing the strategic role of intellectual capital in the knowledge economy (Gupta et al., 2023; Paoloni et al., 2023; Sardo et al., 2018). Thus, intellectual capital contributes to innovation, adaptability, and efficiency, positioning it as a key source of competitive advantage in dynamic environments (Asiaei & Jusoh, 2017; Baima et al., 2021). At the dimensional level, human capital directly influences innovation and firm adaptability (Ting et al., 2020). In this regard, firms with strong human capital experience higher levels of innovation and consequently improved financial performance (Daat et al., 2021; Liu et al., 2022; Xu & Liu, 2019; Weqar et al., 2021). However, Paoloni et al. (2023) argue that this relationship is not fully proven, while Dancaková and Glova (2024) found no significant relationship between these variables.

Similarly, although several studies have reported a positive relationship between structural capital and financial performance (Gupta & Raman, 2021; Gupta et al., 2023; Paphawasit et al., 2025; Taha et al., 2022), other research has demonstrated the opposite, finding no significant association (Asutay & Ubaidillah, 2024; Ting et al., 2020; Xu & Liu, 2019; Yin & Xu, 2025). Finally, the literature also reveals discrepancies regarding the relationship between relational capital and financial performance: while several studies have confirmed a positive link (Gupta & Raman, 2021; Dancaková & Glova, 2024; Paphawasit et al., 2025; Rahman & Liu, 2023; Xu et al., 2023), others have found contrary evidence (Ayinaddis et al., 2024; Yin & Xu, 2025).

Managerial ambidexterity, for its part, is understood as the ability to simultaneously balance the exploitation of existing resources with the exploration of new opportunities (Gupta et al., 2023; Paoloni et al., 2023). This capability enables managers to sustain operational efficiency while fostering innovation and adaptation to change (Cenamor et al., 2019). Studies highlight that balancing exploitation and exploration maximizes the potential of human capital, particularly in sectors that demand high adaptability (Bansal et al., 2023; Martínez-Román et al., 2025; Pertusa-Ortega et al., 2021; Shehzad et al., 2023; Zahid et al., 2024). The importance of managerial ambidexterity within the business context lies in its role as a key factor for organizational sustainability, the development of dynamic competitive advantages, and the alignment between intellectual capital and financial outcomes. For instance, Saeed et al. (2023) demonstrated that managerial ambidexterity positively influences both financial and market performance in firms in Turkey and Pakistan, while Taha et al. (2022) showed that managerial ambidexterity positively mediates the relationship between intellectual capital and financial performance in industrial firms in Jordan. Despite its strategic relevance, this variable has been underexplored in academic literature, underscoring the need for future studies to examine this relationship.

Despite these theoretical and empirical advances, a notable gap persists in the literature regarding the integration of intellectual capital, financial performance, and managerial ambidexterity within a unified framework for small manufacturing enterprises (Bansal et al., 2023; Shamout, 2023; Baima et al., 2021). Although both intellectual capital and managerial ambidexterity are widely acknowledged as critical to firm performance, the interaction between these constructs has not been sufficiently examined in this specific business context (Soewarno & Tjahjadi, 2020).

This paper intends to contribute empirical evidence to support the implementation of strategic practices that leverage intangible resources and managerial ambidexterity to improve performance outcomes. It responds to suggestions for future research that have called for new studies to propose hypothetical models to test the relationship between intellectual capital, managerial ambidexterity, and financial performance (Baima et al., 2021; Pertusa-Ortega et al., 2021; Rono et al., 2021; Seepana et al., 2022). In this sense, this study explores the moderating role of managerial ambidexterity in the relationship between intellectual capital and financial performance. Accordingly, this study is guided by two central research questions: a) What is the relationship between intellectual capital and financial performance in small manufacturing businesses in Peru? b) What is the moderating effect of managerial ambidexterity on this relationship? Given the aforementioned objectives, the study formulates the following hypotheses:

H1: Intellectual capital has a positive and significant relationship with financial performance.

H2: Managerial ambidexterity has a positive and significant moderating effect on the relationship between intellectual capital and financial performance.

2. METHODOLOGY

This study adopted a quantitative, correlational, and cross-sectional design, which is appropriate for examining associative relationships between latent variables at a specific point in time (Hair et al., 2019). The study aimed to test the relationships among intellectual capital, managerial am-

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bidexterity, and financial performance as conceptualized in the proposed theoretical model. The use of structural equation modeling (SEM) was deemed suitable given its capacity to model latent constructs, account for measurement error, and simultaneously assess multiple relationships (Hair et al., 2019; Kline, 2005). This approach aligns with methodological standards employed in prior studies in the same domain (Mom et al., 2009; Wang et al., 2014), ensuring theoretical and empirical coherence.

