

THE IMPACT OF MANAGERIAL INNOVATION AND DIGITAL TECHNOLOGY ON THE FINANCIAL PERFORMANCE OF SMES: EVIDENCE FROM AN EMPIRICAL STUDY

SARA SAIL¹, HANANE AAMOUM², IKRAM EL HACHIMI³, YASSIN SELOUANI⁴, NAJOUA EL ABBAS EL GHALEB⁵, IMAD AIT LHASSAN⁶

¹PhD, National School of Business and Management of Casablanca, Hassan II University, Morocco

²Full Professor, National School of Business and Management of Casablanca, Hassan II University, Morocco

³PhD, National School of Business and Management of Tangier, Abdelmalek Essaadi University, Morocco

⁴PhD, National School of Business and Management of Tangier, Abdelmalek Essaadi University, Morocco

⁵PhD, Faculty of Legal, Economic and Social Sciences of Tangier, Abdelmalek Essaadi University, Morocco.

⁶Assistant Professor, National School of Applied Sciences of Tetouan, Laboratory of Organizational and Territorial Governance (LARGOT) - ENCG Tangier, Abdelmalek Essaadi University, Morocco

E-mail: sarasail788@gmail.com, hanane.aamoum@gmail.com, ikramelhachimi06@gmail.com, yassin.selouani@etu.uae.ac.ma, elabbasnajoua@uae.ac.ma, iaithlhasan@uae.ac.ma

ABSTRACT

Although the resource-based view predicts that managerial innovation should enhance firm performance, empirical evidence remains contradictory and is drawn overwhelmingly from large firms in developed economies, leaving the financial payoff of managerial innovation for small and medium-sized enterprises (SMEs) in emerging markets such as Morocco poorly understood. The primary objective of this research is to investigate the impact of managerial innovation and digital technology on the financial performance of SMEs from 2020 to 2023, aiming to construct a model that elucidates the influence of managerial innovation dimensions, with particular attention to the technological dimension, on financial performance. The research framework developed in this study was tested on 260 Moroccan SMEs operating across various sectors between 2020 and 2023. Adopting a positivist epistemological stance, the study employed a hypothetico-deductive reasoning approach and a quantitative research design. The empirical validation of the proposed model provided evidence of a partially significant relationship between managerial innovation dimensions and firm financial performance. The results revealed that strategic planning, employee development and motivation, inter-organizational relations and partnerships, and information and communication technologies have a statistically significant impact on financial performance. In contrast, the structural dimension of managerial innovation did not exhibit a statistically significant relationship with financial performance. This finding suggests that structural changes may not necessarily translate into immediate financial benefits for SMEs, particularly in contexts characterized by economic uncertainty and resource constraints. This study enables SME managers to identify the organizational changes required to foster managerial innovation and improve performance. It also contributes to the existing literature by providing empirical evidence on managerial innovation within the context of Moroccan SMEs. By identifying which dimensions of managerial innovation reliably translate into financial gains and which do not, the study offers SME managers and policymakers an evidence-based basis for prioritizing investment under conditions of resource scarcity.

Keywords: *Managerial innovation, Financial performance, SMEs, Strategic Dimension, Structural Dimension, Employee Motivation and Development Dimension, Inter-organizational Relations and Partnerships Dimension, Information and Communication Technologies Dimension.*

1. INTRODUCTION

The Moroccan economy, inherently competitive and intricate, has weathered significant uncertainty, facing a dual economic and social upheaval. In response to these challenges and to underscore resilience, enterprises are actively seeking avenues to revitalize their operations. According to Lavastre et al. [1], "the primary source of wealth creation for companies lies in their capacity to innovate." Innovation serves as a crucial catalyst for economic progress, driving societal advancement and fortifying business competitiveness. For decades, prevailing economic policies and academic attention primarily focused on technological advancements, including the diffusion of digital tools, to foster innovation. It wasn't until the 1990s that alternative, non-technological forms of innovation, such as managerial innovation (MI), gained traction as a complementary and, in some contexts, more decisive driver of firm performance.

Existing literature on managerial innovation primarily revolves around its conceptualization, adoption or generation process, and evaluating its impact on performance and its interplay with other forms of innovation. In recent years, there has been a surge in research examining the influence of innovation on firm performance, particularly emphasizing the role of managerial innovation in shaping the financial trajectory of enterprises. Notably, empirical investigations into this correlation are limited, especially among large private corporations, overlooking the unique management attributes of certain organizational types.

Recognizing the pivotal role of managerial innovation in enhancing company performance and gaining competitive advantages, our study aims to explore the correlation between managerial innovation and the financial performance of Moroccan SMEs during times of crisis. This investigation forms part of a broader framework aimed at assessing the impact of managerial innovation on the financial performance of small and medium-sized enterprises from 2020 to 2023. Managerial innovation emerges as a significant driver for bolstering the financial performance of SMEs. By examining the nexus between managerial innovation and financial performance, we aim to understand how SMEs can leverage innovative

management strategies to achieve superior financial outcomes.

The objective of this study is to investigate the correlation between managerial innovation and financial performance across various dimensions: strategic management, organizational structure, employee development and motivation, inter-organizational relations and partnerships, and information and communication technologies. Despite recent research on the relationship between managerial innovation and financial performance, few studies have explored managerial innovation within the SME context. Unlike in Western contexts, where managerial innovation has garnered significant attention, its importance in Africa, particularly in Morocco, remains ambiguous.

However, managerial innovation presents growth opportunities for SMEs, which comprise 93% of the Moroccan economy. Understanding the intricate relationship between managerial innovation and the financial performance of SMEs remains a complex research subject requiring thorough analysis. Therefore, this paper aims to bridge this gap by constructing a model that elucidates the impact of managerial innovation dimensions on the financial performance of SMEs in Morocco. While contemporary research predominantly focuses on technological innovation, the significance of managerial innovation appears amplified in emerging economies due to the diverse array of management practices and processes that foster performance enhancement.

Hence, there is a pressing need to advance scholarly understanding in this research domain, particularly within the SME context, where managerial innovation remains underexplored. Furthermore, existing literature underscores that efforts to cultivate managerial innovation, comprehend its nuances, and devise metrics for its assessment are still in their early stages in developing nations. Specifically, our aim is to provide fresh insights into managerial innovation within Moroccan SMEs from 2020 to 2023, thereby enriching the current body of literature on this subject.

