IRMM
INTERNATIONAL REVIEW OF MANAGEMENT AND MARKETING
EJ EconJournals
ISSN: 2146-4405

International Review of Management and Marketing

ISSN: 2146-4405

available at http: www.econjournals.com

International Review of Management and Marketing, 2025, 15(4), 93-102.

The Role of Strategic Leadership in Enhancing Innovation Performance in the Jordan Pharmaceutical Industry

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Received: 24 November 2024 **Accepted:** 08 May 2025 **DOI:** https://doi.org/10.32479/irmm.18340

ABSTRACT

Research on strategic leadership and innovation performance is well established, yet the dynamics within the highly regulated and innovation-driven pharmaceutical industry remain underexplored. This study addresses this gap by examining how strategic leadership influences innovation performance in Jordan's pharmaceutical manufacturing sector. A survey was conducted among 500 managers across 12 pharmaceutical manufacturing companies in Jordan to investigate these relationships. The data was analyzed using regression statistics to evaluate the strength and nature of the connections between strategic leadership dimensions and innovation performance. The findings confirm that strategic direction setting, human capital development, organizational control development, and strategic implementation are all critical drivers of innovation performance. These dimensions enhance innovation across multiple business areas, such as product development, process efficiency, and marketing strategies, thereby improving organizational competitiveness. Strategic leadership emerges as a vital enabler in the dynamic pharmaceutical landscape by fostering adaptability to market changes, addressing customer demands, and ensuring long-term sustainability. This study provides a framework for measuring the impact of strategic leadership on innovation performance in pharmaceutical manufacturing companies. It contributes to the existing literature by expanding our understanding of leadership's role in driving innovation and offers valuable managerial implications for achieving sustainable growth through enhanced innovation practices.

Keywords: Strategic Leadership, Innovation Performance, Pharmaceutical Manufacturing, Jordan
JEL Classifications: C120, C1, M

1. INTRODUCTION

Organizations increasingly rely on strategic leadership to address critical challenges in highly regulated and innovation-driven industries like pharmaceuticals. One emerging area where leadership plays a pivotal role in fostering innovation performance includes product, process, marketing, and organizational innovation. As a cornerstone of global healthcare systems, the pharmaceutical industry is uniquely positioned to leverage strategic leadership to enhance its innovation capabilities. By doing so, companies can adapt to market dynamics, meet evolving healthcare demands, and ensure sustainable growth while addressing regulatory compliance and competitive pressures (Yegros-Yegros et al., 2020; Takawira et al., 2022).

Innovation performance in the pharmaceutical industry is underpinned by strategic leadership capabilities—establishing a clear direction, fostering human capital, implementing organizational controls, and translating strategies into actionable initiatives. These leadership dimensions empower pharmaceutical companies to tackle complex challenges, including improving R&D efficiency, addressing quality concerns, and increasing global competitiveness (Amayreh, 2020; Ashal et al., 2023). For instance, strategic leadership facilitates the development of innovative products and processes that meet regulatory standards and customer needs, transforming leadership insights into measurable outcomes. However, achieving these innovation goals requires robust organizational frameworks that align leadership practices with innovation objectives (Kılıç, 2022; Takawira et al., 2023).

In this context, strategic leadership emerges as a critical enabler of innovation performance. By integrating leadership strategies focused on human capital development, organizational alignment, and strategic execution, pharmaceutical companies can foster a culture of innovation and resilience. For example, strategic direction setting helps organizations prioritize R&D initiatives, while human capital development ensures employees possess the skills needed for innovative problem-solving. These leadership practices drive innovation outcomes and address industry-wide challenges such as resource inefficiencies and global competition (Masadeh et al., 2023; Mutunga et al., 2024).

Despite its potential, strategic leadership's role in advancing innovation performance within the pharmaceutical sector remains underexplored, particularly in emerging markets like Jordan. Most existing studies emphasize general performance metrics or leadership styles, overlooking the mechanisms through which strategic leadership enhances innovation outcomes in less mature industrial ecosystems (Rıfat and Canbolat, 2021; Alkheyi et al., 2020). Additionally, the interplay between different leadership dimensions and innovation performance has not been adequately examined, presenting a critical gap in the literature.

