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Innovation Through Strategic Fit in Emerging Markets: The Role of Dynamic Managerial Capabilities and Business Strategy

Mohsen Ghavamipour^{1*} | Alireza Booshehri² | Gholamreza Tavakoli³

1. Corresponding Author, Department of Technology Management, Malek Ashtar University of Technology, Tehran, Iran. Email: Ghavamipour@gmail.com
2. Faculty of Industrial Engineering & Management, Malek Ashtar University of Technology, Tehran, Iran. Email: arb1148@yahoo.com
3. Faculty of Industrial Engineering & Management, Malek Ashtar University of Technology, Tehran, Iran. Email: tavakoli145@gmail.com

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ABSTRACT

This study examines how the alignment of dynamic managerial capabilities (DMCs)—human capital, social capital, and cognitive capabilities—with business strategies impacts innovation performance in Iran's industrial sector. Based on data from 344 managers across diverse industries, the research identifies 12 managerial profiles and explores their fit with prospector, analyzer, defender, and reactor strategies. The findings, derived from hierarchical regression analysis and ANOVA, reveal that managers with high human and social capital, paired with balanced cognitive capabilities, achieve significant innovation under prospector and analyzer strategies. In contrast, managers with lower DMC configurations struggle to drive innovation, particularly under reactive and defensive strategies. This study highlights the critical role of strategic alignment in fostering innovation in resource-constrained environments. It offers actionable insights for managers and policymakers, emphasizing the need for targeted DMC development and strategic coherence. By advancing the understanding of DMCs in emerging markets, this research contributes to the literature on innovation and strategic management.

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1. Introduction

Innovation is a cornerstone of competitive advantage, particularly in unpredictable and resource-constrained environments such as Iran. Firms in emerging markets often face challenges such as economic instability, limited resources, and institutional uncertainty, making Dynamic Managerial Capabilities (DMCs) critical for fostering innovation (Meyer & Peng, 2016; Teece et al., 1997). Unlike studies that focus narrowly on emerging industries, this research emphasizes emerging economies, which encompass a broader range of contexts, challenges, and opportunities. This approach ensures the findings are more generalizable and applicable across multiple countries facing similar economic constraints. Additionally, examining economies instead of specific industries enables a holistic understanding of how macroeconomic factors shape managerial and strategic decisions.

This study explores how aligning DMCs—human, social, and cognitive capitals—with business strategies can enhance innovation performance in these challenging contexts. The analysis is conducted at the company level, focusing on innovative performance as a multidimensional construct encompassing product, process, and market innovations. This level of analysis is appropriate as it reflects the organizational outcomes of managerial and strategic decisions, aligning with the survey context. While the relationship between DMCs and business strategy is well-documented, existing research has predominantly focused on developed markets, leaving the dynamics of emerging economies underexplored (Barney, 1991; Helfat & Martin, 2015).

Moreover, prior studies often analyze the components of DMCs in isolation, failing to account for their collective impact on strategic decision-making and innovation outcomes (Heubeck & Meckl, 2022; Mostafiz et al., 2019; Tasheva & Nielsen, 2022). Given the external pressures faced by Iranian firms, such as sanctions and institutional volatility, it is critical to understand how the integration of these capabilities can drive innovation (Talebi et al., 2012). By focusing on emerging economies, this study aims to identify patterns and strategies that can be applied across similar contexts, addressing gaps in the literature regarding the role of DMCs in fostering innovation at the firm level.

To address these gaps, this study aims to answer the following research questions:

RQ1: How do different configurations of DMCs (human capital, social capital, and cognitive capabilities) influence innovation performance in Iran's industrial sector?

RQ2: How does the alignment between managerial DMC profiles and business strategies (prospector, analyzer, defender, and reactor) affect innovation performance?

RQ3: Which combinations of DMCs and strategic orientations optimize innovation in resource-constrained environments like Iran?

This study explores the interaction between different configurations of DMCs and business strategies—namely, prospector, analyzer, defender, and reactor—and their impact on innovation in Iran's industrial sector. By categorizing managers into distinct profiles based on their DMCs, the research offers a nuanced understanding of how these profiles align with strategic orientations to optimize innovation. The results provide actionable insights into the role of strategic fit in fostering innovation, particularly in economies where firms operate under severe resource and institutional constraints.

Despite a considerable body of literature examining business strategies, the critical interplay between business strategies and DMCs remains insufficiently explored (Trizotto et al., 2024). Given that managerial capabilities significantly shape the success of these strategies, this study addresses the need for a detailed investigation into how various DMC profiles align with strategic orientations, particularly in emerging and volatile markets (Conant et al., 1990).

Three theoretical frameworks underpin this study: the Resource-Based View (RBV), Dynamic Capabilities Theory, and the Strategy-as-Practice (SaP) framework. The RBV emphasizes the significance of internal resources, such as managerial expertise, in achieving competitive advantage (Ambrosini & Altintas, 2019; Jarzabkowski & Paul Spee, 2009; Lockett et al., 2009). Dynamic Capabilities Theory extends this perspective by highlighting the ability to reconfigure these resources in response to environmental changes (Teece et al., 1997). The SaP framework complements these theories by focusing on how managers operationalize their capabilities through daily practices, thereby influencing innovation directly (Whittington, 2006).

A key contribution of this study is its identification of 12 distinct DMC profiles, showing how diverse combinations of human, social, and cognitive capital shape strategic decisions and innovation outcomes. This categorization offers practical guidance for firms seeking to align managerial capabilities with strategic objectives to maximize innovation. Furthermore, the findings provide actionable insights for both managers and policymakers, emphasizing the importance of leadership development and enhanced social networks in fostering innovation within resource-limited settings (Khan et al., 2020; Nahapiet & Ghoshal, 1998).

2. Literature Review

2-1. Dynamic Managerial Capabilities (DMCs) and Managerial Categorization

DMCs are crucial for understanding how firms adapt and maintain a competitive edge in rapidly changing environments (Adner & Helfat, 2003; Helfat & Martin, 2015). Emerging from the broader dynamic capabilities framework (Teece et al., 1997), DMCs highlight the importance of managerial decisions in coordinating resources and driving strategic renewal (Kor & Mesko, 2013). They encompass managerial human capital, social capital, and cognition, which together enable managers to find opportunities, seize them, and reconfigure resources to sustain competitive advantage (Helfat & Peteraf, 2015). However, the interplay of these components remains underexplored, particularly in resource-constrained contexts where their collective impact is likely to be most pronounced.

Human capital refers to the skills, expertise, and experiences that enable managers to make informed decisions, while social capital captures the value derived from networks and relationships that facilitate resource access. Cognitive capabilities, encompassing both intuitive and analytical decision-making styles, play a pivotal role in interpreting complex environments and crafting strategic responses. Together, these components form a dynamic system that significantly influences a firm's innovation outcomes.

The integrated impact of these components on organizational performance has gained renewed attention, particularly in the context of emerging markets, where institutional voids amplify the need for adaptive strategies (Heubeck & Meckl, 2022; Tasheva & Nielsen, 2022). Research has emphasized the distinct roles of each component. Managerial cognition, for example, affects how leaders interpret and respond to changes (Eggers & Kaplan, 2013; Hodgkinson & Sadler-Smith, 2018), while social capital plays a key role in accessing external resources, particularly in resource-constrained settings (Mehta & Ali, 2021). Recent studies have also begun to examine the synergies between these components, such as how strong social networks can enhance the effectiveness of cognitive flexibility; however, these interactions require further empirical validation (Heubeck, 2023; Kryeziu et al., 2024).