1.1. Contribution, Research Approach and Scope of the Study

The practical urgency of this question extends beyond academic interest. SMEs account for approximately 93% of the Moroccan economy

and were disproportionately exposed to the compounded shocks of the COVID-19 pandemic, subsequent inflationary pressures, and persistent resource constraints between 2020 and 2023. Under such conditions, managers face genuine trade-offs in allocating scarce resources across competing forms of managerial innovation, yet the existing evidence offers little guidance as to which dimensions of managerial innovation are most likely to translate into measurable financial gains for a resource-constrained SME, as opposed to a large, well-capitalized firm. This is why the question addressed here remains both theoretically unresolved and practically pressing: without dimension-specific evidence, SME managers and the public institutions that support them risk investing in organizational changes whose financial payoff is, at best, uncertain.

To address this question, the study adopts a quantitative, hypothetico-deductive research design grounded in a positivist epistemology. A structural model linking five dimensions of managerial innovation to financial performance was specified from the literature, operationalized through validated multi-item scales, and tested using covariance-based structural equation modeling on survey data collected from 260 Moroccan SMEs operating across services, industry, commerce and construction between 2020 and 2023. This design choice, detailed and justified with reference to comparable studies in Section 4.1, allows the relative contribution of each dimension to be estimated simultaneously rather than inferred from single-variable analyses.

This study makes three specific contributions. Methodologically, it tests a five-dimension model of managerial innovation, inclusive of a distinct information and communication technology dimension, on a comparatively large SME sample using structural equation modeling, a combination rarely applied jointly in the SME literature. Theoretically, it extends the resource-based view to the level of individual managerial-innovation dimensions, showing that not all dimensions function as equally valuable, rare, or difficult-to-imitate resources within a single emerging-market SME population. Managerially, it provides SME managers and policymakers with a dimension-specific ranking of financial payoffs, directly informing where scarce managerial attention and investment are most likely to be rewarded.

Consistent with this focus, the scope of the study should be stated explicitly. The study covers the relationship between five managerial-innovation dimensions – strategic, structural, employee motivation and development, inter-organizational relations and partnerships, and information and communication technologies – and the perceived financial performance of Moroccan SMEs, measured through a single cross-sectional wave of survey data collected between 2020 and 2023. It does not cover non-financial performance outcomes (for instance, employee well-being or environmental performance), the mechanisms or micro-processes through which managerial innovation is adopted, sectors or firm sizes outside the sampled Moroccan SME population, or the temporal dynamics of the innovation-performance relationship, since a single cross-sectional design cannot establish the direction of causality with certainty. These boundaries are revisited critically in Sections 6 and 7.

2. THE MANAGERIAL INNOVATION AND FINANCIAL PERFORMANCE: THEORETICAL FRAMEWORK

Below, we outline and elucidate the theoretical aspects of the two concepts. It's important to note that there exists no unanimous consensus regarding the distinction between these concepts, as they are challenging to define within a single interpretation [2].

2.1. Managerial Innovation

The term "managerial innovation" was introduced by Kimberly in 1981 [3]. He defines managerial innovation as "any program, product, or technique that represents a significant departure from prevailing management practices at the time of its emergence, and impacts the nature, relationship, quality, or quantity of information available in the decision-making process" [4]. According to Birkinshaw et al. [5], managerial innovation constitutes a distinct form of organizational change, involving the introduction of novel elements into the organization. It fosters the adoption of fresh management practices, historically focused primarily on products and technologies, thereby serving as a catalyst for performance enhancement [6].

Managers innovate to create new approaches for managerial work, implement new strategies

and organizational structures, and develop new processes that alter an organization's management procedures and systems. Consequently, managerial innovation contributes positively to enhancing an organization's management, performance, and the efficiency of its processes [7].

Managerial innovations, like other types of innovation, can be categorized based on their degree of novelty. Mol and Birkinshaw [8] and Mattelin-Pierrard [9] distinguish between incremental managerial innovations, which refine existing practices, and radical managerial innovations, which involve the implementation of entirely new practices.

According to resource theory, companies should focus on resources that are valuable, rare, difficult to imitate, and substitute, while disregarding resources that do not meet these criteria. In our study, we view managerial innovation as a strategic resource that enables a company's success.

2.2. Dimensions of Managerial Innovation

Birkinshaw et al. [5] identify four elements: management practices, management processes, organizational structures, and techniques, reflecting various aspects of principles, rules, and routines within an organization. The literature suggests several dimensions such as the introduction of new management practices, information technology and digital tools [10]; management processes, organizational structure [11]; setting objectives, motivating employees, coordination of activities, decision-making [12]. Based on these dimensions, we assume that managerial innovation comprises the following dimensions [13]: Firstly, the Strategic Dimension encompasses new developments and strategic competition, including innovation, particularly technological advancements such as new products/services and business models. This dimension also includes a structural aspect, introducing new structural forms within an organization to offer flexibility and adaptability to operating conditions. Secondly, Employee Motivation and Development identify new methods, practices, and programs to enhance employee motivation, develop their skills and competencies, and foster innovative activity. Thirdly, Inter-organizational Relations and Partnerships involve developing and utilizing new forms of cooperation with various entities related

to the organization, such as suppliers, customers/consumers, competitors, and scientific institutions. This may include creating open innovation models. Lastly, Information and Communication Technologies (ICT) define the scope and depth of changes implemented in acquiring, collecting, processing, and transferring information and knowledge, and constitute the digital-technology dimension of managerial innovation examined in this study. It also involves adopting new tools for intra- and inter-organizational communication, cloud-based collaboration, and data-driven decision-making. These dimensions collectively contribute to the overall impact of managerial innovation on the financial performance of SMEs.