The empirical phase began with the construction of a structured, self-administered questionnaire, divided into four key sections: (a) informed consent, ensuring ethical compliance and participant understanding of the study's scope and confidentiality policies; (b) demographic information, to characterize the respondent profile; (c) detailed instructions to guide consistent responses; and (d) research items corresponding to the latent constructs. Specifically, intellectual capital was measured using 26 items adapted from Asiaei and Jusoh (2017), managerial ambidexterity was captured through 14 items from Mom et al. (2009), evenly split between exploration and exploitation dimensions, and financial performance was assessed with six items based on Wang et al. (2014). All items were measured on a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"), enabling interval-level data analysis consistent with SEM assumptions.

Data collection was conducted between March and August 2024, using a probabilistic sampling method targeting owner-managers of formal small manufacturing firms operating in Lima and Callao, Peru, regions selected due to their economic relevance, as they jointly account for over 61% of the national population of small enterprises (INEI, 2021). The questionnaire was distributed electronically via email with the collaboration of a professional research firm, which ensured compliance with ethical research practices, including voluntary participation, informed consent, anonymity, and secure data handling.

From a total of 585 distributed surveys, 530 valid responses were received, reflecting a high response rate of 90.6%. After rigorous data screening and the removal of 24 incomplete or inconsistent cases, a final sample of 506 valid responses (86.5%) was retained for analysis. This sample size is methodologically adequate, exceeding the minimum threshold recommended by Kline (2005), who advises at least 10 to 20 observations per estimated parameter, which was met for the 46 measurement items included in the model. The data analysis followed a two-step SEM approach (Hair et al., 2019). First, measurement model validation was performed through confirmatory factor analysis (CFA) to assess construct reliability and validity (internal consistency, convergent and discriminant validity). Next, the structural model was tested to examine the hypothesized relationships. Analyses were conducted using SPSS version 29 for descriptive statistics and preliminary checks, and AMOS version 28 for SEM modeling and hypothesis testing.

3. RESULTS

This study analyzed a sample of 506 owner-managers of small manufacturing businesses in Peru, whose demographic results revealed significant trends. In terms of educational level, 50% of participants had higher technical education, while 37% had completed university studies, followed by 7% with secondary education and 5% with a master's degree or higher. Regarding age groups, the predominant group (51%) was between 36 and 50 years old, while 42% were between 51 and 65 years old, and only 5% belonged to the 18 to 35 age range. These data reflect a trend toward professional maturity in leadership roles. On the other hand, a notable gender disparity was observed, with a majority representation of men (78%) compared to women (22%), highlighting a gender gap in the management of small manufacturing businesses.

Regarding the type of manufacturing industry, the most represented sectors were chemicals (36%), followed by textiles and leather (22%), metalworking (19%), and food (17%), while the wood and furniture industry showed lower participation (6%). In terms of geographic distribution, 94% of businesses were located in Lima, while the remaining 6% operated in Callao. These findings underscore the centralization of manufacturing activities in the Peruvian capital and the diversification of industries represented in the study.

Table 1. Determinants of the measurement model

Construct	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
Intellectual Capital	.968	.981	.784
Financial Performance	.974	.929	.731
Managerial Ambidexterity	.981	.978	.801

In this study, a measurement model composed of three main constructs (intellectual capital, financial performance, and managerial ambidexterity) was evaluated. For this purpose, a confirmatory factor analysis (CFA) was conducted, allowing for the validation of the proposed model structure. To ensure the reliability and convergent validity of the model, widely accepted criteria from the literature were applied, as established by Fornell and Larcker (1981), Ping (2004), and Chión and Charles (2016). These criteria include a Cronbach's alpha with values equal to or greater than 0.7, a composite reliability (CR) above 0.7, and an average variance extracted (AVE) of at least 0.5. These standards are essential to ensuring the quality and robustness of the obtained results.

Additionally, following the recommendations of Hair et al. (2019), convergent validity was confirmed when AVE values exceeded 0.50 and CR was higher than AVE, criteria that were fully met in the analyzed measurement model. As detailed in Table 1, these results validate the internal structure of the constructs and confirm the reliability of the model used in this study. The confirmation of these parameters not only guarantees the accuracy of the measurements but also reinforces the theoretical robustness of the model, significantly contributing to the overall validity of the findings.

To establish discriminant validity in the study model, the square roots of the average variance extracted (AVE) values for each construct were compared with the correlations between each pair of constructs included in the model. According to the methodological guidelines of Chin (1998) and Hair et al. (2019), discriminant validity is considered confirmed when the square root of AVE (SR AVE) values exceeds the correlations between the constructs. This criterion is fundamental to ensuring that each construct is conceptually unique and does not merely represent a variation of another construct within the model.