Despite these insights, the interactions between these elements, such as the synergy between cognition and social capital in decision-making, are still not fully explored (Heubeck, 2023). Additionally, existing categorizations of managerial profiles often fail to incorporate the dynamic nature of these capabilities, limiting their utility for understanding innovation outcomes in emerging markets. Addressing this gap, this study introduces a comprehensive framework that categorizes managers based on distinct configurations of human capital, social capital, and cognitive capabilities.

Recent research highlights the pivotal role of DMCs in enabling firms to navigate uncertainty and maintain competitiveness, particularly within emerging markets and sectors driven by technological advancements (Heubeck, 2023; Karaca & Bağış, 2024; Tenggono et al., 2024). For instance, Karaca and Bağış (2024) reveal that managers' cognitive styles—both rational and intuitive—significantly shape DMCs and, consequently, influence perceived international performance among SMEs in Türkiye. Similarly, Tenggono et al. (2024) demonstrate that in Indonesia's healthcare sector, DMCs enhance strategic agility in response to institutional pressures, thereby facilitating strategic renewal amid the challenges of digital transformation. Heubeck's (2023) study on German DAX firms further underscores the contribution of DMCs to firm performance through increased R&D investment, with this relationship moderated by the presence of internal slack resources. Collectively, these studies underscore the multifaceted influence of DMCs across diverse contexts, reinforcing their critical role in fostering adaptability and performance. Building upon these insights, this study explores how DMCs align with distinct strategic orientations—such as prospector, analyzer, and defender strategies—to drive innovation within the emerging market context. Unlike prior studies that often examine DMC components in isolation, this research investigates the integrated impact of managerial

human capital, social capital, and cognition, thereby addressing a critical gap in understanding how these capabilities collectively influence strategic orientation and innovation outcomes in emerging economies.

2-2. Business Strategy and Innovation Performance

The relationship between business strategy and innovation performance has been extensively studied, with the Miles and Snow (1978) typology—comprising prospector, analyzer, defender, and reactor strategies—serving as a foundational framework (Mohr et al., 2011). Each strategic orientation prescribes distinct approaches to market engagement, resource allocation, and risk management, which subsequently influence innovation outcomes (Walker, 2013). However, recent studies suggest that the effectiveness of these strategies is contingent upon the alignment with managerial capabilities, particularly in environments characterized by rapid change and resource constraints (Karaca & Bağış, 2024; Kryeziu et al., 2024).

For example, prospector strategies, which emphasize exploration and radical innovation, require managers with high human and social capital as well as cognitive flexibility to navigate uncharted territories. Analyzer strategies, balancing exploration and exploitation, demand robust managerial profiles capable of integrating internal and external networks to achieve ambidexterity (Tenggono et al., 2024). Conversely, defender strategies prioritize cost efficiency and incremental innovation, aligning better with managers who possess strong internal resource management capabilities. Reactor strategies, lacking a coherent orientation, often result in suboptimal innovation outcomes, highlighting the need for stronger managerial capabilities to overcome strategic inertia.

This study builds on the Miles and Snow framework to investigate how DMC configurations align with these strategic orientations to optimize innovation. By examining the alignment between managerial capabilities and business strategies, it seeks to identify actionable insights for firms operating under the dual pressures of resource scarcity and environmental volatility (Karaca & Bağış, 2024; Kryeziu et al., 2024).

2-2-1. Prospector Strategy and Innovation

Prospector firms are distinguished by their proactive pursuit of new market opportunities and a strong emphasis on innovation (Miles et al., 1978). These firms are characterized by their continuous exploration of new possibilities, often leading to radical innovations (Al-Ansaari et al., 2015). Managers in prospector firms require high levels of human capital to navigate unfamiliar markets and foster organizational learning (Andersén, 2021). Recent research on prospector strategies underscores a positive relationship with financial performance, especially when firms possess high efficiency and adaptive capabilities, but notes that factors such as board diversity can moderate this relationship (Kurnianto & Soewarno, 2024). In addition to human capital, social capital is also critical, as external networks provide access to novel ideas and resources (Yli-Renko et al., 2001). However, while human and social capitals are both essential, cognitive capabilities—particularly the ability to balance intuitive judgment with analytical reasoning—play a pivotal role in maintaining innovation under conditions of resource scarcity (Baden-Fuller & Teece, 2020).

2-2-2. Analyzer Strategy and Innovation

Analyzer firms occupy a middle ground, balancing innovation with efficiency through a combination of exploratory and exploitative activities (Miles et al., 1978). This dual focus necessitates not only cognitive flexibility but also robust social capital to navigate the complexities of ambidexterity (Tenggono et al., 2024). Newer studies indicate that analyzers, especially SMEs, benefit from strategic human resource management practices that enhance organizational performance, with strategic orientation impacting operational efficiencies and innovation capacities (Chourasia & Bahuguna, 2024). While these findings confirm the relevance of ambidexterity in achieving innovation, they also highlight the critical role of managerial profiles that can bridge internal and external networks to maintain balance (O'Reilly & Tushman, 2013; Satrovic et al., 2024).

2-2-3. Defender Strategy and Incremental Innovation

Defender firms prioritize efficiency, cost control, and the protection of established markets (Miles et al., 1978). Their innovation efforts are typically incremental, focused on improving internal processes rather than creating new products or entering new markets (Varadarajan, 2010). In resource-constrained environments, this strategy can be sustainable, but it may hinder adaptability to shifts in the market. Recent findings suggest that defenders benefit from aligning strategic orientation with HR management, where multidimensional performance perspectives can help improve process innovations while maintaining cost control (Chourasia & Bahuguna, 2024). However, managers in defender firms who possess strong human capital and cognitive balance can lead incremental innovations without overextending the firm's resources (Lichtenthaler, 2023). The strategic reliance on social capital to optimize internal resources is crucial, but it can also lead to a "competency trap," where firms become slower to adapt to external changes (Leonard-Barton, 1992; Zhang et al., 2023).

2-2-4. Reactor Strategy and Innovation

Reactor firms, lacking a coherent strategy, often respond erratically to environmental changes (Miles et al., 1978). This reactive stance generally results in poor innovation outcomes and inefficiencies (Zahra & Pearce, 1990). Emerging research emphasizes the challenges reactor firms face, particularly in volatile markets, where managerial capabilities are critical for fostering resilience (Dobni et al., 2016; Kryeziu et al., 2024). Recent evidence from SMEs in transitional economies indicates that reactors may achieve short-term survival but struggle with sustainable innovation due to inadequate managerial human and social capitals (Anwar et al., 2024).

2-3. Configurations of DMC Components and Strategic Choice

Understanding how configurations of DMC components influence strategic choices is crucial for aligning managerial capabilities with organizational goals (Sirmon & Hitt, 2009). The typology proposed in this research categorizes managers based on different combinations of human capital, social capital, and cognition, offering a more nuanced understanding of strategic alignment. However, existing empirical research on these configurations remains limited, particularly in the context of emerging markets where resource constraints and institutional voids heighten the need to balance these capabilities effectively (George et al., 2016).