2.3. Financial Performance

Financial performance serves as a vital barometer of a company's health and success, encompassing a multifaceted evaluation of its fiscal prowess and strategic acumen. Beyond profitability and growth, financial performance delves into the intricacies of resource allocation, operational efficiency, and value creation. Authors such as Grant et al. [14] emphasize the importance of adopting financial indicators like return on assets (ROA), turnover, net profit after tax, return on investment (ROI), and results for comprehensive performance assessment. Additionally, scholars such as Zahra [15] underscore the significance of ROA in measuring the effectiveness of asset utilization in generating profit, offering insights into a company's operational efficiency and asset management strategies.

Moreover, beyond traditional financial metrics, stakeholders increasingly value qualitative aspects such as stakeholder satisfaction and competitive positioning. Garrigos-Simon and Marques [16] and Bagorogoza and Waal [17] advocate for incorporating these measures into performance evaluations, recognizing their impact on long-term sustainability and market viability.

In essence, a holistic approach to financial performance evaluation involves a nuanced analysis of both quantitative and qualitative indicators, providing a comprehensive understanding of a company's financial health and strategic positioning in the marketplace.

For Lawrence and Lorsch [18], organizational performance refers to its ability to

meet environmental demands, including stakeholders establishing market relations with the organization (suppliers, customers, and the broader community). Financial performance entails achieving good profitability, satisfactory growth, and creating shareholder value [19]. It considers a company's value creation through managing its available financial resources. Financial performance can be measured through various indicators such as return on equity (ROE), return on assets (ROA), return on sales (ROS), profitability, productivity, growth, stakeholder satisfaction, and competitive position [20]. Many companies are adopting financial indicators like return on assets (ROA), turnover, net profit after tax, return on investment (ROI), and results to assess performance [21].

2.4. Theoretical Tensions and the General Hypothesis

Despite the conceptual clarity achieved above, managerial innovation remains a genuinely unresolved empirical problem rather than a settled one. The resource-based view predicts that managerial innovation, once it is valuable, rare, difficult to imitate, and difficult to substitute, should translate into superior financial performance [74]. Yet the empirical record is far from unanimous. Several studies report a clear positive relationship between managerial innovation and firm performance [13,70], while others find that managerial innovation exerts no decisive influence on financial outcomes, or only a limited and indirect one [72,73]. This contradiction cannot be resolved by treating managerial innovation as a single, undifferentiated construct: because it aggregates dimensions as heterogeneous as strategic planning, organizational restructuring, human-resource practices, inter-organizational relations, and digital technology, a positive aggregate effect reported in one context may mask a strongly divergent pattern at the level of individual dimensions in another. This dimension-level heterogeneity, rather than the existence of a relationship as such, constitutes the real and still-open problem that this study addresses.

The problem is compounded by a contextual gap. The empirical record summarized above and developed further in Section 3 is drawn overwhelmingly from large firms in Western or East Asian economies; systematic dimension-level evidence from SMEs in emerging African markets, and from Morocco specifically, remains

scarce. Because SMEs face resource constraints, governance structures, and institutional environments that differ substantially from those of large corporations, findings established at the level of large Western firms cannot simply be assumed to generalize to Moroccan SMEs. It is this combination of theoretical contradiction and contextual gap that motivates the general hypothesis tested in this study.

General Hypothesis. Managerial innovation, deployed jointly across its strategic, structural, human, relational and technological dimensions, exerts a significant positive effect on the financial performance of Moroccan SMEs, although the magnitude of this effect is expected to vary across dimensions rather than be uniform.

This general hypothesis is decomposed into the five dimension-specific hypotheses developed in Section 3 below (Hypotheses 1 to 5), each grounded in a distinct stream of the literature and each tested independently in Section 5.2, so that the study can determine not only whether managerial innovation matters, but specifically which of its dimensions do.

3. THE IMPACT OF MANAGERIAL INNOVATION ON FINANCIAL PERFORMANCE: PREVIOUS EMPIRICAL STUDIES

There exists a substantial body of research supporting the significant positive correlation between managerial innovation and SME financial performance [22,23]. Additionally, published studies have indicated the favorable influence of innovation capabilities on SME performance [24,25,26].

In our research endeavor, we drew upon the dimensions of managerial innovation proposed by Krasnicka et al. [13]. The author compiled a wealth of research on the dimensions of managerial innovation and scrutinized them to identify the most crucial aspects. Subsequently, we formulated a series of hypotheses to probe the connections between the various dimensions of managerial innovation and financial performance.

3.1. Strategic Dimension and Financial Performance

The literature suggests that a formalized approach to innovation, embodied in a strategy, heightens the likelihood of an effective innovation system [27], the level of innovation

[28,29], and the success of innovations [30]. These outcomes derive from establishing direction, focusing effort, ensuring coherence, and reducing ambiguity, among other factors. Oke [31] proposed that the initial step in developing an innovation strategy is to define the concept of innovation for the company or innovation domain. By grasping the drivers of innovation demand, firms can delineate their priority areas for innovation to attain financial performance. Kuczmarski et al. [32] contend that the most successful companies exhibit a more tangible and visible management commitment to new product development, particularly in terms of adequate capital and resources, compared to less successful firms. Moreover, a study by Mercer Management Consulting [33] revealed that the management of the most successful companies was actively engaged in new product development and clearly communicated the company's new product development strategy. Cooper et al. [34] asserted a clear correlation between having a new product strategy and positive financial performance. Fruhling and Siau [35] conducted a qualitative inquiry and found that firms with the most robust innovation strategy demonstrated the best performance. More recently, Vuong et al. [36] demonstrated that strategic management practices significantly improve SMEs' financial performance by enhancing organizational creativity, strategic alignment, and the efficient allocation of organizational resources. Their findings emphasize that formal strategic planning enables SMEs to respond more effectively to changing market conditions and strengthens long-term organizational performance. Likewise, Wang et al. [37] found that strategy design exerts a significant positive effect on the financial performance of SMEs, highlighting that well-formulated strategic planning supports better resource allocation and organizational competitiveness, although the implementation stage may not always generate immediate financial benefits. These recent findings reinforce the view that the strategic dimension of managerial innovation represents a critical driver of SME financial performance.

Hypothesis 1. The strategic innovation has beneficial effects on the financial performance.

