

Strategic Orientation and Logistics Agility in Pharmaceutical Supply Chains: The Moderating Role of Environmental Uncertainty

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Abstract. The present research lies within the context of increased attention to the development of supply chain responsiveness in the volatile setting, especially in the pharmaceutical manufacturing business. Although a considerable body of literature has been done on strategic orientation and organisational performance, very little focus has been on how the environmental uncertainty influences the relationship between strategic orientation and logistics agility, particularly in emerging markets like Jordan. Based on this, the first aim of this research is to investigate the moderating effect of environmental uncertainty on the correlation between strategic orientation and logistics agility in pharmaceutical manufacturing businesses in Jordan. Strategic orientation can be operationalised in various dimensions such as market orientation, innovation orientation, customer orientation, technology orientation, and learning and growth orientation. The use of a quantitative research design was used to meet this objective. The data were gathered employing a self-administered questionnaire which was given to 177 production and supply chain managers operated in the Jordanian pharmaceutical manufacturing companies. The data gathered was filtered and processed on SPSS to test the hypotheses proposed and perform a correlation analysis between variables. The results indicate that strategic orientation is a significant factor in ensuring logistics agility; this implies that companies with multifaceted strategic orientations are in a better position to react promptly to the changes in the market. Moreover, the findings validate that the environmental uncertainty is a key moderating factor that enhances the correlation between strategic orientation and logistics agility in dynamic environments. The paper advances the body of research by adding to the strategic orientation-logistics agility nexus the uncertainty of the environment as a factor that shapes the internal strategic capabilities. Practically, the research highlights the need to ensure that managers develop a culture that is customer-oriented, proactively seek customer feedback, and optimize logistics as a strategy that aligns with the dynamic market needs. These practices have the potential to make organizations more responsive, increase the quality-of-service delivery and competitive positioning in the volatile settings.

Keywords: Strategic Orientation, Logistics Agility, Environmental Uncertainty, Market Orientation, Innovation Orientation, Customer Orientation, Technology Orientation and Learning and Growth Orientation.

1. Introduction

The issue of environmental uncertainty greatly affects logistics and strategic management since it poses unpredictable external circumstances that companies have to deal with. According to Kim et al. (2024) and Nazifa et al. (2019), in a very uncertain environment, a company experiences difficulties in demand forecasting, the supply chain, and the efficient operation of the corporation because of political instability, a change in the market demand, or a change in technology. This uncertainty may cause delays, cost increment, and challenges in the logistics operations since organizations cannot foresee what is going to happen in the future and act proactively (Hernes et al., 2025).

Nguyen et al. (2024) noted that in strategic management terms, environmental uncertainty demands firms to employ strategies that are more lenient and prone to changes. Organizations might have to increase supplier diversity, invest in real time data analytics, or implement contingencies in order to eliminate threats posed by unexpected external events. The result of such strategic flexibility is that companies are able to adapt to the sudden change in their operations and market strategies swiftly hence remaining competitive in the environment which is characterized by instability (Sony et al., 2023).

According to Nazifa et al. (2019) the environmental uncertainty has a bearing on the way organizations allocate resources. Companies may invest more in technology and information systems which increase visibility and responsiveness throughout the supply chain. These investments help to make better decisions and help organizations to be very responsive to unexpected disruptions (Abu-Dabaseh et al., 2025). Consequently, strategic management is more dynamic and focuses more on agility and robustness to continue with operations in unpredictable circumstances (Mueller-Saegebrecht & Walter, 2025).

From another perspective, Patrucco et al. (2023) stated that environmental uncertainty is a threat and an opportunity to logistics and strategic management. On the one hand, it poses risks; while on the other hand, it makes organizations more innovative and creates stronger, more flexible courses of action (Awamleh et al., 2024a). This means that by being aware and responding to these external forces, the companies would be in a better position to take advantage of the new opportunities and to respond to any form of disruption, thus leading to their long-term success in the ever-changing environment (Kuhlmann et al., 2023).

In light of the above argument and problem statement this study was carried out in order to examine the moderating influence of environmental uncertainty on the relationship between strategic orientation and logistics agility within Jordanian Pharmaceutical manufacturing companies. Variables taken into consideration included (Market Orientation, Innovation Orientation, Customer Orientation, Technology Orientation and Learning and Growth Orientation). The study sought to answer the following questions:

- 1.** What is the influence of strategic orientation on logistics' agility within Jordanian Pharmaceutical manufacturing companies?
- 2.** What is the moderating role of environmental uncertainty on the relationship between strategic orientation and logistics agility within Jordanian Pharmaceutical manufacturing companies?

Reaching an answer the aforementioned questions required achieving the study's objectives which are:

- 1.** To study the direct connection between different dimensions of strategic orientation (Market Orientation, Innovation Orientation, Customer Orientation, Technology Orientation and Learning and Growth Orientation) with the logistics agility in Jordanian Pharmaceutical manufacturing companies.
- 2.** In order to explore how environmental uncertainty moderates the connection between strategic orientation and logistics agility in such organizations.
- 3.** To determine how various elements of strategic orientation are affected by environmental uncertainty in their influences on logistics agility.

4. To offer information on how Jordanian Pharmaceutical manufacturing companies can improve its logistics agility through the strategic orientation and matching to the environmental factors.
5. To add to the understanding of the strategic management and supply chain practices peculiar to Jordanian Pharmaceutical manufacturing companies that operate in environments of uncertainty in Jordan.