2-3-1. Human Capital and Strategic Choice

Managerial human capital, which includes education, experience, and skills, has a direct impact on strategic decision-making and innovation outcomes (Castanias & Helfat, 2001; Mehta & Ali, 2021; Nguyen & Larimo, 2022). In emerging markets, the scarcity of managerial talent further amplifies the significance of developing high human capital (Salavou, 2015). Recent findings by Nguyen and Larimo (2022) indicate that firms with robust human capital exhibit superior flexibility and resilience in uncertain environments, providing them with a distinct competitive edge.

2-3-2. Social Capital and Networking

Managerial social capital enables access to external resources, knowledge, and opportunities, all of which are deemed essential for fostering innovation (Adler & Kwon, 2002; Mehta & Ali, 2021). While strong networks provide critical advantages, over-reliance on external ties can hinder the development of internal capabilities, as noted by Brass (2022). Emerging evidence also highlights the moderating effect of cultural context, where the nature of social ties significantly influences their impact on innovation (Karaca & Bağış, 2024).

2-3-3. Cognitive Capabilities and Strategic Adaptability

Cognitive capabilities shape how managers perceive, interpret, and respond to changes in the environment (Kryeziu et al., 2024). Managers with cognitive flexibility can shift between mental models and adapt strategies to align with dynamic conditions, a critical requirement for innovation in turbulent markets (Brown et al., 2015). Recent empirical research underscores the dual importance of analytical and intuitive cognition in enabling strategic decision-making, particularly in sectors undergoing digital transformation (Heubeck & Meckl, 2022).

2-4. Aligning DMCs with Business Strategy for Innovation Outcomes

Achieving superior innovation outcomes necessitates the alignment of managerial capabilities with a firm's strategic orientation (Venkatraman, 1989). This alignment has been shown to enhance innovation across sectors, particularly when managerial profiles are tailored to specific strategic demands (Harris & Helfat, 2016). In a recent meta-analysis, Kiss et al. (2022) demonstrated that firms with well-aligned DMC configurations outperform their peers in both incremental and radical innovation efforts.

2-4-1. Strategic Fit and Innovation

Firms that align high levels of human, social, and cognitive capitals with prospector strategies are more likely to achieve radical innovations and maintain a competitive advantage (O'Reilly & Tushman, 2013). This alignment enables managers to sense and seize opportunities effectively while reconfiguring resources to support continuous innovation (Harris & Helfat, 2016). Conversely, misalignment between a firm's DMC profile and its strategic orientation—for instance, low cognitive or social capital in a prospector firm—often results in strategic drift and poor innovation performance (Kiss et al., 2022). Firms must ensure a dynamic fit between their capabilities and strategic demands to remain competitive.

2-4-2. Challenges in Defensive and Reactive Strategies

Defender and reactor strategies are often associated with lower innovation levels; however, enhancing managerial capabilities can mitigate these limitations (Al-Ansaari et al., 2015). Recent studies suggest that even conservative firms, such as defenders, can achieve process innovations by leveraging social capital to establish collaborative networks with suppliers and customers, facilitating incremental improvements (Chen et al., 2021). Similarly, investments in human and social capital can enable defenders to remain competitive in mature industries by fostering incremental innovation (Subramaniam & Youndt, 2005). However, reactor firms, given their inconsistent strategies, face more profound challenges, as their unstable managerial capabilities hinder both innovation and adaptability (Zahra & Pearce, 1990). Targeted managerial development initiatives are necessary to encourage proactive rather than reactive strategic behavior (Vuorio & Torkkeli, 2023).

2-5. Gaps in the Literature and Future Research Directions

Despite considerable progress in understanding DMCs, several gaps persist. First, while prior studies have explored individual components of DMCs (human capital, social capital, cognition), limited research examines their collective impact, particularly in resource-constrained environments such as emerging markets. This gap highlights the need for a more integrated approach to understanding how these capabilities interact to influence innovation performance (Wang et al., 2020).

Second, empirical research examining the interplay between DMC configurations and strategic choices in emerging markets remains sparse. Emerging markets present unique institutional and cultural challenges that warrant further investigation, particularly concerning how DMCs evolve and operate within these contexts (Marano et al., 2016). For example, the role of social capital in compensating for weak institutional support or the ways cognitive flexibility enables adaptation to volatile environments are underexplored areas.

Future research should adopt multi-level and cross-cultural approaches to investigate how DMCs influence firm performance and innovation across diverse contexts (George et al., 2016). Furthermore, longitudinal studies are essential to understand how managerial capabilities evolve over time and how they shape long-term strategic outcomes and competitive advantage (Helfat & Martin, 2015). Such studies could provide deeper insights into how DMCs adapt to external shocks, such as economic crises or regulatory changes, and how these adaptations impact strategic alignment and innovation outcomes (Kor & Mesko, 2013).

Additionally, future studies should account for control variables such as firm size, industry type, and years of operation, as these factors may moderate or mediate the relationship between DMC configurations and innovation performance. For example, larger firms may have greater resources to support innovation, while industry-specific dynamics could influence the applicability of certain

managerial profiles. Incorporating these variables can enhance the robustness and the generalizability of findings across different contexts.

Figure 1 illustrates the hypothesized relationships between the twelve Dynamic Managerial Capability (DMC) profiles, business strategy orientations, and innovation performance, demonstrating how different managerial profiles align with specific strategic orientations—defender, analyzer, prospector, and reactor. This framework provides a foundation for future research to test and refine the categorization of managerial profiles, particularly in diverse and dynamic market settings.

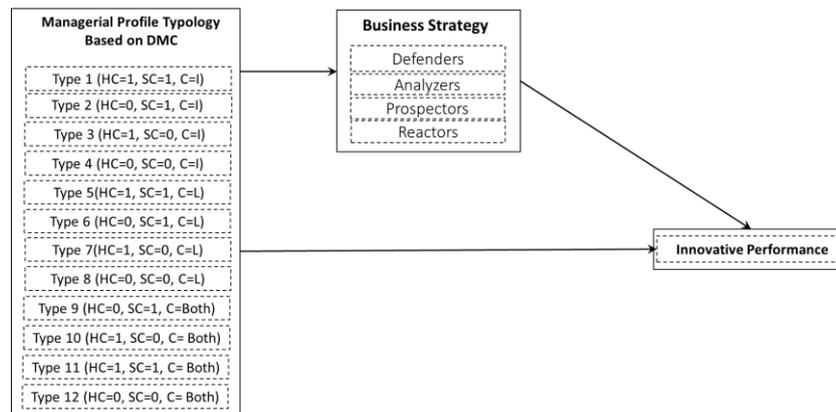


Fig. 1. Conceptual Model (Developed by the authors)

3. Methodology

3-1. Research Design

This study employs a quantitative research design to investigate how DMCs influence innovation performance in Iran's industrial sector. The quantitative approach allows for systematic measurement and empirical examination of the relationships between managerial human capital, social capital, cognitive capabilities, and innovation outcomes (Tece et al., 1997). The analysis is conducted at the company level, ensuring alignment between the data collection methods, measurement indicators, and the study's objectives. This level of analysis was chosen to capture organizational outcomes of managerial and strategic decisions, reflecting the collective impact of DMC configurations on firm performance.