3.2. Structural Dimension and Financial Performance

Structural innovation denotes a novel organizational structure designed to alter the way

the company coordinates, communicates, and interacts, as well as the allocation of responsibilities and obligations. This fresh organizational structure must be dynamically aligned with strategy, culture, processes, and technology [38]. From the standpoint of transaction cost theory, structural innovation diminishes firm concentration, increases the likelihood of collective decision-making, and can mitigate the impact of managers' "bounded rationality" and "opportunism," thereby reducing firms' transaction costs to enhance their financial performance. Li et al. [39] investigated the influence of the structural dimension of innovation on financial performance in a sample of 382 Indian industrial firms (high-end equipment manufacturers). Their findings suggest a positive relationship between the structural dimension of innovation and financial performance. More recently, Almansoori et al. [40] found that organizational innovation significantly improves SME performance by enhancing organizational adaptability, innovation capability, and employee engagement. Their findings suggest that structural changes promoting organizational flexibility contribute positively to firm performance. Similarly, Valdez-Juárez et al. [41] demonstrated that non-technological innovation, including organizational innovation associated with digital transformation, significantly enhances business competitiveness and organizational performance by strengthening firms' dynamic capabilities and organizational adaptability. These recent findings reinforce the argument that structural innovation represents an important managerial mechanism for improving SME performance.

Hypothesis 2. The structural dimension has favorable effects on the financial performance.

3.3. Employee Motivation and Development Dimension and Financial Performance

Employees prioritize fair remuneration because money holds significant motivational value [42]. Financial incentives can bolster and inspire individuals to achieve better performance, especially employees in production companies, as they can utilize money to fulfill their needs. Consequently, remuneration significantly impacts employees' attendance and commitment and constitutes a pivotal factor in their motivation. The dimension of employee motivation and development, a cornerstone of human resources management, primarily addresses people and

organizational environment issues: the fundamental driver of managerial innovation lies in creating an environment that motivates employees to contribute to innovation. Kalimullah et al. [43] propose that motivated employees align their goals with the company's objectives and actively pursue them. Moreover, these companies outperform others because their employees continuously seek ways to enhance their performance. Empowering employees to maximize their potential at work, particularly under stressful conditions, is a significant challenge, yet it can be accomplished through motivation. The relationship between employee motivation and financial performance should be such that when a company's employees are motivated, the company achieves profitability and excels both financially and non-financially. Training and fostering creativity and innovation are expected to enhance the company's financial performance [44,45]. Recent evidence further supports this relationship. Dao et al. [46] demonstrated that digital workforce training significantly enhances employee motivation, job satisfaction, and employee performance in SMEs, emphasizing that continuous employee development strengthens organizational competitiveness and long-term performance. Similarly, Almansoori et al. [40] found that employee engagement positively and significantly contributes to SME performance alongside innovation capability and organizational innovation, highlighting the strategic role of employee motivation and development in improving organizational outcomes.

Hypothesis 3. The employee motivation and the development dimension has favorable effects on the financial performance.

3.4. Inter-organizational Relations and Partnerships Dimension and Financial Performance

According to the research conducted by Lin and Huang [47], collaborative partnerships play a vital role in enhancing the financial performance of companies. Strong alliances between partners yield positive outcomes in terms of cooperative performance [48]. Nybakk and Jenssen [49] explored the impact of inter-organizational relationships and partnerships on financial performance, analyzing a sample of 100 Hungarian companies operating in the information and communication technology sector. Their study revealed a positive correlation

between inter-organizational relationships and financial performance, as measured by ROE and ROCE. Furthermore, the empirical study by Yeh et al. [50] underscored that partnerships exert a significant positive influence on financial performance, confirming that a long-term focus in partnership relationships enhances firm performance [51]. This study supports the notion that fostering inter-organizational trust stimulates firm performance, particularly profitability. Profitability stands as a crucial indicator of firm performance, reflecting the firm's effectiveness in reducing production costs while increasing sales [52]. It also mirrors the extent to which a company efficiently manages and utilizes its resources.

Hypothesis 4. The inter-organizational relations and the partnerships dimension have a positive impact on the financial performance.

3.5. Information and Communication Technologies Dimension and Financial Performance

Mustafa and Al-Qudah [53] conducted a study examining the relationship between information technology and the financial performance of 100 Jordanian industrial firms listed on the Amman financial market. The results indicated a positive correlation between the financial performance of Jordanian industrial firms and information technology adoption. Given the highly competitive nature of the Jordanian industrial market, companies should prioritize implementing cutting-edge technologies to maintain their competitive edge. They should also focus on enhancing technology to capitalize on these advancements, thereby streamlining processes related to information technology knowledge, software programs, performance measurement, and human resources. Similarly, Akinboade [54] explored the utilization and dimensions of ICT and its impact on the financial performance of 31 industrial firms in Nigeria. The study found that the sampled public companies had integrated the ICT dimension across various sectors, albeit to varying degrees. Investment in ICT demonstrated a positive correlation with financial performance. Empirical evidence suggests that leveraging ICT yields significant improvements in turnover, pre-tax profit, post-tax profit, and net assets/equity. Recent evidence further supports the strategic role of digital

technology in enhancing organizational performance. Hermawan et al. [55] demonstrated that IT use significantly improves financial performance through knowledge transfer and absorptive capacity. Their findings indicate that digital technologies not only facilitate information processing but also strengthen organizational learning mechanisms, ultimately contributing to superior financial outcomes. These findings reinforce the argument that ICT represents a critical dimension of managerial innovation capable of improving SME financial performance.

Hypothesis 5. The information and the communication technologies have a positive influence on the financial performance.

Based on the empirical research presented earlier, we can derive a research model (Figure 1) as outlined below:

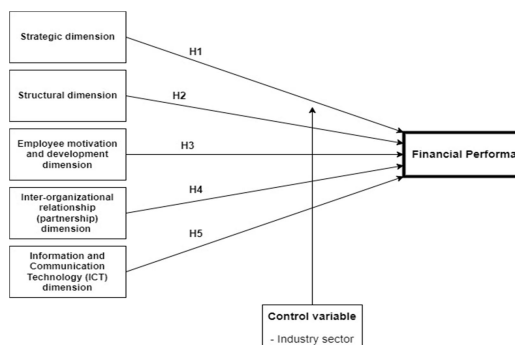


Figure 1. Research framework

4. METHODOLOGY

4.1. Research Design

This study adopts a quantitative research design consistent with a positivist epistemological stance and a hypothetico-deductive reasoning approach: theoretical propositions were derived from the literature reviewed in Sections 2 and 3, formalized as the five testable hypotheses presented above, and subsequently confronted with empirical data collected through a structured questionnaire administered to a cross-sectional sample of Moroccan SME managers. This design was selected because the study's objective – estimating the relative strength of several competing explanatory paths simultaneously – requires a confirmatory, variance-based method capable of testing a multi-dimensional structural model, rather than an exploratory or purely descriptive approach.