This study seeks to address these gaps by exploring the impact of strategic leadership on innovation performance in Jordanian pharmaceutical manufacturing companies. Grounded in theoretical frameworks such as the Resource-Based View (RBV) and Dynamic Capabilities View, this research investigates how leadership dimensions—strategic direction setting, human capital development, organizational controls, and strategic implementation—contribute to innovation performance. Specifically, it addresses the following research questions:

1. How does strategic leadership influence innovation performance in the pharmaceutical sector?
2. To what extent do individual leadership dimensions drive product, process, marketing, and organizational innovation?
3. What is the combined impact of strategic leadership dimensions on innovation performance?

This study, by answering these questions, contributes to understanding how leadership practices foster innovation in the pharmaceutical industry. It offers novel insights into leveraging strategic leadership as a transformative tool, enabling pharmaceutical companies to align with global healthcare needs and maintain a competitive edge in dynamic markets.

2. LITERATURE REVIEW

2.1. The Pharmaceutical Manufacturing Sector in Jordan

The pharmaceutical manufacturing sector in Jordan has shown local and global success stories, yet the innovation performance falls below expectations. Existing studies have extensively explored the challenges encountered by pharmaceutical manufacturing companies in enhancing innovation and performance (Ashal et al., 2023; Eneim, 2019). However, there is no evidence for empirical studies investigating factors that may influence the innovation performance among Jordan pharmaceutical manufacturing companies. Empirical studies have highlighted strategic leadership's crucial role in enhancing pharmaceutical manufacturing firms' innovation performance (Mutunga et al., 2024). Therefore, a focused empirical study on strategic leadership and innovation performance in the pharmaceutical manufacturing sector in Jordan could offer valuable insights to scholars, practitioners, and companies in this industry, aiding in developing effective strategies to foster innovation and achieve competitive advantage.

Consequently, most of Jordan's pharmaceutical manufacturing companies, especially those on the verge of becoming multinational or international in scope, find their strategic leadership practices challenging and complex. Therefore, a clear strategic vision, the development of human capital, the building of core competencies, and adequate strategy implementation could be essential in speeding up the innovation performance of pharmaceutical manufacturing companies.

Pharmaceutical manufacturing companies in Jordan have encountered several challenges in resource use efficiency and production-related challenges to underperformance and quality issues (Ashal et al., 2023). These companies also face competitiveness challenges hindering their market penetration within and outside Jordan County (Ashal et al., 2023; Masadeh et al., 2023). A study by Eneim (2019) highlighted that the Jordanian pharmaceutical manufacturing sector faces significant challenges and intense competition from international companies, impacting innovation performance. Despite these challenges, initiatives are underway to promote innovation. Strategic leaders in Jordan's pharmaceutical sector must prioritize fostering a culture of open innovation to ensure long-term competitiveness in both domestic and global markets.

While strategic issues are typically higher than daily operations, the link between strategic leadership competencies and innovation performance is vital. Studies in Jordan emphasize the significance of innovation for pharmaceutical manufacturing companies, with research showing that strategic leadership impacts product innovation and significantly improves their competition (Amayreh, 2020; Ashal et al., 2023). The study's findings fill the void in the literature over the role of strategic leadership and its four sub-dimensions of leadership variables (strategic direction setting, human capital development, organizational controls development, and strategic implementation) and innovation performance of pharmaceutical manufacturing companies in Jordan. More importantly, it provides the first empirical insights into how strategic leadership influences the innovation performance of pharmaceutical manufacturing companies.

2.2. Strategic Leadership

In the literature, there are different opinions on whether strategic leadership is a separate type of leadership or not. Strategic leadership is distinct from transformational and instructional leadership, focusing on senior decision-makers. It is considered a crucial trait across all leadership styles, emphasizing the importance of strategic thinking and decision-

making in guiding organizations (Kılıç, 2022). It involves both the formulation and execution of strategies aimed at achieving a sustainable competitive advantage. Chummun and Nleya (2021) consider strategic leadership a separate type of leadership and state that it caters to top management, highlighting its unique role in setting organizational direction and ensuring long-term success. It simply states that it plays a major role in developing a clear strategic vision, building core competencies, developing human capital, and implementing organizational controls and strategies.