3-2. Sample and Data Collection

The sampling frame for this study consisted of top entrepreneurs identified by the Ministry of Cooperatives, Labor, and Social Welfare in Iran. This population was selected because it represents a diverse and experienced group of managers actively contributing to innovation across key sectors of the Iranian economy. To ensure the validity of the company-level analysis, the sample was drawn from firms where the responding managers had direct influence over strategic and innovative decisions. This alignment was verified through pre-survey screening questions.

From the ministry's list, a stratified purposive sampling technique was employed to ensure proportional representation across sectors, reflecting the study's focus on manufacturing, agriculture, and services industries (Maxwell, 2019). Specifically, 200 entrepreneurs were purposively selected from each sector, resulting in a total of 600 initial participants. This approach was chosen to capture sector-specific dynamics of innovation while maintaining a balanced dataset.

Data collection involved multiple modes to maximize the response rate and reduce potential non-response bias (Peytchev & Hill, 2010). Entrepreneurs were contacted via email, in person, and through an online questionnaire distributed using the Porsline application. Of the 600 entrepreneurs contacted, 354 managers responded, resulting in a response rate of 59%. After data cleaning procedures to eliminate incomplete or invalid responses, 344 valid questionnaires were retained for analysis.

To address potential issues with sampling at the company level, we ensured that participants were CEOs, founders, or top managers directly responsible for their firm's innovation activities. Additionally, the questionnaire included firm-level indicators of innovation performance, such as the

number of new products introduced and process improvements achieved, to validate the data's relevance to the study's objectives.

3-3. Measures

To ensure validity and reliability, we utilized established questionnaires from prior research, carefully translating and adapting them to the Iranian context (Brislin, 1986). The translation process involved forward and backward translation by bilingual experts to preserve the meaning of items (Behling & Law, 2000).

- **Human Capital:** Measured using a 7-point Likert scale capturing educational attainment, years of managerial experience, and participation in leadership development programs. These indicators were chosen to reflect managerial expertise at the company level, ensuring relevance to firm-wide innovation outcomes (Mostafiz et al., 2019).
- **Social Capital:** Assessed using a scale adapted from Nahapiet and Ghoshal (1998), focusing on internal and external network ties, trust, and collaboration. Social capital is critical in Iran due to economic constraints and the importance of domestic networks (Mostafiz et al., 2021).
- **Cognitive Capabilities:** Measured using the Rational and Intuitive Decision Styles Scale (Hamilton et al., 2016). This measure was refined through pre-testing to better reflect the decision-making preferences of managers in the Iranian context, ensuring cultural relevance and alignment with the study's objectives.
- **Innovation Performance:** Assessed using a multidimensional scale adapted from Kleinschmidt and Cooper (1991), including measures of product innovation, process innovation, and market expansion (Alpkan et al., 2010). Adjustments were made to align these indicators with firm-level innovation metrics, ensuring consistency with the company-level analysis (Ritala et al., 2015).
- **Strategic Orientation:** This study employs the Miles and Snow (1978) typology to classify firms into four strategic orientations: prospector, analyzer, defender, and reactor. Measurement is based on the 11-item instrument developed by Conant et al. (1990), which has established reliability across diverse sectors, including a test-retest reliability of 0.69. To enhance generalizability, we adopt the refined version by Parnell and Wright (1993), which removes industry-specific terminology, making it suitable for a variety of contexts (Day & Lichtenstein, 2006). The instrument was validated through exploratory factor analysis and further adapted to capture strategic behaviors relevant to emergent markets, consistent with previous adjustments for similar settings (Anwar et al., 2024; Zahra & Pearce, 1990).

3-4. Validity and Reliability

To ensure the reliability of the adapted scales, we conducted Cronbach's alpha tests for each construct, with all scales demonstrating acceptable reliability coefficients above the threshold of 0.70 (Ahmad & Faisal, 2024). Construct validity was assessed through confirmatory factor analysis (CFA), confirming that the measurement models fit the data adequately (Hair et al., 2014). Special attention was given to validate the alignment of individual-level responses with firm-level innovation metrics, ensuring coherence between the measurement tools and the study's analytical focus (see Table 1).

3-5. Categorization of DMC Profiles

Managers were categorized into Dynamic Managerial Capability (DMC) profiles using a theoretically grounded and methodologically rigorous approach informed by established literature. This categorization framework integrated three critical dimensions: managerial human capital, social capital, and cognitive capabilities. Human capital and social capital were initially classified into "low" and "high" levels, providing a foundational structure for the categorization process (Adner & Helfat, 2003). Recognizing the pivotal role of cognitive capabilities in managerial decision-making, we further incorporated the decision-making styles of managers into the analysis.

Building on prior research, three distinct decision-making styles were identified: logical, intuitive, and both (a flexible decision-making style). These styles are known to significantly influence strategic actions and innovation outcomes (Sadler-Smith, 2016). By systematically integrating the levels of human capital (low/high), social capital (low/high), and cognitive capabilities (logical, intuitive, both), we identified 12 distinct managerial profiles, which are detailed in Table 2.

Table 1. The Reliability and Validity of Constructs and Items

Construct	Cronbach's Alpha (α)	AVE	Item	Description	Factor Loading	
Managerial Human Capital (Mostafiz et al., 2019)	0.719	0.51	HC1	Prior Entrepreneurial Experiences: Years spent working for start-up firms before starting the current company	0.689	
			HC2	Prior Managerial Experiences: Years spent managing others' businesses before starting the current company	0.698	
			HC3	Prior Academic Education: Level of educational qualification achieved prior to starting the current company	0.704	
			HC4	Training Experiences: Number of relevant training activities (e.g., legal, marketing) undertaken prior to and during the tenure as CEO	0.736	
Managerial Social Capital (Mostafiz et al., 2021)	0.858	0.52	SC1	Business Tie Strengths: Top manager at buyer firms	0.798	
			SC2	Business Tie Strengths: Top manager at supplier firms	0.756	
			SC3	Business Tie Strengths: Top manager at competitor firms	0.792	
			SC4	Political Tie Strengths: Political leader in various government levels	0.734	
			SC5	Political Tie Strengths: Officials in industry bureaus	0.840	
			SC6	Political Tie Strengths: Officials in regulatory/supporting organizations (e.g., National Board of Revenue)	0.729	
Managerial Cognition (Hamilton et al., 2016)	Logical Decision-Making Style ($\alpha = 0.838$, AVE = 0.54)		CL1	I prefer to gather all the necessary information before committing to a decision	0.661	
			CL2	I thoroughly evaluate decision alternatives before making a final choice	0.694	
			CL3	In decision making, I take time to contemplate the pros/cons or risks/benefits of a situation	0.689	
			CL4	Investigating the facts is an important part of my decision-making process	0.660	
			CL5	I weigh a number of different factors when making decisions	0.756	
	Intuitive Decision-Making Style ($\alpha = 0.773$, AVE = 0.59)		CI1	When making decisions, I rely mainly on my gut feelings	0.729	
			CI2	My initial hunch about decisions is generally what I follow	0.756	
			CI3	I make decisions based on intuition	0.786	
			CI4	I rely on my first impressions when making decisions	0.756	
			CI5	I weigh feelings more than analysis when making decisions	0.733	
	Innovative Performance (Alpkan et al., 2010)	0.892	0.60	IP1	Percentage of new products in the existing product portfolio	0.690
				IP2	Number of new product and service projects	0.819
				IP3	Ability to introduce new products/services to the market before competitors	0.724
				IP4	Innovations introduced for work processes and methods	0.794
				IP5	Quality of new products/services introduced	0.731