This choice follows a well-established precedent in the managerial-innovation and SME-performance literature, across regions, industries and disciplines. Krasnicka et al. [13], whose dimensional taxonomy this study adopts, tested a comparable structural model among Polish manufacturing firms. Li et al. [39] applied a comparable quantitative design to 382 Indian industrial equipment manufacturers, while Nybakk and Jenssen [49] used a structured survey and regression analysis on 100 Hungarian information and communication technology firms. More recently, Almansoori et al. [40] employed structural equation modeling to evaluate innovation dynamics among SMEs in the United Arab Emirates, and Wang et al. [37] applied a comparable quantitative, survey-based design to SMEs in Abidjan, Ivory Coast. Across these markedly different regional, sectoral and disciplinary settings, the quantitative, hypothesis-testing survey design has consistently been judged the appropriate instrument for isolating the differential contribution of specific managerial or innovation-related dimensions to firm performance, which is precisely the objective pursued here.

The confirmatory factor-analytic and structural equation modeling techniques applied in Section 5 are themselves discipline-spanning tools, validated in psychological measurement research by Byrne, Shavelson and Muthén [64] as much as in the business-research applications of Hair et al. [65,67] cited below, which further supports their suitability for testing a multi-dimensional model of this kind.

4.2. Data Collection and Sample Characteristics

In our investigation, a total of 382 questionnaires were dispatched, with 265 fully completed ones returned, indicating an initial response rate of 69.37%. From these responses, we identified 5 questionnaires with missing data, reducing the actual response rate to 68.06%. Consequently, data from 260 Moroccan SMEs were analyzed. Concerning the legal status of the SMEs in our sample, 67% were classified as Limited Liability Companies (LLCs), while 32% were Public Limited Companies (PLCs). Moreover, 34% of the companies surveyed had been in operation for over 21 years, with 25% spanning between 6 and 10 years, 16% less than 5 years, and the remaining 25% between 11 and 20 years. In terms of workforce size, 67% of the

surveyed SMEs reported having between 10 and 200 employees. On the other hand, 21% had workforces ranging from 5 to 10 employees, while 12% had 1 to 5 employees. Turnover-wise, 46% of the SMEs reported turnovers ranging from ten million to one hundred seventy-five million dirhams, with 35% reporting turnovers between three and ten million dirhams, and 18% reporting turnovers of less than three million dirhams. Regarding sectoral distribution, service companies accounted for 50% of the sample, followed by industrial companies at 29%, commercial companies at 17%, and construction activities at 5%. Geographically, 36% of the sample companies were located in the Casablanca-Settat region, 21% in the Tangier-Tétouan-Al Hoceima region, and 13% in the Souss-Massa region. As for the demographic profile of the executives, 62% were aged between 30 and 50 years, with 21% being under 30 and 17% over 50. Most held a Master's degree (78%) or a doctorate (12%), while others had bachelor's degrees or diplomas such as DEUG/DUT/BTS, which are Moroccan academic diplomas. In terms of experience, 54% of the executives had over 10 years, 28% between 5 and 10 years, and 18% less than 5 years. The executives held various positions such as department heads (finance, purchasing, HR) and managers.

4.3. Measurement Instruments

To evaluate the dimensions of managerial innovation and financial performance, we utilized a Likert scale ranging from 1 to 5, where 1 represented "Strongly Disagree" and 5 represented "Strongly Agree." This scale was employed across the various dimensions, with specific items sourced from reputable literature [13,56]. The strategic dimension comprised 9 items, while the structural dimension included 6 items. Employee motivation and development were gauged with 4 items, while the inter-organizational relationship dimension employed 6 items, and the Information and Communication Technology (ICT) dimension utilized 4 items. Financial performance was assessed with 7 items [57,58,59,60]. The use of subjective measures of financial performance is consistent with prior SME research, where objective financial data are often difficult to obtain due to confidentiality concerns and the limited disclosure practices of privately held firms. Previous studies have reported a strong correspondence between subjective assessments and objective indicators of organizational performance, supporting the

validity of perceptual measures when accounting data are unavailable [61,62]. Therefore, managers' perceptions were considered an appropriate proxy for assessing SME financial performance in the present study. Additionally, we included the control variable of Industry sector in our analysis, following the framework provided by Kim, Cable, and Kim [63].

5. RESULTS

5.1. Validity and Reliability

The initial step involves evaluating our measurement model, where the convergence and reliability validity of all items need to be scrutinized through indicators such as Loadings, CR, AVE, CMIN/df, GFI, AGFI, CFI, RMSEA, and NFI. In assessing the reliability and validity of the measurement model, we conducted tests on factors loadings, composite reliability (CR), and extracted variance (AVE). We began by examining the factors loadings, where Byrne, Shavelson and Muthén [64] recommended that all items with a loading higher than .40 can be accepted. According to Table 1, all items exceeded .40, indicating that we have adhered to the recommended norm. Regarding the composite reliability (CR) and extracted variance (AVE) were employed, following the recommendations of Hair et al. [65]. The AVE values for the latent variables presented in Table 1 are 0.70, 0.69, 0.79, 0.73, 0.82, and 0.84, respectively. According to Cheung and Wang [66], if AVE scores are equal to or greater than 0.5, the latent variable demonstrates convergent validity. Therefore, these AVE scores signify substantial convergent validity. Furthermore, as per Hair et al. [67], a CR value exceeding the threshold of 0.7 indicates the reliability of the scales. The findings in Table 1 highlight the robust reliability and consistency of the scales.