Strategic leadership encompasses many dimensions essential for attaining organizational success (Al- lawatia et al., 2021; Takawira and Mutambara, 2023). These dimensions encompass strategic direction setting: Articulating the organization's long-term vision and objectives, ensuring that all initiatives are synchronized with a lucid and cohesive strategy. Such articulation establishes the groundwork for informed decision-making and prioritizes actions that foster success. Human Capital Development: This dimension emphasizes attracting, cultivating, and retaining high-caliber talent. It necessitates investment in training programs and the promotion of a culture of continuous learning to guarantee that the organization possesses the requisite skills and expertise to innovate and compete effectively. Organizational Controls Development: This aspect involves establishing systems and processes designed to monitor and manage the organization's performance. These controls ensure that resources are utilized efficiently, risks are mitigated, and the organization remains aligned with its strategic objectives. Strategic Implementation: This process entails converting strategic plans into concrete actions, aligning resources accordingly, and overseeing execution. It guarantees that strategies are executed effectively to realize the intended outcomes and to adapt to evolving circumstances (Chummun and Nleya2021; Wakhisi, 2021; Alkheyi et al., 2020).

Despite the growing body of literature on strategic leadership, several gaps and challenges remain, particularly in the context of the pharmaceutical industry. Much of the existing research has been conducted in diverse contexts, limiting its applicability to the pharmaceutical sector, where strategic leadership is crucial for guiding companies toward long-term success. In this industry, strategic leaders are responsible for setting development directions and goals, making their role a central focus for research and practice (Samimi et al., 2020; Takawira et al., 2022). Additionally, there is a need for more studies to focus on examining how strategic planning, process simplification, culture management, and human resource development shape competitive outcomes in a changing industry (Takawira et al., 2022).

Moreover, a strategic leader is expected to play a significant role in driving the innovation and sustainability of pharmaceutical manufacturing companies (Takawira et al., 2023). Strategic leaders are also known for creating a shared vision and inspiring others to commit to achieving organizational goals. This leadership style emphasizes the importance of establishing a clear vision, mission, and strategic goals, which positively influence the organizational performance of pharmaceutical manufacturing companies (Masadeh et al., 2024). Therefore, leaders' establishing a unifying vision and strategic direction is essential for fostering innovation and driving overall organizational performance in the pharmaceutical manufacturing industry.

The global pharmaceutical industry is undergoing significant transformations due to various challenges. Companies face regulatory changes, technological advancements, and increasing demands for innovative healthcare solutions (Romasanta et al., 2023). Globally, exemplary companies like Pfizer and Johnson and Johnson have faced scrutiny for their practices. These companies are known for their marketing effectiveness and commitment to innovation and have demonstrated the impact of strategic leadership on their sustained success (Festa et al., 2021). Therefore, this literature review emphasizes the critical role of strategic leadership in driving innovation performance and underscores the need for further research to address existing gaps and challenges. Such research is essential for ensuring stable business conditions within the pharmaceutical sector.

2.3. Transformation Leadership Theory

Transformational leaders can play a significant role in manufacturing companies due to the nature of performance, which focuses on innovation, efficiency, and flexibility. Transformational leaders focus on development, organizational vision, and alignment with the organization's environment leadership. Such leaders develop an environment of continuous improvement and employees' creative thinking for success in the company (Kılıç, 2022). the transformational leadership theory suggests that strategic leadership bears the greatest responsibility of crafting the vision for the company, building relationships among employees to drive a team spirit, and navigating a company through all dynamics to realize the overall goal (Mutunga et al., 2024). In the current study, transformational leadership theory contributes to understanding what makes a good leader. It stresses the need for developing a clear strategic vision, building core competencies, and strategic implementation. The importance of strategic leadership reveals itself through the focus on sculpturing the organization's culture and harmonizing inner endeavors with external aims. This research delves into the limitations of its application or acceptability within the conceptualization of strategic leadership and the innovation performance of pharmaceutical manufacturing companies in Jordan County.

2.4. Innovation Performance

Innovation performance is critical for companies to identify potential technologies, enhance the quality of products and services, and increase the value of their offerings to customers. This, in turn, helps attract new customers (Sulton et al., 2022). Innovation performance results from the organizational management's policies that support an innovative environment and should be evaluated in light of its role (Fleaca, 2018). Organizations often invest significant time, money, and other resources to pursue innovative opportunities. Innovation performance can enhance their competitive edge in the long term, thus maintaining a dynamic business environment (Kılıç, 2022). In a slightly different way, innovation performance can be understood as the ability to transform innovation inputs into outcomes and, thus, transform innovation capacity and effort into market implementation (Zizlavsky, 2016). However, it will be understood that while the

importance of the concept of innovation performance is generally accepted, it would be difficult to establish a generally accepted definition and the challenges in finding relevant variables to measure it (Muller and Peres, 2019).