Table 2. Categorization of Managers Based on Validated DMC Profiles

DMC Profile	Managerial Human Capital	Average	Managerial social Capital	Average	Managerial Cognition Capability	Average
Type 1	High	4.0625	High	4.0313	Intuition	4.3000
Type 2	Low	2.1250	High	3.7917	Intuition	4.2200
Type 3	High	3.8958	Low	2.2292	Intuition	3.9583
Type 4	Low	2.3265	Low	2.239	Intuition	4.2245
Type 5	High	3.6735	High	3.7619	Logical	4.2245
Type 6	Low	2.2177	High	3.7043	Logical	4.0452
Type 7	High	3.8587	Low	2.4710	Logical	4.2087
Type 8	Low	2.1806	Low	2.2963	Logical	3.9556
Type 9	Low	2.354	High	4.764	Both	3.46/3.67
Type 10	High	4.634	Low	2.143	Both	3.86/3.51
Type 11	High	4.645	High	4.723	Both	3.12/3.42
Type 12	Low	2.435	Low	2.786	Both	2.78/2.56

3-5-1. Validation Process

To ensure the validity and reliability of this categorization, a structured questionnaire was developed to measure the three dimensions of DMCs: managerial human capital (e.g., education, expertise, and experience), social capital (e.g., professional networks and partnerships), and cognitive capabilities (decision-making preferences). Managers' responses were analyzed using one-sample t-tests, which compared observed means with theoretical averages. This statistical approach allowed us to assign managers to either "low" or "high" categories for human and social capital and to determine their dominant cognitive styles (logical, intuitive, or both).

Table 2 also presents the average scores for each dimension across the 12 identified profiles. For instance, Type 1 managers demonstrated significantly above-average scores in human capital (4.0625) and social capital (4.0313), paired with an intuitive cognitive style (4.3000). Conversely, Type 8 managers exhibited below-average scores in both human capital (2.1806) and social capital (2.2963), coupled with a logical cognitive style (3.9556). These profiles capture meaningful variations in managerial capabilities, offering insights into their potential impact on strategic alignment and innovation performance.

To enhance the clarity and accuracy of the questionnaire, a pre-test was conducted with a small, representative sample of managers. Feedback from this pre-test facilitated refinement of the questionnaire items, ensuring that they were clear and unambiguous. The final results were then validated through consultations with academic and industry experts, who confirmed that the profiles align with practical managerial archetypes relevant to the Iranian context.

3-5-2. Implications of the Categorization

This categorization provides a cohesive and nuanced framework for analyzing how different configurations of managerial capabilities influence innovation performance. By integrating statistical validation with expert consultation, we ensured that the identified profiles are both theoretically sound and practically relevant. The profiles reflect meaningful distinctions in managerial capabilities, offering actionable insights into the dynamics of innovation and strategic alignment in resource-constrained environments.

While exploratory, this approach serves as a foundation for future research to refine these profiles and explore additional dimensions of managerial capabilities that may better capture the complexities of decision-making and innovation across diverse organizational contexts.

3-6. Data Analysis

Hierarchical regression analysis was employed to assess the relationships between DMC configurations and innovation performance (Cohen, 2003). This method allows for examining the incremental contribution of each set of variables and testing interaction effects between DMC components and strategic orientation. The hierarchical regression was structured as follows:

Model 0 (Control Model): Included control variables such as firm size, industry type, and years of operation to account for their potential influence on innovation performance.

Model 1 (Main Effects Model): Added the main effects of managerial human capital, social capital, and cognitive capabilities to assess their direct impact on innovation performance.

Model 2 (Strategic Orientation Model): Introduced strategic orientation variables (prospector, analyzer, defender, reactor) to examine their effect on innovation performance.

Model 3 (Interaction Model): Included interaction terms between DMC components and strategic orientation to explore how the alignment of managerial capabilities with strategic orientation influences innovation performance.

This stepwise approach provides insights into the relative importance of DMC components and strategic orientation in predicting innovation performance, and whether their interaction produces synergistic effects (Aiken, 1991). By adding variables sequentially, we could observe changes in the explained variance (R^2) and determine the significance of each block of variables, thereby justifying the hierarchical structure of the regression models.

Assumptions of regression analysis, including linearity, independence of errors, homoscedasticity, and normality of residuals, were tested and met. Variance inflation factors (VIFs) were calculated to assess multicollinearity, with all VIFs below the threshold of 5, indicating no significant multicollinearity issues (Hair et al., 2010).

3-7. Robustness and Diagnostic Checks

To ensure the robustness of our findings, we conducted diagnostic tests. Heteroscedasticity was assessed using the Breusch-Pagan test, confirming constant variance of errors (Breusch & Pagan, 1979). The normality of residuals was evaluated through the Shapiro-Wilk test and Q-Q plots, indicating that residuals were approximately normally distributed.

Sensitivity analyses were performed by altering model specifications, such as including alternative control variables and using different operationalizations of key constructs. The results remained consistent across these variations, strengthening the reliability of our findings (Cohen, 2003).

3-8. Ethical Considerations

Ethical approval for the study was obtained from the Institutional Review Board (IRB) of Malek Ashtar University of Technology, Tehran, Iran, ensuring compliance with ethical standards for research involving human participants. Informed consent was obtained from all participants, who were assured of the confidentiality and anonymity of their responses. Data were stored securely and used exclusively for research purposes, in adherence to data protection regulations.

4. Data Analysis

This section presents findings from hierarchical regression, ANOVA, and Chi-Square tests, examining the effects of DMCs and business strategies on innovation performance. The analysis emphasizes the interaction between DMC profiles and strategic orientation in optimizing innovation outcomes (VanderWeele, 2016; Wilkinson, 2010).

4-1. Hierarchical Regression Analysis: DMC Components and Business Strategies

Hierarchical regression was employed to assess the direct and interactive effects of DMC components—human capital, social capital, and cognitive capabilities—on innovation performance, as well as their interaction with business strategies (Cohen, 2003). Statistical assumptions were tested and found to be met (Hair et al., 2010).

Model 1: DMC components positively impact innovation performance ($\beta = 0.367$, $t = 7.300$, $p < 0.001$), aligning with prior research (Helfat & Martin, 2015).

Model 2: Introducing business strategies, DMCs remain significant ($\beta = 0.300$, $t = 6.520$, $p < 0.001$). Prospector strategy enhances innovation ($\beta = 0.256$, $p < 0.001$), while Reactor strategy hinders it ($\beta = -0.273$, $p < 0.001$).

Model 3: Interaction terms indicate that DMCs amplify innovation under Prospector strategy ($\beta = 0.887$, $p < 0.001$) but are insufficient under the Reactor strategy ($\beta = -0.712$, $p < 0.001$). Table 3 presents the standardized coefficients from the regression models.

Table 3. Standardized Coefficients for Dynamic Management Capabilities Models

Model	Variable	Standardized Coefficients (Beta)	t Value	Significance Level
1	Constant		22.956	<.001
	DMC	.367	7.300	<.001
2	Constant		22.160	<.001
	DMC	.300	6.520	<.001
	Defender	-.015	-0.301	.763
	Reactor	-.273	-5.215	<.001
	Prospector	.256	4.889	<.001
3	Constant		23.998	<.001
	DMC * Defender	.082	0.739	.461
	DMC * Analyzer	.138	1.390	.165
	DMC * Reactor	-.712	-6.555	<.001
	DMC * Prospector	.887	8.883	<.001

Note: Significance levels are denoted as follows: <.001 for $p < 0.001$.