The purpose of the study is of paramount importance to the pharmaceutical industry since it focuses on how companies can be receptive and resilient in extremely volatile and unpredictable surroundings. Supply chains in pharmaceutical sector are highly sensitive to disruption owing to strict regulatory measures, sensitivity of products, and the changing demand in the global market. Analyzing how environmental uncertainty influences the formation of the strategic orientation and logistics agility relationship, the study has valuable implications on how companies may increase their adaptability and responsiveness. This will be critical in terms of delivering medicines in time, preserving quality of products and maintaining a competitive edge in a dynamic economy like Jordan and other emerging economies.

Launching from the aim, questions and objectives of current study, it can be said that the study was built on the premises of 'Contingency Theory'. According to this theory, the effectiveness of an organization is based on how well the internal forces (such as strategic orientation) are aligned to the external forces (such as environmental uncertainty) within a given environment. It facilitates the analysis of the environmental uncertainty in moderating the relationship between the strategic orientation and the logistics agility by highlighting the importance of strategic flexibility in uncertain environments (Ştefan et al., 2023; Abufardeh & Albloush, 2025).

It was expected from current study to present practical and theoretical implications. From a practical perspective, the research is useful to Jordanian Pharmaceutical manufacturing companies as the study indicates the need to match the strategic orientations with the environment conditions to increase the agility of logistics. These findings can allow the managers to design flexible strategies that can be responsive to the environmental uncertainty so as to enhance the responsiveness and competitiveness of the supply chain.

From a theoretical perspective, the study contributes to the body of knowledge on the role of environmental uncertainty in moderating the relationship between different strategic orientations and logistics agility and hence the contingency theory. It highlights the importance of contextual aspects in strategic and supply chain management, which adds empirical data to the existing models in Jordanian Pharmaceutical manufacturing companies' sector.

2. Literature Review

2.1 The Concept of Agility

Motwani and Katatria (2024) stated that agile management is the capacity of an organization to quickly respond to the changes in the external environment without compromising performance and competitive advantage of the organization. Hijazeen et al. (2025) and Liu (2026) pointed out that it focuses on adaptability, responsiveness, and the ability to rapidly reorganize resources, procedures, and strategies to meet the changes in the market, technological development, or any sudden shocks. Awamleh et al. (2024b) and Abu Bakir (2022) described agile organizations as proactive to change; therefore, they have a culture of innovation and continuous improvement that makes them capture the emerging opportunities as well as avert potential risks

According to Gong and Ribiere (2023), within the scope of contemporary management, the meaning of agility has gone beyond the simplicity of being flexible to an approach that is strategic in nature where the focus is on speed, collaboration, and customer focus. It is characterized by the introduction of dynamic processes, decentralization of decision-making and the development of a workforce that is

able to learn and adapt rapidly. Girod et al. (2023) added that the relevance of this concept is especially important in the highly uncertain and volatile environments where organizations capable of quickly adjusting to external pressures are in a better position to sustain growth and outperform competitors. In general, agility in management deals with the establishment of a robust organizational structure that can survive in the ever-changing world (Amini & Rahmani, 2023).

2.2 An Agile Logistics

Korucuk et al. (2023) confirmed that agility is the logistics version of being able to provide a responsive reaction to the varying needs of the customers, evolving circumstances in the market, and all external disturbance. According to Awad et al. (2026) agility entails the creation of flexible logistics procedures, like inventory control, transport, and distribution which are able to be changed quickly in response to different demands. Piotrowicz et al. (2023) stated that with the help of agile logistics system, organizations can achieve shorter lead times and better service levels and a competitive advantage owing to its ability to swiftly respond to changing demands or supply chain shocks, for example, delays, shortages, or geopolitical concerns.

According to Al-Doghan and Sundram (2023), logistics agility focuses on the value of real-time flow of information and visibility within the whole supply chain. The utilization of such technologies as sophisticated tracking systems, data analytics, and unified communication platforms enables the logistics managers to control operations constantly and make prompt decisions (Hijazeen et al., 2025). Such a proactive strategy aids in detecting any possible bottlenecks or risks in advance, and therefore, intervene earlier before the disruption to ensure that the smooth flow of goods through the suppliers to customers (Aghaei & Jazini, 2023).

From the perspective of Akhtar (2025), logistics agility assists in achieving higher strategic goals of organizations since it promotes resilience and flexibility. It enhances the creation of flexible routes of transportation, efficient warehousing and relationships with partners (Awad et al., 2026; Chidouh, Aarab, & Laglaoui, 2025). All these aspects allow organizations not only to ensure a quick response on aspects that are unexpected developments, but they mean that the organizations may be able to open up new opportunities that are available, such as opening up different markets or offering new products. In the contemporary, ever-changing environment of the global society, the importance of logistics being agile provides the capability to sustain operational continuity and to achieve high end customer satisfaction (Gomes et al., 2023).

Abdalla (2026) pointed that agile logistics has important advantages in regards to the improvement of an overall response and competitiveness of a company. Agile logistics enables organizations to respond quickly to the dynamics in customer demand and the market environment thus leading to shortening of lead times and increased accuracy of delivery (Lun et al., 2023). Song et al. (2022) added that this sensitivity has the potential of increasing customer satisfaction as customers can get their products sooner and as planned, and it increases their loyalty and the brand image. Also, agility enables better control of inventories by businesses to help in decreasing inventories and lower storage-related expenses without having to run out of products at the onset of demand.