Innovation performance is a key indicator for companies to assess their technological advancements, product and service quality, and market competitiveness. It is influenced by various factors, including management policies, and can be evaluated through criteria such as new patents, products, processes, and organizational arrangements (Freixanet & Federo 2022; Gök and Peker, 2017). Innovation performance is often defined in broad terms to include both the introduction of new products/services to the market and the improvement of existing ones, which can lead to significant changes in business performance (Rajapathirana et al., 2018; Tang et al., 2020; Zizlavsky, 2016). It also focuses on the technical aspects of innovation and its market introduction (Zizlavsky, 2016).

The literature identifies several typologies of innovation: product and process innovation, radical and incremental innovation, and organizational and technical innovation (Escrig-Tena et al., 2018). Product innovation refers to introducing new products or services to meet customer needs, while process innovation involves introducing new methods in production or service operations (Escrig-Tena et al., 2018). Radical innovations result in major changes to products or services, while incremental innovations bring gradual improvements (Andersson et al., 2020).

Innovation performance is typically measured through objective and subjective indicators. Objective measures include financial metrics (e.g., sales revenue, profit) and operational metrics (e.g., number of new products, patents, process improvements) (Duan et al., 2020; Muller and Peres, 2019; Wang et al., 2018). For instance, patent creation data has been used as a measure of innovation performance (Wang et al., 2018), while Duan et al. (2020) used return on intangible assets to capture the value of innovations. However, these objective measures may be limited, as they do not reflect the overall innovation performance of a firm (Zizlavsky, 2016).

Subjective measures are also employed to evaluate innovation performance, mainly when objective data is unavailable or difficult to obtain. Studies have used subjective assessments from managers or executives to evaluate innovations regarding new or improved products/services and processes and a company's ability to respond to industry trends (Mennens et al., 2018). These subjective measures can offer a more holistic view of innovation, especially when objective data, like financial performance or patent counts, is not easily accessible (Kamasak et al., 2016).

The measurements of innovation performance can be categorized into product and process innovation, organizational, and marketing innovation, each with specific indicators (Table 1). Scholars affirm that product and process innovation is assessed by metrics such as the rate of new product or service introductions, the success rate of new products, sales proportion from new products, and the degree of market differentiation (Freixanet & Federo 2022; Mennens et al., 2018). Several studies show that other indicators include introducing new products, improving existing processes, exploring new markets, and speeding to market (Kamasak et al., 2016). Also, the literature shows that organizational innovation involves changes in the company's structure, management practices, or internal processes to improve efficiency. Moreover, marketing innovation, on the other hand, focuses on developing new marketing strategies, including how a product or service is promoted, priced, and distributed to meet customer needs more effectively (Kamasak et al., 2016).

Additionally, innovation is evaluated through improvements in quality/process control systems, planning procedures, and administrative structure (Shahzad et al., 2019). Overall, these measures provide a comprehensive view of innovation performance, focusing on the development, success, novelty, and speed of new products/services and technological and process advancements. Combining objective and subjective measures provides a more comprehensive understanding of innovation performance, particularly in SMEs and emerging-market firms, where access to objective data might be limited (Ibidunni et al., 2020). The study applies a more holistic dimension of innovation performance by employing four innovation measures, product, process, marketing, and organizational innovation, to indicate firms' preference for strategic innovation input choice.

2.5. Empirical Studies on Strategic Leadership and Innovation Performance

Many scholars have found that diverse aspects of strategic leadership are critical for innovation performance. Mutunga et al. (2024) determine the influence of strategic leadership on the performance of pharmaceutical manufacturing companies in Nairobi County. The study comprised 71 pharmaceutical manufacturing companies in Nairobi County, which served as the unit of analysis. The study concluded that strategic leadership positively and significantly influenced the performance of pharmaceutical companies in Nairobi County. The study was, however, limited to a direct relationship between the variables without considering other variables that could indirectly impact the relationship.

Kılıç (2022) researched the complicated link between strategic leadership and innovative performance in the production sector in Istanbul, Turkey. The study adopted a quantitative approach whereby 345 white-collar workers filled in a questionnaire between May and August 2021. The innovation performance was highly related on one side, especially with transformational political leadership sub-dimensions. This study provides valuable insights into the complex connection between strategic leadership and innovation in this manufacturing sector. Engelsberger et al. (2023) examined the role of strategic human resource management in managing employees and supporting their capacity for innovation in high-tech firms. The authors examine the mediating role of an open innovation mindset on the relationship between SHRM and open innovation performance. These findings demonstrate the utility of an open innovation mindset and the important role of SHRM in predicting open innovation performance.