4-2. ANOVA Analysis

Twelve DMC profiles were defined based on the levels of human capital (high/low), social capital (high/low), and cognitive capabilities (logical, intuitive, both).

4-2-1. Business Strategy and Innovation Performance

One-way ANOVA indicated that business strategy significantly affects innovation performance ($F(3, 340) = 33.638, p < 0.001, \text{partial } \eta^2 = 0.229$). Tukey's HSD test revealed that Prospector strategy leads to higher innovation than Reactor and Defender strategies (see Table 4). Figure 2 illustrates that firms adopting the Prospector strategy have the highest mean innovation performance, followed by Analyzer, Defender, and Reactor strategies.

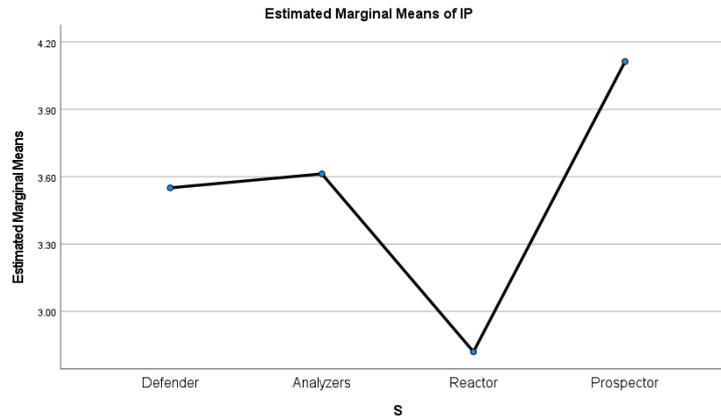


Fig. 2. Interaction plot for Innovation Performance and Business Strategy

Table 4. Business Strategy and Innovation Performance

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared	Noncentral Parameter	Observed Power
Corrected Model	66.888	3	22.296	33.638	0.000	0.229	100.915	1.000
Intercept	4,081.498	1	4,081.498	6,157.794	0.000	0.948	6,157.794	1.000
Strategy (S)	66.888	3	22.296	33.638	0.000	0.229	100.915	1.000
Error	225.358	340	0.663					
Total	4,726.040	344						
Corrected Total	292.246	343						

a. R Squared = 0.229 (Adjusted R Squared = 0.222)

b. Computed using $\alpha = 0.05$

4-2-2. DMC Profiles and Innovation Performance

One-way ANOVA revealed that DMC profiles significantly influence innovation performance ($F(11, 332) = 9.848, p < 0.001, \text{partial } \eta^2 = 0.246$). Types 1 and 11 managers (high human and social capitals) outperformed lower-capability types (see Table 5). Figure 3 illustrates that Types 1 and 11 managers exhibit the highest mean innovation performance, while Types 4 and 8 demonstrate the lowest.

Table 5. DMC Types and Innovation Performance

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncentral Parameter	Observed Power
Corrected Model	71.896	11	6.536	9.848	0.000	0.246	108.326	1.000
Intercept	3,888.760	1	3,888.760	5,859.169	0.000	0.946	5,859.169	1.000
TYPES	71.896	11	6.536	9.848	0.000	0.246	108.326	1.000
Error	220.350	332	0.664					
Total	4,726.040	344						
Corrected Total	292.246	343						

a. R Squared = 0.246 (Adjusted R Squared = 0.221)

b. Computed using $\alpha = 0.05$

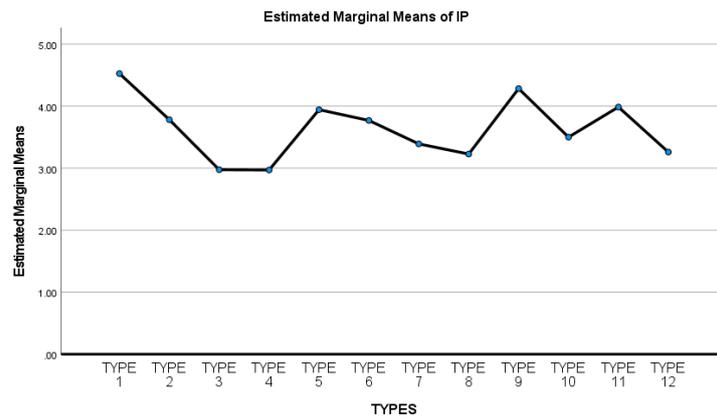


Fig. 3. Interaction Plot for Innovation Performance and DMC Types

4-3. Interaction Between DMC and Business Strategy on Innovation Performance

Two-way ANOVA indicated a significant interaction between DMC profiles and business strategies on innovation performance ($F(29, 300) = 2.431, p < 0.001, \text{partial } \eta^2 = 0.190$) (see Table 6). Figure 4 illustrates how different combinations of DMCs and business strategies influence innovation.

Type 11 Managers: Achieve highest innovation under Prospector strategy.

Type 1 Managers: Perform well under Prospector strategy but decline under Defender or Reactor strategies.

Types 4 and 8 Managers: Underperform across all strategies.

Table 6. DMC Types and Business Strategy on Innovation performance

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncentral Parameter	Observed Power
Corrected Model	145.373	43	3.381	6.905	0.000	0.497	296.936	1.000
Intercept	2,850.273	1	2,850.273	5,821.907	0.000	0.951	5,821.907	1.000
TYPES	40.371	11	3.670	7.497	0.000	0.216	82.462	1.000
Strategy (S)	22.126	3	7.375	15.065	0.000	0.131	45.195	1.000
TYPES × S	34.510	29	1.190	2.431	0.000	0.190	70.488	1.000
Error	146.873	300	0.490					
Total	4,726.040	344						
Corrected Total	292.246	343						

a. R Squared = 0.497 (Adjusted R Squared = 0.425)

b. Computed using alpha = 0.05

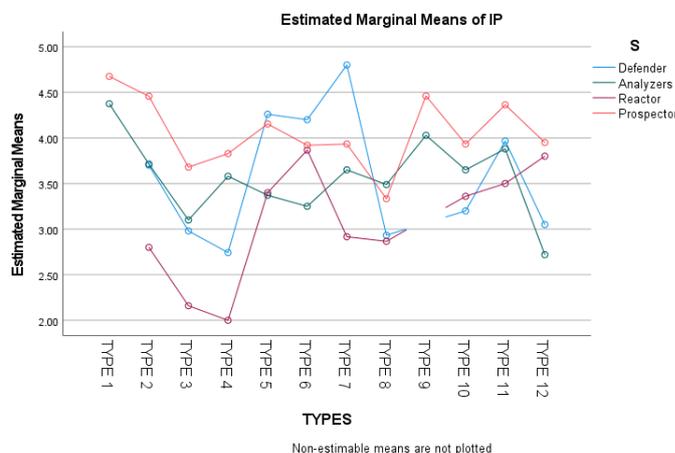


Fig. 4. Interaction Plot for DMC Types and Business Strategy on Innovation Performance

These findings underscore the importance of aligning managerial capabilities with appropriate strategies (Sen & Yildirim, 2022).