Zreik (2023) argued that considering other important advantages of agile logistics, more resilience to disturbances should be noted. In the modern turbulent world market, supply chains can be attacked by any elements of natural calamities like calamities, transport delays, or geopolitical tensions. Agile logistics system has the ability to adapt and re-route them and find other suppliers or change the inventory strategy to continue with the flow of operations. Such a rapid response capability helps reduce possible loss of financial assets and avoid major operational reversals that may affect the image and stability of the organization in case of a crisis (Klundt et al., 2024).

From the perspective of Mishra et al. (2025) and Moskvichenko et al. (2024), agile logistics is a source of strategic advantage to organizations, as it helps them to gain new market opportunities, as well as

innovate better. Subsequently, when logistic operations are flexible, organizations are able to experiment or approach new channels of distribution, enter new market or get access to new products without having to work out a long span of time. Such flexibility not only facilitates the culture of constant improvement and innovation so that businesses keep ahead of competitors and are proactive in the response to trends in the sector it also frees the business to respond to sector trends. In sum, agile logistics enables organizations to work more effectively, robustly and in a more strategic manner in a growing complex and fast-moving global market place (Cao et al., 2024).

Agile management has been generally understood as the ability of an organization to react swiftly to the environmental changes without affecting performance and competitive edge (Khawaldeh & Alzghoul, 2024). This is the most flexible, responsive side of the spectrum and it has the capacity to rearrange resources dynamically to fit the market disruption and technological changes (Awamleh et al., 2024b). Nevertheless, more recent research broadens this perspective to operational flexibility to strategic capability based on speed, collaboration, and customer-centricity (Gong & Ribiere, 2023). In this respect, agility is not solely responsive but proactive, as it allows companies to be anticipatory of change and keep innovating in the process (Girod et al., 2023).

In the context of supply chains, logistics agility is a more narrowing aspect of organizational agility. It is the capacity to modify the logistics activities, including transportation, inventory, and distribution, based on changes in customer and external interferences (Korucuk et al., 2023). Whereas there is a focus on operational responsiveness and efficiency benefits (Piotrowicz et al., 2023), others focus on the contribution of digital technologies and real-time information systems to improving visibility and proactive decision-making (Al-Doghan & Sundram, 2023). Moreover, strategic outcomes such as resilience, innovation, and market expansion have been associated with logistics agility (Mishra et al., 2025).

The literature has narrowed down to the premise that logistics agility is an operational and strategic capability that increases responsiveness, resilience, and competitiveness. Nevertheless, to attain such agility, internal organizational capabilities that inform decisions and resource allocation are essential, in particular, strategic orientation.

2.3 Environmental Uncertainty

Lissillour et al. (2024) and Patrucco et al. (2023) argued that environmental uncertainty is the inability to predict and control the events that happen in the environment of the organization and which may affect the functioning of an organization and its strategic planning. It includes an extensive number of factors like economic turmoil, political change, technological evolution, and natural calamities, which have the ability to make the market or sector environment dynamic (Rehman & Jajja, 2023). Organizational entities that work in conditions of high uncertainty are usually not able to predict demand, supply chains, and long-term planning of their work since the factors affecting business continually change and are hard to predict (Yu et al., 2023).

Li et al. (2024) noted that this insecurity may have a major influence on the decision-making processes and companies strive to be more flexible and adaptive to survive and prosper. Companies can be forced to invest in real time information systems or to increase the diversity of their suppliers or carry greater inventory as a form of insurance against happening unforeseen shocks (Luiz & Beuren, 2023). Although environmental uncertainty wields threats, it also elicits innovation and bounce-back that makes an organization create stronger contingency plans as well as flexible ways of doing things to accommodate any unseen external changes (Kim et al., 2024; Wong & Ngai, 2023).

2.4 Strategic Orientation

According to Uvarova et al. (2023) strategic orientation of organizations is defined as the perception and the manner in which an organization makes plans and decisions, deploys resources and gives

directions. It portrays the values, priorities and focus of the organization, and this influences the way it views opportunities and threats within the external environment. Cuesta-Valino et al. (2023) added that market orientation whereby organizations give importance on customer needs and preferences could be incorporated by some organizations whereas technological development and innovation could be embraced by other organizations. The strategic orientation determines the long-term objectives of the organization, its competition positioning as well as the manner in which it aligns its internal capabilities and external requirements (Son et al., 2026).

Nguyen et al. (2024) stated that a clear strategic orientation enables organizations to be focused and united in their activities such that every department and employee operates to common goals. It also influences their capacity to adjust to a dynamic situation because a clear-cut orientation offers a control to decision-making relating to an uncertain situation (Abu Bakir & Alma'abreh, 2026). An organization with its strategy focused on the cost leadership, differentiation or niche approaches, will influence their competitive approach and how they sustain their success over time, including the way they form value among their customers and stakeholders (Setiarini et al., 2023).

The strategic orientation Is an expression of the guiding principles that Influence the organizational behavior, the deployment of the resources and the long-term orientation (Uvarova et al., 2023). It defines the way in which the firms decipher the environmental cues and react to the opportunities and threats (Cuesta-Valino et al., 2023). Whereas previous literature has approached strategic orientation as an overall construct, most recent literature has focused on its multidimensional aspect, such as market, innovation, customer, technology and learning orientations.

Market orientation is centered on the interpretation and reaction to customer demands and competitive forces and improves responsiveness and relevance (Ed-Dafali et al., 2023). By contrast, innovation orientation encourages experimentation and continuous improvement, which allows firms to be responsive to technological changes and come up with new solutions (Zhang et al., 2023). Likewise, customer orientation enhances the long-term position and responsiveness of services (Margaretha & Suryana, 2023), and technology orientation enables the digital transformation and operational effectiveness (Daradkeh & Mansoor, 2023). The orientation on learning and growth also helps to become agile as it leads to the accumulation of knowledge and extrapolability in the organization (Correia et al., 2023).