Table 1. Reliability and Convergent Validity Test

Variable	Item	Loading	CR	AVE
Strategic dimension	DIM STRAT1	.67	.79	.70
	DIM STRAT2	.73		
	DIM STRAT3	.64		
	DIM STRAT4	.54		
	DIM STRAT5	.60		
	DIM STRAT6	.75		
	DIM STRAT7	.77		
	DIM STRAT8	.68		
	DIM STRAT9	.71		
Structural dimension	DIM STRUC1	.64	.77	.69
	DIM STRUC2	.63		
	DIM STRUC3	.62		
	DIM STRUC4	.58		
	DIM STRUC5	.81		
	DIM STRUC6	.73		
Employee motivation and	DIM MOTI EMP1	.60	.85	.79
	DIM MOTI EMP2	.83		

development dimension	DIM MOTI EMP3	.72		
	DIM MOTI EMP4	.71		
Inter-organizational relationship dimension (partnership)	DIM REL INTEG1	.60	.81	.73
	DIM REL INTEG2	.50		
	DIM REL INTEG3	.87		
	DIM REL INTEG4	.89		
Information and Communication Technology (ICT) dimension	DIM TIC1	.48	.89	.82
	DIM TIC2	.63		
	DIM TIC3	.79		
	DIM TIC4	.82		
	DIM TIC5	.82		
Financial performance	PERF FINAN1	.81	.90	.84
	PERF FINAN2	.68		
	PERF FINAN3	.78		
	PERF FINAN4	.91		
	PERF FINAN5	.84		
	PERF FINAN6	.88		
	PERF FINAN7	.72		

To evaluate the construct validity of the measurement model, confirmatory factor analysis (CFA) was employed, wherein all latent variables were interconnected. The outcomes of the CFA revealed that the measurement model exhibits satisfactory fit indices (CMIN/df = 2.098, GFI = 0.897, AGFI = 0.591, CFI = 0.943, RMSEA = 0.003, NFI = 0.911).

According to established criteria [68,69], an acceptable fit entails a CMIN/df value below 4, fit indices exceeding 0.85, and an RMSEA below 0.06. The findings of the validity and reliability assessments suggest that the variables within the measurement model demonstrate both validity and reliability.

5.2. Hypotheses Testing

The results presented in Table 2 indicate that four hypotheses were supported while two others were not. First of all, Hypothesis H1 is accepted; the statistical results indicate that the strategic dimension has a significant positive impact ($p = 0.000$, $\beta = 0.663$) on financial performance. This demonstrates that firms' strategic visions influence their financial performance. However, Hypothesis H2 is not supported ($\beta = 0.199$; $p = 0.148$). The findings indicate that structural innovation does not exert a statistically significant influence on financial performance among Moroccan SMEs. This result suggests that organizational restructuring initiatives may not generate immediate financial returns, particularly in contexts characterized by resource constraints and economic uncertainty. The values do not show a direct effect. Conversely, Hypothesis H3 is confirmed, as the employee motivation and development dimension is positively related to financial performance. The p-values ($p = 0.000$) and the beta value (estimation) demonstrate that the relationship between the employee motivation

and development dimension and financial performance is significant and positive ($\beta = 0.781$). The values indicate a strong direct effect. Regarding the control variable, the influence of the industry sector is weak. The results show that the impact of this control variable on the dependent variable is not significant. Nevertheless, Hypothesis H4 is confirmed; the p-values ($p = 0.000$) demonstrate that the relationship between the inter-organizational relationship dimension and financial performance is highly significant and positive. The values indicate a strong direct effect, which was expected. Finally, Hypothesis H5 is accepted, and the tests confirm that the information and communication technology dimension positively and significantly influence financial performance.

Table 2. Hypothesis testing results

Path	Estimate	C.R.	P	Decision
Strategic dimension → Financial performance	.663	7.955	***	Accepted
Structural dimension → Financial performance	.199	1.448	.148	Rejected
Motivation and development dimension → Financial performance	.781	9.269	***	Accepted
Partnership dimension → Financial performance	.843	9.106	***	Accepted
ICT dimension → Financial performance	.906	11.719	***	Accepted
Industry sector → Financial performance	-.437	5.871	.665	Rejected

6. DISCUSSION

Upon meticulous scrutiny of the statistical analysis derived from the current study's findings, it became imperative to contextualize them within a broader framework, aligning with the hypotheses delineated in the existing literature. The overarching objective was to elucidate the impact of managerial innovation on financial performance. The evaluation of the results corroborated a significant relationship between several dimensions of managerial innovation and the financial performance of Moroccan SMEs. These findings suggest that managerial innovation contributes to the development of new organizational capabilities and knowledge that

may enhance firms' competitiveness and financial outcomes.

Employing Structural Equation Modeling (SEM), the analysis revealed that financial performance is partly influenced by managerial innovation, measured through its various dimensions. Notably, the dimensions of Information and Communication Technology (ICT) and partnership and inter-organizational relations exerted a stronger influence on financial performance than the strategic dimension and the employee motivation and development dimension. These findings suggest that SMEs increasingly rely on digital capabilities and external collaborations to strengthen their competitiveness, improve decision-making processes, and access strategic resources. In an increasingly uncertain and dynamic business environment, ICT and partnerships appear to constitute critical organizational assets that facilitate adaptation and resilience.

Furthermore, the analysis revealed that the structural dimension did not significantly influence the financial performance of SMEs. This finding is particularly noteworthy because it challenges the widespread assumption that all forms of managerial innovation necessarily generate positive financial outcomes. One possible explanation lies in the specific context of Moroccan SMEs during the period 2020-2023, characterized by post-pandemic recovery, economic uncertainty, inflationary pressures, and resource constraints. Structural innovation generally requires substantial investments in organizational redesign, administrative restructuring, and internal coordination mechanisms. These changes may generate implementation costs and operational disruptions in the short term, thereby delaying the realization of financial benefits. Consequently, while structural innovation may contribute to organizational effectiveness and flexibility over time, its impact may not be immediately reflected in financial performance indicators. This explanation may account for the absence of a statistically significant relationship observed in the present study.