Table 1: Studies on innovation performance subjective measurements

Framework category	Measurements areas/items	Authors
Product and Process	• New product/service introduction rate • First to market with new application • Degree of new product/service differentiation	Freixanet & Federo (2022)
Product and Process	• Give an important competitive advance new services • Superior to those of the competitor stage	Mennens et al. (2018)
Product, marketing, and process	• Introduced new products • Improved existing processes • Explored a new market	Zhang et al. (2020)
Product and process; managerial and technical	• Product Innovation • Technological Innovation • Sales growth	Seo et al. (2019)
Managerial and technical	• Quality of new products or services • Performance Technological competitiveness • Speed of introducing new products or services • Novelty of new product or service	Rajapathirana et al. (2018)
Product and Process	• Success of new products launched • Accelerated speed to market • Number of new product configurations • Improved work methods and processes	Kamasak et al. (2016).
Managerial and technical	• Proportion of annual turnover of new products • New products index • Modified products index patent growth rate	Xie et al. (2018)
Product, marketing, and process	• Developing new products to meet customers' needs • The number of innovations (new products) • Increases over the last 3 years	Song et al. (2019)
Product and Process	• Product innovation • Process innovation	Escrig-Tena et al. (2021)
Product and process; managerial and technical	• Introduction of significantly improved product • Innovation in quality/process control system • Innovation in planning procedures • Innovation in administrative structure	Shahzad et al. (2019)
Product and Process	• Develop new products/services with speed • Launch new products/services on time • Introduced several changes in business processes in the past year. • Quick response to the new processes introduced by competitors within our industry	Tian et al. (2021)
Product and Process	• The number of new products or services; • The speed of new product or service development; • The success rate of new product or service development; • The number of patent applications; and (6) the novelty of new products	Lu et al. (2021)

Lim and Song (2022) examined the effects of leadership, contingent on value innovation, on financial performance among Chinese SMEs engaged in manufacturing. This led to a positive relationship concerning overall financial performance between leadership and value innovation. It demonstrated that product innovation is a mediating variable between management and financial outcome, but business model innovation does not mediate management–finance relations.

Pasaribu et al. (2021) examined the effect of strategic leadership and organizational innovation on strategic management. They introduced a new mechanism for evaluating the mediational role of the organization's IT capability. The study's findings revealed that organizational innovation, strategic leadership, and IT capability are important antecedents of strategic management.

Takawira et al. (2022) examined how strategic leadership can keep a Durban pharmaceutical company competitive in a changing industry. This study confirms that strategic leadership involves establishing a course of action, dealing with business complexities, advocating for a new organizational structure, shaping the company's culture, and developing its human resources. Research about strategic leadership helps pharmaceutical companies build internal capabilities and adapt to a changing market.

Wakhisi (2021) examined how strategic leadership affects the performance of state-owned sugar manufacturing firms in Western Kenya. The study established a statistically significant correlation between strategic leadership and organizational performance.

Alkheyi et al. (2020) identify the relationships between strategic leadership practices, knowledge sharing, and team effectiveness in the Municipalities in UAE. The study revealed that strategic leadership practices significantly affect knowledge sharing and team effectiveness. Besides, strategic leadership practice affects team effectiveness through knowledge sharing, and knowledge sharing significantly affects team effectiveness.

In light of the preceding discussion, this paper intends to contribute to advancing the theoretical analysis of innovation performance. It aims to empirically investigate and examine the relationships between various strategic leadership and innovation performance. The hypotheses and research model determined in light of all these explanations are shown in Figure 1.

H_1: Strategic direction setting positively affects the innovation performance of pharmaceutical manufacturing companies in Jordan.
H_2: Human capital development positively affects the innovation performance of pharmaceutical manufacturing companies in Jordan.
H_3: Organizational control development positively affects the innovation performance of pharmaceutical manufacturing companies in Jordan.
H_4: Strategic implementation positively affects the innovation performance of pharmaceutical manufacturing companies in Jordan.