Although these insights exist, literature offers different focuses; some of the studies focus more on market responsiveness, whereas others highlight technological capabilities or innovation as the main contributors to agility. This difference implies that a one-dimensional orientation is not enough and instead a multifaceted strategic orientation is needed to attain high logistics agility.

All of these dimensions imply that strategic orientation furnishes the internal basis of the creation of logistics agility. Organizations that incorporate several orientations are more competent to pick the changes and respond adequately hence the suggestion that:

H1: Strategic orientation has a significant positive effect on logistics agility within Jordanian pharmaceutical manufacturing companies.

2.5 Market Orientation

Market orientation is a feature of strategic orientation that commences with the need, preferences and actions of the customers and the general market milieu (Wang, 2026). Firms that possess high market orientation keep on obtaining market intelligence, checking their competitors, and changing their products, services and marketing strategies in order to fulfil the changing needs of customers (Abualrejal et al., 2021). The practice assists the companies in remaining relevant and competitive, as it aims to translate the value in line with the expectations in the market hence developing customer satisfaction and loyalty (Ed-Dafali et al., 2023).

2.6 Innovation Orientation

Innovation orientation relates to an opportunity-seeking strategic direction that entails the creation of new ideas, products, processes, or services to enable a competitive advantage into play. An innovation-oriented organization emphasizes being creative, trying new things and doing better (Freihat et al., 2020). They spend resources in research and development and create an organizational culture that accepts change and variety in the hope that they will be a sector leader through provision of specialized solutions (Zhang et al., 2023). This orientation is important to organizations that aim at separation and rapid adjustment to the technological changes and to the alterations in the markets.

2.7 Customer Orientation

Customer orientation focuses on the centralization of the customer on the organizational decision-making and operations. It is about knowing the needs of the customers well and also making all business practices work together, in order to make the customers more satisfied and loyal to the company (Imania & Qibtiyah, 2025). Customer-oriented organizations are those that actively pursue customer feedback, personalizes the service and strives to achieve long-term relationship, something that may translate to long-term competitive advantage in terms of higher customer retention (Margaretha & Suryana, 2023).

2.8 Technology Orientation

Daradkeh and Mansoor (2023) noted that technology orientation is characterized as the strategic focus on the use, integration, and adoption of technologies in an attempt to enhance processes, products, or services in an organization. Technology-oriented companies are also ahead of their technological curve investing in digital solutions, automation, and thinking of unique systems to be more efficient and establish innovative products (Masa'deh et al., 2018). Such an orientation helps the organization to be competent in the market influenced by technologies and seize the opportunity of digital transformation (Khawaldeh et al., 2025).

2.9 Learning and Growth Orientation

According to Correia et al. (2023), learning and growth orientation gives more emphasis on inculcating a culture of learning, growing, and knowledge sharing in the organization. Abu Bakir and Alma'abreh (2026) revealed that it also focuses on sustainable investment in employee skills, leadership, and knowledge in organization to sustain innovation, and flexibility. Companies that have such Symbiosis are aware that they can only achieve long-term success when their organizations are capable of learning experiences, adapting to the changes in the environment, and grooming human capital, and therefore promote development and sustenance.

The literature demonstrates the diverging views on the role of environmental uncertainty. Other researchers highlight its disruptive impact, where companies have to implement buffering mechanisms, like inventory buildup or diversification of suppliers (Luiz & Beuren, 2023). Some also claim that uncertainty enhances the importance of dynamic capabilities, such as agility and strategic alignment, because companies have to be more responsive and flexible (Li et al., 2024).

This deviation implies that the environmental uncertainty does not directly affect the organizational results but instead, it affects the degree of relationship between the internal capabilities and performance results. The strategic orientation is more effective in promoting the agility of logistics in the face of high uncertainty since in such situations, firms have to be more adaptive to overcome volatility (Syafrianita et al., 2025).

Therefore, environmental uncertainty is a contextual variable that increases or decreases the effect of strategic orientation on logistics agility, which results in the second hypothesis:

H2: The relationship between strategic orientation and logistics agility in pharmaceutical manufacturing companies in Jordan is moderating by the environmental uncertainty.

3. Model and Hypotheses

3.1 Conceptual Framework

This study's conceptual model depicts the connections between the major variables. Strategic Orientation is a higher order construct with Market Orientation, Innovation Orientation, Customer Orientation, Technology Orientation and Learning & Growth Orientation. These dimensions are assumed to have a positive impact on Logistics Agility. The moderating variable of Environmental Uncertainty is added to the relationship between Strategic Orientation and Logistics Agility. The framework serves as a visual and theoretical roadmap to aid testing of the study hypotheses and inform the subsequent empirical analysis.