The non-significant effect of the industry sector control variable also deserves attention. This result suggests that the benefits associated with managerial innovation are not confined to a specific sector of activity. Whether operating in manufacturing, services, trade, or other sectors,

SMEs appear to derive comparable advantages from managerial innovation practices. Therefore, managerial innovation may be viewed as a transversal organizational capability capable of enhancing performance regardless of sectoral affiliation.

In a broader empirical context, studies investigating the impact of managerial innovation on organizational performance have produced heterogeneous results. Lin and Chen [70] identified a positive relationship between managerial innovation and SME performance in Taiwan, arguing that managerial innovation may exert a greater influence on organizational outcomes than technological innovation. Similarly, Krasnicka et al. [13] reported positive associations between managerial innovation dimensions and financial performance among Polish firms. The findings of the present study are largely consistent with these works, particularly regarding the positive contribution of strategic planning, employee development, partnerships, and ICT to financial performance.

Likewise, previous research conducted in various national contexts has highlighted the positive role of managerial innovation in improving organizational performance, including in Poland [13], Morocco [71], and Cameroon [77], where Boubakary et al. similarly found that changes in management practices and organizational structure jointly improved SME performance. The present findings reinforce this perspective and provide additional empirical evidence from the Moroccan SME context, which remains relatively underrepresented in the international literature.

However, the current results also reveal important divergences from certain previous studies. Jaakson et al. [72] argued that managerial innovation does not necessarily exert a decisive influence on financial performance, while Staw and Epstein [73] suggested that managerial innovation may have limited direct effects on organizational outcomes. The absence of a significant relationship between the structural dimension and financial performance in the present study partially supports these conclusions and highlights the possibility that some dimensions of managerial innovation may generate delayed or indirect benefits rather than immediate financial gains.

The empirical insights gleaned from this study underscore the nuanced nature of the relationship between managerial innovation and financial performance. It may be argued that the effectiveness of managerial innovation depends on the maturity level of managerial practices and the ability of SME managers to successfully integrate innovative organizational approaches into their firms. As emphasized by Le Roy et al. [3], managers often prioritize technological innovation while overlooking the strategic importance of managerial innovation. Consequently, the financial benefits associated with managerial innovation may vary according to firms' managerial capabilities and their capacity to leverage organizational resources effectively.

From a theoretical perspective, the findings provide support for the Resource-Based View (RBV) as a relevant framework for understanding the role of managerial innovation in enhancing organizational performance. According to Wernerfelt [74], sustainable competitive advantage stems from the possession and effective deployment of valuable resources and capabilities.

More specifically, the findings suggest that ICT capabilities constitute valuable strategic resources because they improve information processing, support managerial decision-making, enhance communication, and increase operational efficiency. Within the Moroccan SME context, advanced digital capabilities may also exhibit characteristics associated with the VRIN framework, namely being valuable, relatively rare, difficult to imitate, and difficult to substitute. Similarly, inter-organizational relationships and partnerships provide access to external knowledge, complementary resources, and market opportunities that competitors may find difficult to replicate. These characteristics explain why ICT and partnership dimensions emerged as the strongest predictors of financial performance in the present study.

Expanding upon this theoretical foundation, the results demonstrate that managerial innovation should be viewed as a strategic intangible resource capable of strengthening organizational competitiveness and long-term sustainability. SMEs that invest in strategic planning, employee development, digital transformation, and collaborative networks are more likely to develop unique capabilities that

enhance their financial performance and competitive positioning. Consequently, the findings contribute to both theory and practice by emphasizing the importance of managerial innovation as a key driver of SME success in emerging economies such as Morocco.

6.1. Critical Appraisal: Outcomes Relative to Initial Objectives and Current Literature

Returning to the objectives set out in Section 1.1, the study set out to identify which dimensions of managerial innovation translate into measurable financial gains for Moroccan SMEs and to rank them accordingly. This objective was largely achieved: four of the five hypothesized paths were supported, and the analysis identifies information and communication technology and inter-organizational partnerships as the strongest predictors, ahead of strategic planning and employee development, with the structural dimension the sole path found not to be statistically significant. Measured against the general hypothesis formulated in Section 2.4, which anticipated a positive but dimensionally uneven effect, the findings are consistent with expectations; the study did not, however, anticipate the specific ordering of effect sizes observed, in particular the comparatively modest coefficient for the strategic dimension relative to partnerships and ICT, which suggests that the theoretical model would benefit from an explicit account of why some dimensions function as more valuable, rare, and difficult-to-imitate resources than others in the Moroccan SME context, a question the present cross-sectional design cannot fully resolve.

Weighed against current state-of-the-art evidence, the findings occupy a middle position rather than a straightforwardly confirmatory one. They align with recent large-sample evidence from outside the region: Salazar's [76] regression analysis of 11,456 Latin American MSMEs likewise finds that innovation and digital transformation are consistently associated with improved performance, and Boubakary et al.'s [77] survey of 163 Cameroonian SMEs similarly reports that changes in management practices and organizational structure jointly improve performance, a result that sits somewhat uneasily alongside the non-significant structural-dimension path reported here. This divergence is instructive rather than merely inconvenient: it suggests that the financial payoff of structural innovation may

be more context- and time-horizon-dependent than a single-country, single-wave design such as the present one can capture, reinforcing rather than undermining the case for the comparative and longitudinal extensions proposed in Section 7.4. Taken together, the present findings extend this state-of-the-art literature to a national context, Morocco, that remains markedly underrepresented, while also indicating that the aggregate, cross-national picture of a uniformly beneficial managerial innovation conceals dimension-specific and possibly context-specific variation that single-country studies such as this one are best positioned to detect.

7. CONCLUSIONS

Based on a sample of employees from 260 Moroccan SMEs across various sectors, we conducted a quantitative study on the link between five dimensions of managerial innovation (strategic planning, structural innovation, employee development and motivation, inter-organizational relations and partnerships, and information and communication technologies) and financial performance.

The main focus of the study is that financial performance in Moroccan SMEs is influenced to a great extent by strategic planning, employee development and motivation, inter-organizational relations and partnerships, and, most decisively, information and communication technologies, which emerged as the single strongest predictor of financial performance in the model. In contrast, the structural dimension does not have a significant effect on the financial performance of SMEs in Morocco. Furthermore, our results showed that there was no significant impact of the SME's sector of activity on its financial performance.