As detailed in Table 2, the results obtained confirm that the model's discriminant validity was achieved, indicating that each measured construct is distinct from the others. This finding reinforces the conceptual integrity of the model, ensuring that the included variables represent unique and differentiated dimensions. Therefore, the validation of discriminant validity not only supports the robustness of the theoretical model but also strengthens the reliability of the interpretations derived from the data.

Table 2. Discriminant validity

	F1	F2	F3	SR AVE
F1	.784[a]			0.885
F2	.381**	.801[a]		0.854
F3	.421**	.562**	.717[a]	0.894

Note: F1: Intellectual Capital, F2: Managerial Ambidexterity, F3: Financial Performance. F1 – F3 and F3 had a significant correlation at the bilateral level, $p < 0.01$; **Correlation is significant at $p < 0.01$ (bilateral); [a]: AVE.

The analysis of Tables 1 and 2 confirmed that the model meets the criteria for convergent and discriminant validity established by Hair et al. (2019). Convergent validity was evidenced by AVE values greater than 0.50, while discriminant validity was ensured by observing that the square root of each construct's AVE exceeded the correlations between constructs. These results validate the structure of the measurement model and provide a solid foundation for advancing to structural analysis, where the relationships between variables are evaluated and the hypotheses proposed in the study are checked.

To evaluate the acceptance or rejection of the proposed hypotheses, an analysis was conducted using structural equation modeling (SEM) with the maximum likelihood method. This approach, widely supported in the literature, allowed for examining the relationships between the variables in the hypothesized model and validating the robustness of the theoretical framework. Following the recommendations of Hayes (2009), two complementary methodologies were applied to calculate

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the moderation effect of managerial ambidexterity: the regression method, focused on estimating the factor scores of the independent variable, and Bartlett's method, oriented toward the dependent variable. These techniques ensure a rigorous analysis of the moderating effects within the model.

Regarding the goodness-of-fit indices, the results confirmed that the structural model meets the standards established by Anderson and Gerbing (1988), Byrne (2010), and Hair et al. (2019). The reported values include a $\chi 2$ of 2,195.845 with 692 degrees of freedom ($\chi 2/df = 3.173$), indicating an acceptable fit. Additionally, the incremental and comparative fit indices, such as NFI (0.949), IFI (0.964), TLI (0.960), and CFI (0.964), exceed the 0.90 threshold recommended in the literature. On the other hand, RMSEA reached a value of 0.066, within the range considered acceptable for complex models. These results reinforce the validity of the structural model and support its ability to explain the relationships between the variables.

The analysis of the hypothesized relationships confirmed that intellectual capital has a positive and significant impact on financial performance, with a standardized regression coefficient of $\beta = 0.257^{***}$ ($p < 0.001$); therefore, H1 is accepted. Additionally, it was verified that managerial ambidexterity significantly moderates this relationship, with a coefficient of $\beta = 0.081^{***}$ ($p < 0.001$); therefore, H2 is accepted. These results not only confirm the proposed hypotheses but also emphasize the importance of integrating intangible assets, such as intellectual capital, with dynamic managerial capabilities, such as ambidexterity, to maximize organizational performance. This approach provides a deeper insight into the dynamics between the analyzed constructs, offering a robust empirical foundation that contributes to the advancement of knowledge in the field of intellectual capital and financial performance. These findings, presented in Table 3, support both hypotheses proposed in the study, highlighting the relevance of intellectual capital and managerial ambidexterity as key factors for improving financial performance in small manufacturing enterprises.

4. DISCUSSION

The findings of this study confirm that intellectual capital has a positive and significant relationship with financial performance in small Peruvian manufacturing enterprises. This result reinforces the strategic relevance of intellectual capital as a critical intangible asset, consistent with the RBV proposed by Barney (1991), which emphasizes the role of valuable, rare, and inimitable resources in achieving sustainable competitive advantage. This outcome is aligned with prior empirical research that has documented the positive influence of intellectual capital on firm performance in both developed and emerging markets (Asiaei & Jusoh, 2017; Wang et al., 2014).