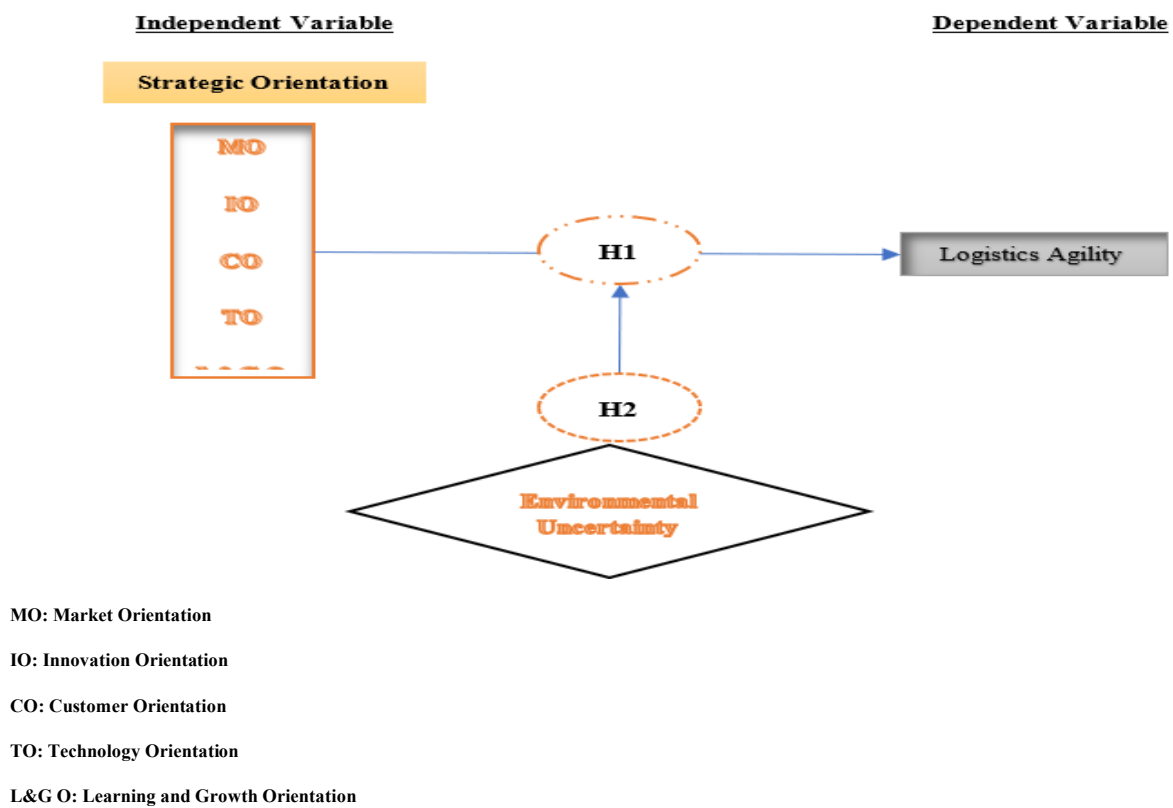


Fig.1: Conceptual framework of the study

Source: Adapted from Abdalla (2026); Dindarik & Fidan (2025); Garba & Musa (2025); Karami (2026); Sungthong et al. (2025); Wang et al. (2025).

3.2 Hypotheses

From the above model of study, following set of hypotheses was reached:

H1: Strategic orientation has a significant positive effect on logistics agility within Jordanian Pharmaceutical manufacturing companies.

H1a: Market orientation has a significant positive effect on logistics agility within Jordanian Pharmaceutical manufacturing companies.

H1b: Innovation orientation has a significant positive effect on logistics agility within Jordanian Pharmaceutical manufacturing companies.

H1c: Customer orientation has a significant positive effect on logistics agility within Jordanian Pharmaceutical manufacturing companies.

H1d: Technology orientation has a significant positive effect on logistics agility within Jordanian Pharmaceutical manufacturing companies.

H1e: Learning and growth orientation has a significant positive effect on logistics agility within Jordanian Pharmaceutical manufacturing companies.

H2: Environmental uncertainty moderates the relationship between strategic orientation and logistics agility in Jordanian Pharmaceutical manufacturing companies.

The Strategic Orientation as higher-order construct of Market Orientation (MO), Innovation Orientation (IO), Customer Orientation (CO), Technology Orientation (TO), Learning and Growth Orientation (L&G O) is theoretically and empirically rationalized because it is a holistic representation of alignment of internal capabilities with external environmental requirements, especially in dynamic and competitive markets like pharmaceutical production. To begin with, Market Orientation (MO) is a necessity since it allows firms to more systematically collect, share and react to market intelligence so that firms are responsive to demand changes and competitive pressures. MO directly boosts the speed and alignment with market demands in logistically intensive industries, the core of which is to realize logistics agility.

Second, the Innovation Orientation (IO) is an important factor because it indicates the likelihood of an organization to sustain new ideas, processes and solutions. Innovation capability enables companies to re-design logistics operations, embrace new supply chain practices, and enhance responsiveness in uncertain and rapidly changing environments.

Third, Customer Orientation (CO) is explained by the fact that logistics agility is customer-driven, in nature. Companies which are customer oriented will have better chances of customizing logistics operations, enhance the quality of services and decrease the response time which will make the company even more satisfied and competitive.

Fourth, Technology Orientation (TO) become more important in the contemporary supply chains as digital transformation, automation, and data analytics allow tracking in real-time, predictive logistics, and improved coordination. The agility is directly supported by this orientation as it enhances visibility and the speed of decision-making throughout the supply chain.

Lastly, Learning and Growth Orientation (L&G O) is added, as learning within an organization facilitates flexibility, acquisition of knowledge and constant enhancement. It reinforces the capacity that the firm has to internalize environmental changes and transform them into operational gains, which is a fundamental need in maintaining logistics agility in the long-term.

4. Research Methodology

4.1 Study Approach

The descriptive-analytical (quantitative) methodology was adopted to achieve the aim and objectives of current study. It allowed the usage of a quantitative tool that enabled gathering primary data from a larger sample size. which helped in acquiring more comprehensive data.