3. RESEARCH METHODOLOGY

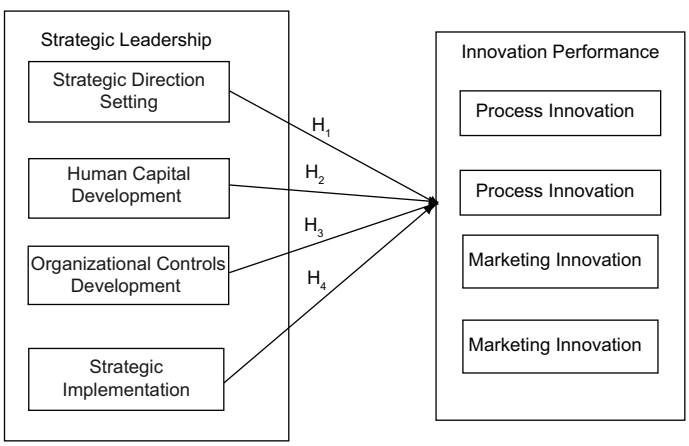
3.1. Research Design

The study adopted a quantitative research methodology to examine the impact of strategic leadership and its various dimensions on innovation performance in Jordanian pharmaceutical companies. A cross-sectional survey was used for data collection developed explicitly for this study based on a review of the literature and previous studies such as Chummun and Nleya (2021), Wakhisi (2021), Alkheyi et al. (2020), and Sulton and Sawabi (2022). The questionnaire consisted of three sections: demographic data, strategic leadership dimensions, and innovation performance dimensions. The strategic leadership section included 18 questions for each of the four dimensions. Similarly, the innovation performance section included 16 questions, with four questions for each dimension. All questions were measured using a five-point Likert scale, ranging from 1 = "Strongly disagree" to 5 = "Strongly agree".

3.2. Sample

The study population included 12 pharmaceutical companies operating in Jordan, employing approximately 15,112 employees.

Figure 1: The hypotheses and research model



Data from senior and middle managers were collected to understand their perceptions of strategic leadership and innovation performance.

3.3. Data Collection

The questionnaire was randomly distributed to 500 managers in paper and electronic formats from June 13, 2024, to August 30, 2024. A total of 422 questionnaires were returned. The survey response rate is 84.4% (422/500). After data review and cleaning, 16 incomplete or invalid questionnaires were excluded, resulting in a final sample of 406 valid questionnaires for analysis, representing a response rate of 81.2%. Most participants are male (63.5%) and aged between 35 and 55 (53.9%), reflecting a balance of experience in senior and middle management roles. Most managers hold advanced degrees (72.7%), and 36.5% have over 20 years of experience, indicating high academic and professional expertise. Additionally, 25.9% have less than 5 years of experience, highlighting the presence of younger managers in the sector. This demographic breakdown provides an important context for understanding the relationship between strategic leadership and creative performance in the industry (Table 2).

3.4. Reliability of the Instrument

To ensure the validity of the study instrument, the questionnaire was reviewed by ten academic experts in the field of management, strategic leadership, and innovation performance to assess its formulation and comprehensiveness. Based on their feedback, some phrases were revised to ensure their appropriateness. The reliability of the instrument was also tested using Cronbach's Alpha. A pilot survey was conducted on a sample of 50 managers, and the results showed that the Cronbach's alpha values for all studied variables exceeded the acceptable thresholds, indicating the high reliability of the instrument. The results shown in Table 3 indicate that all Cronbach's Alpha values exceeded the accepted threshold of 0.7, demonstrating a high level of internal consistency. The highest reliability value was found in the "Strategic Direction Setting" dimension (0.934), indicating strong internal consistency among the items in this dimension.

The remaining dimensions, related to strategic leadership and innovation performance, also showed high reliability, ranging from 0.804 to 0.897, further enhancing the instrument's reliability. Based on these results, the study instrument can be confidently relied upon for data collection and analysis, as the results affirm its ability to measure the targeted variables accurately and reliably. This high level of reliability indicates the quality of the questionnaire design and its appropriateness for achieving the study's objectives.

3.5. Data Analysis

Data analysis will use a Statistical Package for Social Sciences (SPSS), for coding and data entry into analysis. Analysis techniques will involve descriptive and inferential analysis to test the study hypotheses. Descriptive analysis will involve calculating mean, frequency, standard deviation, and frequency to describe the characteristics of the study sample using SPSS. On the other hand, the inferential analysis will involve the test of the direct

and indirect relationship using linear regression analysis through the SPSS.