4-3-1. Association Between DMC Types and Business Strategies

A Chi-Square test indicated a significant association between DMC types and business strategies ($\chi^2(33) = 102.785, p < 0.001$). Caution is advised due to the presence of some cells with low expected counts (see Table 7) (Agresti, 2012).

The analyses highlight that both DMC profiles and business strategies significantly impact innovation performance. Aligning strong managerial capabilities with proactive strategies, such as Prospector, leads to superior innovation outcomes, while misalignment or weak capabilities result in underperformance.

Table 7. Cross-Tabulation of DMC Types and Business Strategies

DMC Type	Defender	Analyzer	Reactor	Prospector	Total
Type 1	0	8	0	8	16
Type 2	4	7	4	7	22
Type 3	10	4	5	5	24
Type 4	7	10	17	14	48
Type 5	20	14	2	13	49
Type 6	3	8	6	15	32
Type 7	1	4	12	6	23
Type 8	6	18	9	3	36
Type 9	0	7	0	10	17
Type 10	4	4	5	3	16
Type 11	6	20	4	11	41
Type 12	8	5	3	4	20
Total	69	109	67	99	344

5. Findings

RQ1: How do different configurations of DMCs influence innovation performance in Iran's industrial sector?

The analysis revealed that managers with high levels of human and social capital, coupled with balanced cognitive capabilities, significantly outperformed others in fostering innovation ($\beta = 0.367, t = 7.300, p < 0.001$). These managers, categorized as Type 11 in the DMC profiles, demonstrated the highest innovation performance, particularly in sectors characterized by dynamic market demands. This aligns with prior studies emphasizing the importance of resourceful managerial profiles in resource-constrained environments (Helfat & Martin, 2015).

In contrast, managers with low human and social capital (e.g., Types 4 and 8) exhibited limited capacity for innovation, regardless of strategic orientation. These findings underscore the critical role of human capital development and network building in compensating for environmental volatility. Unexpectedly, Type 9 managers, with high social capital but low human capital, indicated moderate innovation performance, suggesting that strong external networks can partially offset skill deficits.

RQ2: How does the alignment between managerial DMC profiles and business strategies affect innovation performance?

The interaction analysis ($F(29, 300) = 2.431, p < 0.001, \text{partial } \eta^2 = 0.190$) demonstrated that the alignment between managerial profiles and strategic orientations is pivotal for maximizing innovation outcomes. Specifically:

- Type 11 managers achieved the highest innovation performance when aligned with prospector strategies ($\beta = 0.887, p < 0.001$). This highlights their ability to leverage robust human and social capital for opportunity exploration and exploitation.
- Type 1 managers also performed well under prospector strategies but experienced a sharp decline under defender or reactor strategies, indicating the context-dependent effectiveness of their capabilities.

- Reactive strategies consistently resulted in poor performance across all profiles, further validating the necessity of strategic coherence in volatile environments.

These findings corroborate the theoretical assertion that strategic alignment serves as a catalyst for innovation (Venkatraman, 1989). Misalignment, such as the assignment of low-capability managers to innovation-driven strategies, often leads to strategic drift and suboptimal outcomes.

RQ3: Which combinations of DMCs and strategic orientations optimize innovation in resource-constrained environments like Iran?

The results emphasize that innovation is optimized under prospector and analyzer strategies when paired with high-capability managerial profiles (Types 1, 5, and 11). This is evidenced by their ability to navigate uncertainty and allocate resources effectively toward innovative pursuits ($F(11, 332) = 9.848, p < 0.001, \text{partial } \eta^2 = 0.246$). Type 11 managers, with balanced cognitive capabilities, emerged as the most effective across prospector and analyzer strategies, underscoring the value of cognitive flexibility in dynamic contexts.

In contrast:

- Defender strategies yielded moderate performance but were limited to incremental innovation, particularly for low-capability profiles.
- Reactor strategies consistently underperformed, as their lack of coherence hindered the effective utilization of DMCs.

These findings suggest that strategic orientations emphasizing exploration and ambidexterity (e.g., prospector and analyzer) are more compatible with the innovation-driven goals of resource-constrained firms. This supports the argument made by Teece et al. (1997) that dynamic environments necessitate adaptive managerial capabilities for sustained competitive advantage.

6. Discussion

This study provides a comprehensive understanding of the relationship between DMCs and innovation performance, particularly in resource-constrained environments such as Iran. By integrating insights from recent research and categorizing managers into twelve distinct profiles based on their human, social, and cognitive capital, this study highlights the nuanced ways in which strategic alignment between managerial capabilities and business strategies fosters innovation. The findings reinforce the significance of strategic fit, indicating that the alignment of high-capability managerial profiles with exploration-driven strategies (e.g., prospector and analyzer) optimizes innovation performance.

6-1. Managerial Profiles and Innovation Outcomes

The categorization of managers into DMC profiles provides a practical framework for understanding how different configurations of managerial capabilities impact innovation. Profiles characterized by high levels of human and social capital, paired with cognitive flexibility, consistently drive superior innovation outcomes. For example, Type 11 managers (high in all three capabilities) excel under prospector and analyzer strategies, demonstrating the ability to leverage robust human resources and external networks for opportunity identification and exploitation. Similarly, Type 1 managers (high human and social capital, intuitive cognition) achieve strong results under prospector strategies but face challenges in strategies emphasizing cost efficiency or stability.

These findings advance prior research on DMCs by elucidating the interplay among the three components. While earlier studies have highlighted the independent roles of human capital, social capital, and cognition, this study underscores their synergistic effects in enabling managers to align strategic objectives with innovation-driven activities. Furthermore, the evidence aligns with theoretical models, such as the Resource-Based View and Dynamic Capabilities Theory, emphasizing the necessity of integrating resources and adapting them to dynamic market conditions (Helfat & Martin, 2015; Teece et al., 1997).

6-2. Challenges for Low-Capital Managerial Profiles

Managers with lower levels of human and social capital, such as Type 4 (low capital, intuitive cognition) and Type 8 (low capital, logical cognition), face significant challenges in driving innovation across all strategic orientations. The inability to build strong networks or access critical resources hampers their capacity to respond to environmental shifts, particularly under reactive strategies, where agility and resourcefulness are essential. These findings highlight the importance of targeted interventions, such as leadership development programs and network-building initiatives, to enhance the capabilities of low-capital managers.

Interestingly, Type 9 managers (low human capital, high social capital, balanced cognition) demonstrate moderate innovation performance, suggesting that strong social networks can partially offset skill deficits. This observation highlights the potential for leveraging external collaborations to mitigate internal resource limitations, particularly in environments where institutional constraints inhibit resource availability.

6-3. Strategic Fit and Innovation in Resource-Constrained Environments

The study emphasizes the crucial role of strategic alignment between managerial capabilities and business strategies, particularly in resource-constrained environments. In such contexts, prospector and analyzer strategies—which prioritize exploration and adaptation—are most effectively supported by managers with high levels of human and social capital and cognitive flexibility. This strategic fit enables firms to allocate limited resources effectively, fostering both radical and incremental innovation. The ANOVA analysis substantiates this alignment, indicating that Types 11 and 1 managers achieve the highest innovation performance under prospector and analyzer strategies.

Conversely, misalignment between managerial capabilities and strategic orientations results in suboptimal outcomes. For instance, assigning low-capability managers to prospector strategies often leads to strategic drift and poor innovation performance, emphasizing the necessity of matching managerial profiles to strategic demands. This finding supports the theoretical proposition that strategic coherence acts as a catalyst for innovation, particularly in volatile and uncertain markets.