A questionnaire was adopted to be the main tool for the study. It consisted of two main sections; the first section was concerned with demographics of study sample (gender, age, qualification and experience). The other section presented aspects related to study's sub-variables (Market Orientation, Innovation Orientation, Customer Orientation, Technology Orientation and Learning and Growth Orientation). In addition to logistics agility, and environmental un-certainty. In order to check the validity of questionnaire items, questionnaire content was arbitrated through scholars and academics in the field. After arbitration, and in its final version, the questionnaire consisted of (36) items and was

ready for distribution. The questionnaire was built on Likert 5-point scale and sourced from the following studies:

Table 1. Questionnaire Source

Variable	Source	# of Items
Market Orientation	Karami (2026)	5
Innovation Orientation	Dindarik and Fidan (2025)	5
Customer Orientation	Garba and Musa (2025)	5
Technology Orientation	Sungthong et al. (2025)	5
Learning and Growth Orientation	Wang et al. (2025)	5
Logistics Agility	Abdalla (2026)	5
Environmental Uncertainty	Pu et al. (2025)	6

4.2 Population and Sampling

Population of study consisted of production and supply chains managers in Jordanian Pharmaceutical manufacturing companies. Total of (210) was chosen as a sample that represented the study population. The questionnaire was uploaded online ‘Google Forms’ in order to collect primary data from respondents. After application process researchers were able to collect (177) properly filled questionnaire which indicated a response rate of (84.3%) as statistically accepted.

Statistical package for social sciences (SPSS) was used in order to be the main screening and analysis tool of study. Cronbach’s Alpha was used to check the reliability and consistency of study tool. Table 2 below confirmed that the tool was consistent and reliable as all items scored alpha (α) that was higher than 0.70 (Kumar, 2024). Other statistical tools used on current study included (frequencies, frequency tables, descriptive statistics, reliability testing and regression analysis).

Table 2. Cronbach's Alpha results

Variable	α
MO: Market Orientation	0.939
IO: Innovation Orientation	0.917
CO: Customer Orientation	0.84
TO: Technology Orientation	0.915
L&G O: Learning and Growth Orientation	0.809
Logistics Agility	0.866
Environmental Uncertainty	0.889

5. Results

5.1 Demographic Variables

Table 3 below indicated respondents' demographic variables. It was seen that majority of respondents were males forming 68.4% of the sample who were more than 45 years old forming 36.7% of the sample. In addition, that, results indicated that 50.3% of the sample held BA degree and 41.2% of the respondents had an experience on the field that was more than 15, based on years.

Table 3. Demographic Results

Demographic Variable	f	%
Gender		
Male	121	68.4
Female	56	31.6
Age		
Less than 30 years	14	7.9
30-35	48	27.1
36-45	50	28.2
More than 45 years	65	36.7
Educational Level		
diploma and below	67	37.9
BA	89	50.3
High Studies	21	11.9
Experience		
Less than 5 years	12	6.8
6-10	31	17.5
10-15	61	34.5
More than 15 years	73	41.2
Total	177	100.0

5.2 Descriptive Analysis results

Mean (μ) and standard deviation (σ) were used to analyze data of questionnaire items. It was noticed that all statements scored a mean higher than mean of scale 3.00 indicating that all statement were positively received by respondents. See table 4.

Table 4. Descriptive Analysis

Statement	μ	σ
Market orientation makes sure to focus on and understand the market	3.655	1.211
It seeks to know customers' needs and requirements	3.791	1.218
It takes into perspective the common trends in a rapid approach	3.571	1.214
Market orientation enhances logistics to meet customers' desires	3.847	1.217
Customers' demands are the main aim of market orientation	3.650	1.197
MO: Market Orientation	3.703	1.087
Innovation leads to the production of innovative products, services and processes	4.164	.867
Adopting innovative orientation means to encourage flexibility in logistics	3.955	.982
Innovative capabilities support innovative activities	4.107	.808
Not only there would be innovation in production, but also innovative management	4.079	.956
Innovation orientation supports better decision making	3.949	.814
IO: Innovation Orientation	4.051	.770
Strategic orientation makes customers a priority	4.333	.688
Customer services is delivered in the best way possible	4.322	.710
Customer orientation provides adaptable logistics for better services	4.192	.663
It can meet diverse requirements of customers	4.316	.770
Changing customer needs can be met through customer orientation	3.819	1.001
CO: Customer Orientation	4.197	.606
Technology can improve processes of logistics	4.181	.930
Through technology agility can be further enhanced	3.915	1.044
It enables real-time sharing of logistic information	3.876	1.075
With technology, there would be a space for rapid response	3.864	.888
It enables meeting requirement with minimum time	4.254	.721
TO: Technology Orientation	4.018	.812
Learning and growth promote ongoing development	3.927	.731
Through learning, there would be a chance for organizational growth	4.124	.823
Logistics are better supported with well-built learning	4.175	.909
Learning can enhance responsiveness	4.198	.739
Logistic practices are better monitored through learning from previous risks and mistakes	3.819	1.154
L&G O: Learning and Growth Orientation	4.049	.666
Logistics agility enables fast decision-making and responsiveness	4.068	.795
Logistics agility enables an organization to rapidly adjust its supply chain operations to meet the changes in the market	3.898	.860
Logistics agility through customizable and fast delivery services would enhance overall level of service	4.153	.794
Adaptable logistics systems are able to smoothly adapt to shocks.	3.977	.790