Table 2: Demographic and professional information of participants

Variable	Category	Count	Percentage
Gender	Male	258	63.5
	Female	148	36.5
	Total	406	100
Age	<25 years	11	2.7
	From 25 to<35 years	102	25.1
	From 35 to<45 years	109	26.8
	From 45 to<55 years	110	27.1
	Over 55 years	74	18.2
	Total	406	100
Education level	Bachelor's or less	74	18.2
	Higher Diploma	37	9.1
	Master's	147	36.2
	PhD	148	36.5
	Total	406	100
Years of experience	<5 years	105	25.9
	From 5 to 10 years	10	2.5
	From 10 to 15 years	70	17.2
	From 15 to 20 years	73	18.0
	More than 20 years	148	36.5
	Total	406	100

Table 3: Reliability test results for the dimensions of the studied variables

Variables	Dimensions	Number of items	Cronbach's alpha
Strategic Leadership	Strategic Direction Setting	5	0.934
	Human Capital Development	3	0.822
	Organizational Controls Development	3	0.864
	Strategic Implementation	7	0.889
Innovation Performance	Process innovation	4	0.897
	Product innovation	4	0.804
	Marketing innovation	4	0.884
	Organizational innovation	4	0.854

Table 4: Mean and standard deviation of the variables

Variables	Dimensions	Number of items	Cronbach's alpha
Strategic Leadership	Strategic Direction Setting	3.71	1.22
	Human Capital Development	3.37	1.41
	Organizational Controls Development	3.78	1.24
	Strategic Implementation	3.30	1.24
Innovation Performance	Process innovation	4.18	1.03
	Product innovation	3.64	1.08
	Marketing innovation	3.65	1.07
	Organizational innovation	4.00	1.05

4. RESULTS

4.1. Descriptive Analysis

The statistical analysis (Table 4) shows varying levels of strategic leadership application in Jordanian pharmaceutical companies. "Organizational Controls Development" ranked highest (3.78), followed by "Strategic Direction Setting" (3.71), both showing strong recognition of their importance. "Human Capital Development" (3.37) indicates a need for more focus on training, and "Strategic Implementation" ranked lowest (3.30), highlighting challenges in translating strategy into actions. Overall, the results show positive recognition of strategic leadership, but improvements are needed in human capital development and execution. Table 4 also shows varying levels of innovation performance in Jordanian pharmaceutical companies. Process innovation had the highest mean (4.18), indicating a strong focus on improving efficiency, while product and organizational innovation both scored 3.64, reflecting efforts in product development and enhancing organizational flexibility. Marketing innovation had a mean of 4.00, showing the adoption of innovative marketing techniques. Despite positive results, there was slight variation in perceptions and application across the dimensions, highlighting the need to enhance organizational flexibility, human capabilities, and marketing skills for sustainable competitive advantage.

4.2. Regression Results

Table 5 presents the results of a statistical analysis, revealing a statistically significant relationship between strategic direction setting and innovation performance in Jordanian pharmaceutical companies. The findings indicate a strong positive correlation with a beta coefficient (β) of 0.588, a t-value of 14.618, and a P = 0.000, well below the 0.05 significance level. In addition, a significant relationship was found between human capital development and innovation performance (β = 0.540, t-value = 12.912, P = 0.000), highlighting the importance of investing in employee development for driving innovation. Table 5 demonstrates a statistically significant relationship between organizational control development and creative performance (β = 0.234, t-value = 4.837, P = 0.000), indicating a moderate positive relationship. Organizational controls, such as systems, policies, and procedures, play a vital role in ensuring that innovation processes are aligned with company goals and are executed efficiently. Finally, a significant relationship between strategic implementation and creative performance was identified (β = 0.828, t-value = 29.663, P = 0.000), which indicates a strong positive relationship.

Table 5: Results of hypotheses testing

Hypotheses	Statement	Beta	t value	P values	Decision
H_1	Strategic Direction Setting -> Innovation performance	0.588	14.618	0.000	Accepted
H_2	Human Capital Development -> Innovation performance	0.540	12.912	0.000	Accepted
H_3	Organizational Controls Development -> Innovation performance	0.234	4.837	0.000	Accepted
H_4	Strategic Implementation -> Innovation performance	0.828	29.663	0.000	Accepted

5. CONCLUSION, DISCUSSION AND IMPLICATIONS

This study highlights strategic leadership as a comprehensive framework for enhancing innovation performance in Jordanian pharmaceutical companies. Companies can create a culture of innovation and sustain long-term success by focusing on key dimensions such as strategic direction setting, human capital development, organizational controls, and strategic implementation. The findings offer valuable insights for managers and policymakers, emphasizing the need for targeted strategies that leverage leadership capabilities to drive innovation. These results contribute to theoretical and practical understanding as a foundation for future research and actionable change in the pharmaceutical sector.