6-4. Application to the Iranian Context and Emerging Markets

The findings are particularly pertinent to the Iranian context, where firms operate under unique economic and political challenges, including sanctions and resource constraints. In such settings, the development of robust internal capabilities and the cultivation of strong local networks emerge as critical strategies for fostering innovation. For example, leveraging domestic social capital can partially compensate for limited access to international partnerships, enabling firms to sustain innovation despite external barriers.

These insights are applicable beyond Iran to other emerging markets with similar challenges, such as Venezuela, Nigeria, or Indonesia. The emphasis on building internal capabilities and fostering external collaborations provides a replicable framework for driving innovation in resource-constrained environments, contributing to a broader understanding of DMCs across diverse institutional contexts.

6-5. Practical Implications for Managers and Policymakers

Based on the study's findings, managers should take deliberate steps to assess and develop their DMCs in alignment with their firm's strategic orientation.

For Managers:

- Conduct regular self-assessments or organizational audits of DMCs, focusing on human capital (skills, knowledge, experience), social capital (networks, relationships), and cognitive capabilities (decision-making styles). Leverage diagnostic tools or frameworks tailored to emerging market contexts to ensure the applicability of insights.
- Invest in targeted training and development programs that enhance both technical skills and cognitive flexibility. Specific training modules on navigating uncertainty, strategic decision-making, and scenario planning can enable managers to better respond to environmental volatility.

- Strengthen social networks by actively participating in industry associations, business forums, and collaborative projects with other firms. Given the importance of social capital identified in the study, managers in Iran should also prioritize building trust-based relationships within local ecosystems, such as chambers of commerce or entrepreneurial hubs.
- Ensure that managerial roles align with the firm's strategic orientation. For example, managers in prospector-oriented firms should possess high levels of human and social capital coupled with cognitive flexibility to drive exploration and innovation. Structured talent management processes can help in identifying and assigning managers to roles that maximize their capability profiles' impact.

For Policymakers:

- Implement policies that support managerial development programs, such as subsidies for executive education or incentives for firms that invest in leadership training. Specialized grants could be provided to firms that prioritize DMC development for innovation. In resource-constrained settings, publicly funded initiatives that focus on training managers in emerging markets can amplify their impact.
- Facilitate networking opportunities by organizing industry conferences, trade shows, and innovation hubs where managers can build social capital. Policymakers could also encourage cross-sector collaborations to share resources and best practices across industries.
- Provide platforms for knowledge sharing and collaboration, such as government-sponsored innovation labs or online portals that connect firms with research institutions and experts. These platforms should specifically target bridging local firms with global expertise, addressing the knowledge gaps identified in resource-limited environments.
- In the Iranian context, it is essential to streamline bureaucratic processes and address regulatory hurdles that hinder innovation. Policymakers should also consider creating programs that connect domestic firms with international experts, leveraging diaspora talent to enhance local managerial capabilities. Collaborative initiatives with countries facing similar challenges could provide shared learning opportunities and enhance regional innovation networks.

By implementing these actions, managers and policymakers can directly apply the study's findings to improve innovation performance.

Implementation Examples:

- A manufacturing firm in Iran could establish an internal leadership development program that integrates workshops on strategic thinking, creative problem-solving, and collaboration. These programs could be augmented with mentorship from experienced industry leaders to accelerate managerial learning.
- An Iranian technology startup could join or form a consortium with other local tech firms to share resources and knowledge, thereby expanding the social capital of its managers and fostering collaborative innovation.
- Policymakers might launch a national initiative aimed at fostering cross-border collaborations by connecting Iranian firms with professionals and organizations in other emerging markets. This could help in mitigating the effects of sanctions and limited access to global networks. For instance, partnerships with firms in Southeast Asia or sub-Saharan Africa could enable shared learning and resource pooling.

These recommendations not only address the unique challenges faced by firms in Iran but also provide a replicable framework for similar interventions in other emerging markets. By focusing on enhancing managerial capabilities and fostering strategic alignment, these actions can overcome institutional constraints and drive sustained innovation.

6-6. Limitations and Future Research Directions

While the findings of this study are robust, several limitations remain. First, the study's focus on Iran provides valuable localized insights but limits the generalizability of results to other contexts. Future research should explore whether similar DMC profiles and strategic alignments yield comparable innovation outcomes in other emerging markets, such as Southeast Asia or sub-Saharan Africa.

Comparative studies could identify whether the observed dynamics are context-specific or indicative of broader trends across emerging economies.

Additionally, this study employs cross-sectional data, which captures a snapshot of the interaction between DMCs and business strategies. Longitudinal research is required to examine how these relationships evolve over time, particularly in response to external shocks, such as technological disruptions or regulatory changes. This approach could provide deeper insights into the sustainability of DMC-driven innovation.

Finally, the study raises important questions about how external factors—such as government policies, market volatility, and technological disruptions—moderate the relationship between DMCs and innovation. Future studies could incorporate multilevel analyses to better understand how institutional and industry-specific factors influence DMC effectiveness. For example, researchers could investigate how digital transformation trends impact the cognitive capabilities required for innovation or examine the role of public-private partnerships in enhancing managerial social capital. Such studies would contribute to a more comprehensive framework for fostering innovation in both emerging and developed markets.

7. Conclusion

This study demonstrates the critical role of aligning DMCs with business strategies to drive innovation, particularly in resource-constrained environments like Iran. By categorizing managers into twelve distinct profiles, this research offers a nuanced understanding of how specific configurations of human, social, and cognitive capital influence innovation outcomes. As established in the literature, DMCs—especially the interplay among their three components—are essential for firms operating in dynamic and complex markets (Helfat & Peteraf, 2015). Our findings underscore that innovation is optimized when managerial resources are strategically aligned with organizational objectives, reaffirming the importance of a tailored approach to capability development.

These findings contribute to the growing body of literature on DMCs and innovation in emerging markets, offering both theoretical and practical insights. From a theoretical perspective, this research advances the understanding of how DMC profiles interact with different business strategies, particularly prospector and analyzer orientations, to foster innovation. From a practical perspective, it provides actionable recommendations for managers and policymakers to enhance innovation performance through targeted investments in managerial capability development and strategic alignment.

In the Iranian context, these insights are particularly pertinent due to the unique economic and political challenges faced by firms, including international sanctions, currency instability, and restricted access to global markets. By prioritizing internal capability development and leveraging local social networks, Iranian firms can overcome these constraints to drive innovation. For example, building robust networks within the domestic market can partially compensate for limited international partnerships.

These findings are not limited to Iran but extend to other emerging markets facing similar challenges, such as political instability, trade restrictions, and resource constraints. Firms in such contexts can adapt the recommendations by focusing on context-specific capability development and strategic coherence to foster innovation.

Future research should expand on these insights by exploring the impact of specific interventions on the development of DMCs and innovation performance over time. Longitudinal studies could examine how managerial capabilities evolve in response to external shocks, such as technological disruptions or regulatory changes, providing deeper insights into their long-term sustainability and effectiveness. Additionally, comparative studies across emerging markets could determine whether the observed dynamics are unique to Iran or broadly applicable, thereby contributing to a more comprehensive understanding of DMCs in diverse institutional contexts.

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