Alignment of the goals with logistics operations facilitates the active way of managing risks	4.249	.809
Logistics Agility	4.071	.649
Environmental uncertainty in organizations may increase or reduce the impact of strategic focus on adaptive capabilities	4.051	.961
In uncertain environment, logistics agility organizations are strategically oriented towards flexible and innovative approaches	4.203	.764
Working in an uncertain environment to react fast to unpredictable changes and shocks	4.18	.903
There is a need for organization to act quickly in an unstable environment	4.10	.751
Environmental uncertainty may reinforce the degree to which strategic orientation is converted into logistics agility	4.37	.695
Environmental uncertainty may either undermine the degree to which strategic orientation is converted into logistics agility	4.36	.717
Environmental Uncertainty	4.2081	.64538

5.3 Hypotheses Testing

Multiple regression was used to test study's hypotheses. According to table 5 below it was seen that the independent variables had a strong correlation with the dependent variable ($R = 0.71$). The independent variables account for an additional 50.4% of the total variance in the dependent variable based on R^2 value (50.4%). Furthermore, the statistical analysis showed that the F-value (159.445) is statistically significant at the 0.05 level. This showed that Strategic orientation has a significant positive effect on logistics agility within Jordanian Pharmaceutical manufacturing companies.

Table 5. H1 Testing

H1: Strategic orientation has a significant positive effect on logistics agility within Jordanian Pharmaceutical manufacturing companies.

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.	F	R	R ²
	B	Std. Error	Beta						
1	(Constant)	1.028	.266		3.859	.000	159.445 0.001	.710	.504
	MO: Market Orientation	.250	.045	.418	5.545	.000			
	IO: Innovation Orientation	.154	.061	.183	2.539	.012			
	CO: Customer Orientation	.355	.086	.331	4.122	.000			
	TO: Technology Orientation	.037	.086	.046	.434	.665			
	L&G O: Learning and Growth Orientation	.036	.112	.037	.321	.748			

Table 6 below demonstrated a statistically significant correlation between strategic orientation and logistics agility as shown by a coefficient of determination (R^2) of 0.477 and a p-value less than 0.05. During the subsequent phase, it included the Environmental uncertainty variable which was shown to

have a substantial impact on the overall interpretation factor, as seen by an increase of $R^2 = 8.9\%$. It was observed that the inclusion of the interaction environmental uncertainty and strategic orientation resulted in a notable increase of 2.6% in the overall interpretation factor, as shown by the R^2 change value. This increase is considered statistically significant. That means environmental uncertainty moderates the relationship between strategic orientation and logistics agility.

Table 6. Testing H2

H2: Environmental uncertainty moderates the relationship between strategic orientation and logistics agility

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.690 ^a	.477	.474	.47097	.477	159.445	1	175	.000
2	.752 ^b	.566	.561	.43023	.089	35.712	1	174	.000
3	.769 ^c	.592	.585	.41825	.026	11.104	1	173	.001

a. Predictors: (Constant), ind

b. Predictors: (Constant), ind, Environmental Uncertainty

c. Predictors: (Constant), ind, Environmental Uncertainty, mod

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35.366	1	35.366	159.445	.000 ^b
	Residual	38.817	175	.222		
	Total	74.183	176			
2	Regression	41.976	2	20.988	113.391	.000 ^c
	Residual	32.207	174	.185		
	Total	74.183	176			
3	Regression	43.919	3	14.640	83.685	.000 ^d
	Residual	30.264	173	.175		
	Total	74.183	176			

6. Discussion

Current study sought to investigate the influence of environmental uncertainty on the relationship between strategic orientation and logistics agility within Jordanian Pharmaceutical manufacturing companies. Variables taken into consideration included (Market Orientation, Innovation Orientation, Customer Orientation, Technology Orientation and Learning and Growth Orientation). Achieving study's hypotheses was done depending on quantitative methodology utilizing a questionnaire that was self-administered by (177) production and supply chain managers within Jordanian Pharmaceutical manufacturing companies. Collected primary data was screened and analyzed depending on SPSS.

Results of analysis indicated that strategic orientation has the ability to increase logistics agility within the surveyed organizations. The outcomes presented by the multiple regressions analyses can be viewed as useful information regarding the connection between strategic orientation, environmental uncertainty and logistics agility in the studied Jordanian organizations. In the first analysis (Table 5), there is a positive relationship between independent variables, which include different types of strategic orientations, and the dependent variable, logistics agility, which is high. In particular, the correlation

coefficient ($R = 0.71$) shows that there is a significant linear relationship between the strategic orientation and the logistics agility, as the former is higher, the latter is more likely to increase as well. In addition, the independent variables accounted to about 50.4 % of the variance in logistics agility ($R^2 = 0.504$) which is a large proportion and this implies that the factors of strategic orientation are significant predictors of logistics agility. Such results agreed with Alzghoul et al. (2024).

The significance of the regression model is also confirmed by the F-test that is significant at 0.05 level ($F = 159.445$, $p < 0.001$). This proves that the combination of strategic orientation variables is significantly influential on the concept of logistics agility, and the model is sound in its ability to predict the outcomes in the examined sample. Market Orientation (MO), Customer Orientation (CO), and Innovation Orientation (IO) are also the variables of individual strategic orientation that demonstrate significant positive effects ($p < 0.05$), and it means that these particular orientations significantly help to improve the logistics agility. On the other hand, Technology Orientation (TO) and Learning and Growth Orientation (L&G O) are not significant in this model and this indicates that they have less direct impact on the dependent variable.