5.1. Discussion

The findings confirm that strategic leadership is pivotal in fostering innovation performance, particularly in Jordan's dynamic pharmaceutical industry. Strategic direction setting emerged as a key dimension, providing a clear roadmap for addressing challenges and capitalizing on future opportunities. This supports the Resource-Based View (RBV), which posits that unique organizational capabilities, such as strategic vision, can lead to a sustainable competitive advantage (Barney, 1991). The study highlights that a well-defined strategic direction enables efficient resource allocation and alignment with organizational goals, ultimately improving innovation outcomes.

Human capital development was another essential factor influencing innovation performance. Pharmaceutical companies can foster an environment that supports innovative problem-solving and growth by investing in employees' skills, knowledge, and creativity. These findings align with Becker's (1993) Human Capital Theory, which emphasizes the value of developing human resources to achieve long-term organizational success. Human capital initiatives, such as training and continuous learning, significantly enhanced employees' ability to contribute to innovation.

The study also revealed that organizational controls align employee behavior with strategic objectives while fostering a culture of creativity and calculated risk-taking. These findings are consistent with the perspective of Flamholtz et al. (1985), which highlights the importance of regulatory frameworks in driving innovation while maintaining compliance. For Jordanian pharmaceutical companies, adequate organizational controls balance innovation needs with regulatory requirements, providing a structured approach to creativity.

Finally, strategic implementation was identified as the most critical element in achieving innovation performance goals. This dimension involves translating strategic plans into actionable initiatives, fostering interdepartmental collaboration, and facilitating the exchange of ideas. The findings support Hitt et al.'s (2007) assertion that effective strategy execution enhances innovation outcomes across products, processes, and marketing strategies. For pharmaceutical companies, strategic implementation ensures that plans are well-formulated and effectively executed, creating an environment conducive to innovation.

The results collectively underscore the multifaceted impact of strategic leadership on innovation performance, providing a framework for understanding how these dimensions interact to drive organizational success.

5.2. Implications

5.2.1. Theoretical implications

This study extends the theoretical understanding of strategic leadership by integrating its dimensions into the context of innovation performance in the pharmaceutical industry. It bridges the gap between abstract frameworks like the Resource-Based View and their practical application, offering a robust foundation for future research. The findings also contribute to the dynamic capabilities perspective by demonstrating how leadership dimensions enable organizations to adapt to changing market conditions and foster innovation.

Furthermore, the study develops a comprehensive model linking strategic leadership with innovation outcomes. This model provides a structured approach to examining how leadership practices influence various aspects of innovation, serving as a valuable framework for future research in leadership and innovation performance.

5.2.2. Practical implications

The findings offer actionable recommendations for pharmaceutical companies, managers, and policymakers.

1. Strategic Direction Setting: Managers should prioritize clear and actionable strategic goals that align with the organizational vision and market trends. A strong strategic direction ensures efficient resource allocation and effectively guides innovation efforts.
2. Human Capital Development: Investing in employees' skills and knowledge fosters innovation. Training programs and continuous learning opportunities should be integral to organizational strategies to enhance employees' ability to contribute to innovative solutions.
3. Organizational Controls: Companies should develop flexible yet robust regulatory frameworks that encourage creativity while maintaining alignment with strategic objectives. Effective controls ensure compliance and create an environment conducive to calculated risk-taking and innovation.
4. Strategic Implementation: Managers must focus on the seamless execution of strategies, ensuring that plans are translated into actionable outcomes. This involves fostering collaboration across departments and providing the resources needed for successful implementation.

For policymakers, the findings highlight the need for supportive policies and incentives that enable pharmaceutical companies to implement strategic leadership practices. Providing resources and training opportunities can further enhance innovation performance across the sector.

5.3. Study Limitations and Future Research Directions

While this study provides valuable insights, it is not without limitations. The focus on Jordanian pharmaceutical companies may restrict the generalizability of the findings to other cultural and industrial contexts, highlighting the need for future research to expand the scope to include diverse geographic and industry settings. Additionally, the reliance on quantitative methods limits the depth of understanding regarding the dynamics between leadership and innovation. Qualitative approaches like case studies or interviews could provide more nuanced insights in future studies. This research primarily examines leadership dimensions but does not explore the impact of external factors, such as market dynamics, technological advancements, or economic influences. Future studies should address these variables to develop a more comprehensive understanding of innovation performance. Furthermore, given the dynamic nature of leadership and innovation, longitudinal studies are essential to observe how these relationships evolve over time and in response to changing market conditions.

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