This study provides evidence that the financial performance of SMEs does not stop at clearly elevated figures, but rather touches on other intangible and immaterial factors, notably managerial innovation, which are already a key driver of improved performance of organization. Finally, this study supports the idea that the financial performance of SMEs is strongly impacted by managerial innovation.

7.1. Methodological Contribution

Our methodological contribution lies in the innovative approach we adopted. While many research studies typically rely on small sample

sizes, we opted for a quantitative methodology with a larger, more representative sample of SMEs, encompassing 260 participants. This decision enhances the robustness and applicability of our findings, providing a more comprehensive understanding of the relationship between managerial innovation and financial performance.

Additionally, we introduced novel measurement scales for key variables, informed by an extensive review of existing literature. For instance, rather than traditional ratio-based assessments, we utilized a Likert scale to evaluate financial performance, offering a more nuanced perspective.

7.2. Theoretical Contribution

Theoretical contributions of our research are significant. By employing a quantitative methodology with a larger sample size, we extend existing knowledge on the relationship between managerial innovation and financial performance. Our findings enrich the theoretical framework by providing empirical evidence that supports the positive impact of managerial innovation on financial outcomes in SMEs.

Furthermore, our introduction of novel measurement scales for key variables enhances the theoretical understanding of these constructs. By departing from conventional measurement methods, such as ratio-based assessments, we offer a fresh perspective that adds depth to the theoretical discourse on managerial innovation and financial performance.

7.3. Managerial Contribution

From a managerial perspective, our research highlights the importance of fostering a culture of managerial innovation within organizations, with digital technology investment standing out as a priority lever given its strong statistical association with financial performance. By recognizing managerial innovation as a critical driver of competitive advantage, managers can proactively enhance organizational performance and sustainability. This involves creating an environment that nurtures creativity, flexibility, and employee engagement, enabling companies to adapt to market changes and meet evolving customer needs effectively.

Overall, our study offers valuable insights for both theory and practice, informing strategic decision-making and guiding managers in

leveraging managerial innovation to drive organizational success.

7.4. Limits and Future Research

This study has a number of limitations that may provide avenues for future research. The first methodological limitation concerns the approach used. Indeed, the use of a quantitative approach based exclusively on the administration of a questionnaire does not allow for a deeper understanding of the phenomenon under investigation compared to a mixed-method approach combining quantitative surveys with qualitative techniques such as semi-structured interviews [75].

Indeed, our target respondents were managers of Moroccan SMEs. However, although considerable efforts were made to target individuals occupying managerial positions and possessing knowledge of organizational activities, we cannot completely verify whether the intended managers personally completed all questionnaires. Consequently, the possibility of informant bias cannot be entirely excluded. This limitation should be considered when interpreting the results.

Another limitation concerns the measurement of financial performance. Consistent with many studies conducted in the SME context, financial performance was assessed using managers' perceptual evaluations rather than objective accounting indicators. While subjective measures are frequently used because objective financial information is often confidential or unavailable in privately held firms, self-reported assessments may be affected by social desirability bias or respondent subjectivity. Future research could strengthen the robustness of the findings by incorporating objective financial indicators such as return on assets (ROA), return on equity (ROE), sales growth, or profit margins.

Another limitation concerns the choice of variables. Despite the importance attached to variable selection, it is possible that additional explanatory and control variables not included in the present model could provide greater precision in estimating the determinants of SME financial performance. Furthermore, the relationships between managerial innovation and financial performance in Moroccan SMEs still require further investigation. In particular, contextual factors such as organizational culture, leadership style, digital maturity, environmental uncertainty,

and institutional conditions may influence the effectiveness of managerial innovation practices. We also believe that cultural specificity plays an important role in understanding SME financial performance.

To conclude, several avenues for future research can be proposed. Future studies could employ alternative approaches to assessing managerial innovation and financial performance in order to determine whether different measurement methods provide greater explanatory power.

A second avenue for future research would consist of replicating this study in different organizational contexts, particularly large firms, and conducting comparative analyses across industries, countries, or regions. Companies' investment in managerial innovation may vary according to organizational size, managerial practices, corporate culture, and institutional environments.

A third avenue for future research involves adopting a mixed-method research design combining exploratory qualitative investigations with quantitative hypothesis-testing approaches. Such a methodology would provide a richer understanding of managerial innovation processes and strengthen the scientific validity of the findings.

Finally, future studies could examine the long-term effects of specific dimensions of managerial innovation, particularly structural innovation, whose impact was found to be statistically non-significant in the present study. Longitudinal investigations may help determine whether the benefits of organizational restructuring emerge only after a longer period of implementation.

7.5. Open Questions

Beyond its own methodological limitations, the argument developed in this article raises several questions that it does not attempt to answer. First, why does the structural dimension of managerial innovation fail to predict financial performance in this and in some other national settings, while succeeding in others [39,40]? The present data cannot determine whether this reflects a genuinely context-dependent effect, a longer and unobserved time lag before structural changes pay off, or a measurement limitation specific to perceptual financial-performance

scales. Second, does the dominance of the ICT dimension observed here reflect a durable structural advantage of digital capability, or a conjunctural effect of the accelerated digitalization that followed the COVID-19 pandemic within the 2020-2023 study window? Only a longitudinal replication beyond this period could distinguish between these possibilities. Third, the model treats the five dimensions of managerial innovation as parallel, independent predictors; it does not ask whether some dimensions are, in practice, preconditions for others – for instance, whether a minimum level of the strategic dimension is required before investment in ICT or partnerships can translate into financial performance – a sequencing question the present cross-sectional design was not built to answer. Finally, the study is silent on the boundary conditions of its own general hypothesis: it does not establish at what firm size, sectoral profile, or institutional context the positive relationship between managerial innovation and financial performance identified here might weaken or reverse. Addressing these questions would require the longitudinal, comparative, and mixed-method extensions outlined in Section 7.4.

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Conflict of Interest

The authors declare no conflicts of interest.

Ethical considerations

The study correctly followed ethical policies towards questionnaire respondents. Also, we confirm the consent of all the respondents involved.

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