The analysis of the subsequent model that includes the environmental uncertainty (Table 6) shows that the given external factor has a moderating effect on the connection between the strategic orientation and logistics agility. Adding environmental uncertainty raises the R^2 to 0.566 and increase of 0.089 (that is, 8.9 %), which is statistically significant ($F \text{ change} = 35.712$, $p < 0.001$). It means that the environmental uncertainty increases the predictive strength of strategic orientation with regard to logistics agility; the more uncertain is the environment, the greater the dependence of an organization on strategic orientations to be agile. Moreover, the interaction term (strategic orientation*environmental uncertainty) contributes additional 2.6% to the explained variance and this gain is significant ($F = 11.104$, $p = 0.001$). This result proves the fact that environmental uncertainty moderated the relationship either enhancing or diminishing the effect of strategic orientation based on the degree of external uncertainty. On the whole, these findings imply that strategic orientation is one of the main determinants of logistics agility, and its efficiency is increased in the environments where the level of uncertainty is higher. Strategic orientation and external environment are therefore some of the factors that should be considered by managers in the selected Jordanian organizations in an attempt to improve the flexibility of logistics. This agreed with Yu et al. (2023) who noted that the environmental uncertainty moderating impact is also important because adaptive strategies can be used to respond flexibly to external demands and guarantee agility and competitive advantage consistently to volatile environments.

From Table 5, the most significant variable is Market Orientation (MO). This is shown by its Beta value of 0.418 which is higher than the other significant predictors (Customer Orientation 0.331 and Innovation Orientation 0.183). Although Market Orientation has a higher Beta value, there also should be a consideration of the significance levels and overall contribution of each variable. However, looking at the individual Beta coefficients and significance levels, Market Orientation (MO) and Customer Orientation (CO) both are significant to logistics agility, with MO having a Beta of 0.418 ($p < 0.001$) and CO having a Beta of 0.331 ($p < 0.001$). Between the two, (Market Orientation) has the strongest influence given its higher Beta value and significance level. It reflects the organization's focus on understanding and responding to market needs which directly enhances flexibility and responsiveness in logistics processes. (Customer Orientation) also plays a big role, but in terms of relative influence, Market Orientation has a slightly more impact based on the regression coefficients.

Motwani and Katatria (2024) said that agile management means an organization's ability to respond to external changes quickly without sacrificing performance or competitive advantage. They mentioned adaptability, responsiveness, innovation and a proactive culture – concepts that match the study's focus on strategic orientation and logistics agility. Several studies support the study findings (Gong & Ribiere, 2023; Cao et al., 2024; Moskvichenko et al., 2024) that agility is a strategic approach that means speed, collaboration, customer focus, decentralization and rapid learning supports the study's findings that

strategic orientations like market and customer focus impact logistics agility. Amini and Rahmani (2023) also agreed with the results that agility is very important in uncertain and volatile environments matches the study's finding that environmental uncertainty moderates the relationship between strategic orientation and logistics agility. The finding that higher environmental uncertainty increases the impact of strategic orientation on logistics agility is in line with Girod et al. (2023)'s view that agility is a survival tool in turbulent times.

7. Conclusion

Conclusively, this paper has established that strategic orientation is a critical element towards improving logistics agility in pharmaceutical manufacturing organizations in Jordan. Companies that focus on market awareness, customer focus, and innovation are in a better position to react wisely to the dynamic conditions, and operational requirements. The orientations support the development of flexible and responsive systems of logistics that can adapt to both internal and external demands. Moreover, the paper also notes the role of environmental uncertainty as an important contextual factor that determines this relationship. The strategic orientation value is even more pronounced in more volatile and unpredictable environments, as companies begin to be more dependent on the adaptive strategies to sustain performance and competitiveness. This highlights the importance of managers not only creating effective strategic orientations but also being sensitive to the dynamics in the environment in the course of decision making. On the whole, the results indicate that being agile in the logistics does not only require the internal capabilities but the alignment of the capabilities to the external situation. Managers are thus urged to develop a strategic mind that incorporates customer needs, market trends and innovation and at the same time keep a check on the changes in the environment to maintain agility and long-term success.

From analysis and results, current study recommended:

1. Managers should cultivate a customer-focused culture by actively seeking customer feedback and aligning logistics strategies with changing market needs, which will boost responsiveness and service quality.
2. Organizations ought to invest in technologies and processes that allow for quick adjustments in logistics operations, like real-time tracking and data analytics, to better handle environmental uncertainties.
3. Jordanian Pharmaceutical manufacturing companies should set up strong environmental scanning systems to foresee external shocks and adapt their strategic and logistical plans accordingly, ensuring resilience and a lasting competitive advantage in unpredictable conditions.

8. Limitations of Study

Limitations of study included the risk of common method bias because the data were collected using a single self-administered questionnaire, consisting of the same respondents at a single point in time. This method can exaggerate or de-escalate the relationships between the variables observed because the responses given by the participants might be due to individual perceptions, response tendencies or social desirability instead of the actual organizational practices. The method of sampling casts doubts on representativeness. Though the research was aimed at managers of pharmaceutical manufacturing organizations in Jordan, the sample was relatively small and not random meaning that the findings might not be generalized to the broader industry or other settings. Moreover, measurement of the environmental uncertainty can be deemed as problematic, given that it is based on subjective perceptions as opposed to objective indicators and might result in inaccuracy in measurements and impact the validity of the identified moderating effect in the research.

9. Future Research Orientation

As future orientation generated from current study, study recommend:

1. Carry out longitudinal study to observe how strategic orientations and logistics agility have changed over time and different environmental situations.
2. On a broader scale of the research, there could be a space to carry out research with larger firms or organizations in a different sector to see how the environmental uncertainty affects the logistics agility in a different context.

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