In terms of intellectual capital components, human capital emerged as the most influential factor. Represented by employees' and managers' knowledge, skills, and commitment, it plays a key role in driving innovation and operational efficiency. This is consistent with the findings of Ting et al. (2020), who identified human capital as a principal driver of value creation, particularly in knowledge-intensive and SME contexts. Our results contribute to this literature by confirming that human capital significantly enhances financial performance in small manufacturing firms in Latin America, where talent development is often constrained by resource limitations. Similarly, the role of structural capital, including internal processes, systems, and intellectual property, was also validated. The present findings echo Wang and Hu (2018), who emphasized the contribution of structural capital to process standardization and long-term revenue generation. In our context, structural capital appears essential for ensuring operational stability, especially under resource-scarce conditions. In

Table 3. Hypotheses testing

Hypotheses	Relationship	B	*p*-value	Decision
H1	IC-FP	0.257***	***	Accepted
H2	IC-MA-FP	0.081***	***	Accepted

Note: Goodness of fit indices: $\chi 2$ (df) = 2195.845 (692), $\chi 2/df = 3.173$, NFI = 0.949, GFI = 0.964, TLI = 0.960, CFI = 0.964, RMSEA = 0.066, ***$p < 0.01$. Intellectual Capital (IC), Financial Performance (FP), Managerial Ambidexterity (MA).

line with Paoloni et al. (2020), this study confirms that relational capital positively affects financial performance by strengthening stakeholder trust and enhancing market access. While most previous studies on relational capital have focused on large firms or developed countries, our findings extend this evidence to small businesses in emerging economies, where relationship building is often a survival mechanism.

Crucially, the study also reveals that managerial ambidexterity exerts a positive and significant moderating effect on the intellectual capital–financial performance relationship. This moderating role indicates that the ability of managers to balance exploration (new product development) with exploitation (process efficiency) amplifies the benefits of intellectual capital on performance. These findings align with Shamout (2023) and Zhang et al. (2022), who demonstrated that ambidextrous leadership enhances organizational adaptability and value capture from intangible assets. Our results not only confirm these prior studies but also provide new empirical evidence from a Latin American SME context. Furthermore, this study answers the research call from Bansal et al. (2023) and Baima et al. (2021) to empirically examine the moderating role of managerial ambidexterity in the relationship between strategic resources and financial outcomes. In particular, our evidence supports the notion that ambidextrous managers enhance firm resilience and strategic agility, as also suggested by Ho et al. (2020) and Osiyevskyy et al. (2020). In line with March (1991), our findings underscore the necessity of balancing short-term efficiency with long-term innovation, especially in volatile business environments. Additionally, the interplay among intellectual capital dimensions reveals synergistic effects when human capital, relational capital, and structural capital are strategically integrated, confirming the arguments of Abhayawansa et al. (2018). These synergies are maximized when guided by ambidextrous leadership, suggesting that managerial ambidexterity not only moderates but also facilitates the internal alignment of intangible resources. These findings provide managerial guidance for SME leaders seeking to enhance performance through knowledge-driven ambidexterity.

Overall, this study makes several contributions. First, it validates the proposed theoretical model in the context of small manufacturing firms in an emerging economy. Second, it provides empirical evidence of how managerial ambidexterity strengthens the intellectual capital–financial performance relationship, addressing an important gap in the literature. Finally, by comparing our findings with those of previous studies, we extend the applicability of existing theories to a new geographic and organizational context. These insights underscore the need for integrated management strategies that leverage intellectual capital while promoting ambidextrous capabilities to ensure long-term competitiveness and sustainability.

CONCLUSION

This study explores the moderating role of managerial ambidexterity in the relationship between intellectual capital and financial performance. The findings demonstrate that intellectual capital, with its dimensions (human capital, structural capital, and relational capital), exerts a positive and significant impact on financial performance. Furthermore, managerial ambidexterity enhances this relationship by enabling managers to integrate both exploitation and exploration strategies, which proves essential for navigating the complexity and volatility typical of emerging economies.

From these results, intellectual capital should not be regarded as a static resource, but as a dynamic asset whose value depends on the managerial ability to strategically mobilize it. Managerial ambidexterity, in this context, functions not merely as a complementary competence but as a strategic enabler that amplifies the effectiveness of intellectual capital. These insights reinforce the theoretical premises of RBV and contribute to a deeper understanding of how intangible assets and dynamic capabilities interact to drive firm performance in resource-constrained environments. On a practical level, the study highlights the importance for small business leaders to invest in talent development, strengthen internal systems, and

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build trust-based relationships with key stakeholders, while simultaneously cultivating ambidextrous leadership practices that ensure organizational adaptability.

Future research should validate these findings across broader geographic and sectoral contexts, adopt longitudinal approaches to assess causality, and incorporate objective financial performance indicators. Moreover, refining measurement instruments to better reflect the realities of SMEs in emerging markets will enhance the applicability and robustness of future empirical studies.

AUTHOR CONTRIBUTIONS

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