INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES

Vol 14, Issue 8, (2024) E-ISSN: 2222-6990

The Impact of Dynamic Capabilities on Supply Chain Performance at Jordanian Pharmaceutical Manufacturing Companies

Hamza Yusuf Abdulrahman Samik, Dr. Aysar Mohamed Al-Khashman

World Islamic Sciences University World Islamic Sciences University

Email: Hamzehsmeik2@yahoo.com, Aysarmak@yahoo.com

To Link this Article: http://dx.doi.org/10.6007/IJARBSS/v14-i8/22583 DOI:10.6007/IJARBSS/v14-i8/22583

Published Date: 21 August 2024

Abstract

This study aimed to investigate the impact of dynamic capabilities on supply chain performance at Jordanian Pharmaceutical Manufacturing Companies. Dynamic capabilities were measured through four dimensions: Sensor capabilities, learning abilities, coordination capabilities, and reconfiguration capabilities. Supply chain performance was measured through four dimensions: supply chain integration, customer Response, supply chain flexibility, and supply chain efficiency. The study used the quantitative method, after obtaining the answers of (228) managers through an electronic questionnaire that was developed to collect the required data. A group of statistical methods were used, such as the mean, standard deviation, and simple and multiple regression coefficients. The study revealed that there is a positive relationship between the dependent variable and the independent variables, in addition to the presence of a statistically significant effect at the level of statistical significance ($\alpha \leq 0.05$) of dynamic capabilities in their combined dimensions on the performance of supply chains in Jordanian pharmaceutical companies. The study recommended conduct periodic analyses of various dynamic capabilities and develop strategies to improve them, and also the study recommended develop effective data collection and analysis systems for early detection of changes and opportunities in the market.

Keywords: Dynamic Capabilities, Supply Chains, Jordanian Pharmaceutical Industry.

Introduction

The information age has had a qualitative impact on the traditional ways of human life in particular and on societies and organizations in general, and therefore the practices and methods of performance of business organizations have changed, and their interests have begun to focus on building valuable resources and developing capabilities, which are

characterized by the inability to imitate, and providing organizations with the elements of empowerment and achieving competitive superiority.
The topic of dynamic capabilities occupies a large space in the field of business administration because of its important role in strategic management, and the topic of dynamic capabilities has received increasing attention by researchers because it helps organizations keep pace with the changes that occur and how to exploit opportunities and face challenges (Al-Ali and Al-Lahibi, 2023, 11).

The significance of this study lies in its potential to offer valuable insights into how Jordanian pharmaceutical companies can enhance their supply chain performance through the strategic application of dynamic capabilities. Studying this topic is crucial as it addresses the need for companies to remain competitive in a rapidly evolving market environment. Managers, strategists, and policymakers in the pharmaceutical industry will benefit from this research by gaining a better understanding of how to optimize their supply chains, thereby improving overall efficiency and responsiveness. Ultimately, the findings can guide the development of more resilient and adaptive supply chain strategies, ensuring long-term success.

To succeed in the competitive markets that make up today's economy, companies must learn how to align their supply chains with the demands of the markets they serve, as supply chain performance has become competitive in companies that excel in this field, and one of the largest companies in North America is a testament to the power of effective supply chain management.) over the past 20 years, much of whose success, if not most of it, is directly related to its evolving capabilities to continuously improve its supply chains (Hugos, 2018, 41). The recent decades show the development of the Jordanian pharmaceutical industry clearly, as the Jordanian pharmaceutical industry contributes positively to supporting the national economy, as it is considered a major export operator and industry, as it contributes positively to reducing the budget deficit (Private Hospitals Association - Jordan, 2023).

Therefore, this study came to identify the impact of dynamic capabilities in their dimensions (sensing capabilities, learning capabilities, coordination capabilities, and reconfiguration capabilities) on the performance of supply chains in their dimensions (supply chain integration, customer response, supply chain flexibility, and supply chain efficiency) in the Jordanian pharmaceutical companies.

Study Problem and Questions

The problem of the current study lies in the performance of supply chains in pharmaceutical companies in Jordan because it is considered one of the important companies that have emerged in recent decades, especially during the period of the Corona pandemic, and because of its pursuit of excellence in the pharmaceutical industry, in addition to that, companies face many activities related to the performance of their supply chains, including identifying supply sources, lack of raw materials and difficulty in accessing raw materials at times, especially after the Corona pandemic from Where the prices of raw materials and fuel prices rise, added to the short life of some products, logistics operations, there are also cooperative activities of many companies involved in supply chains.

By studying the most important modern methods related to supply chains that allow them to do the required efficiently, accurately and effectively, it is possible that dynamic capabilities

play a role in keeping pace with developments due to the disparity and variation in work levels, which can improve the performance of supply chains, as the researcher believes that there will be a role for cloud computing in improving the relationship between dynamic capabilities and supply chain performance, which motivated the researcher with his scientific curiosity to research this topic and crystallize the study problem. In the following main question:

What is the impact of dynamic capabilities on supply chain performance in Jordanian pharmaceutical companies?

Depending on the main question formulated in the study problem, the following sub-questions can be identified:

1. What is the relative importance of dynamic capabilities in their dimensions (sensing capabilities, learning capabilities, coordination capabilities, and reconfiguration capabilities) in Jordanian pharmaceutical companies?
2. What is the relative importance of supply chain performance in its dimensions (supply chain integration, customer response, supply chain flexibility, supply chain efficiency) in Jordanian pharmaceutical companies?

Study Importance

The importance of the study stems from the following:

Scientific Importance

This study is scientifically significant as it clarifies key concepts related to dynamic capabilities—such as sensing, learning, coordination, and reconfiguration capabilities—and their impact on supply chain performance, including integration, customer response, flexibility, and efficiency. These concepts are crucial in the field of operations management, where effective supply chain performance is essential for delivering materials accurately and efficiently. By exploring these concepts and presenting recent research, this study aims to enrich the academic literature and serve as a valuable reference for future researchers and professionals.

Practical Importance

Practically, the study is valuable to Jordanian pharmaceutical companies, offering insights that can improve their dynamic capabilities and supply chain performance. These companies play a vital role in supporting the national economy and are key contributors to the country's exports. The study's recommendations will be particularly useful for decision-makers, helping them to enhance their operations and sustain their competitive edge in the pharmaceutical sector.

Study Objectives

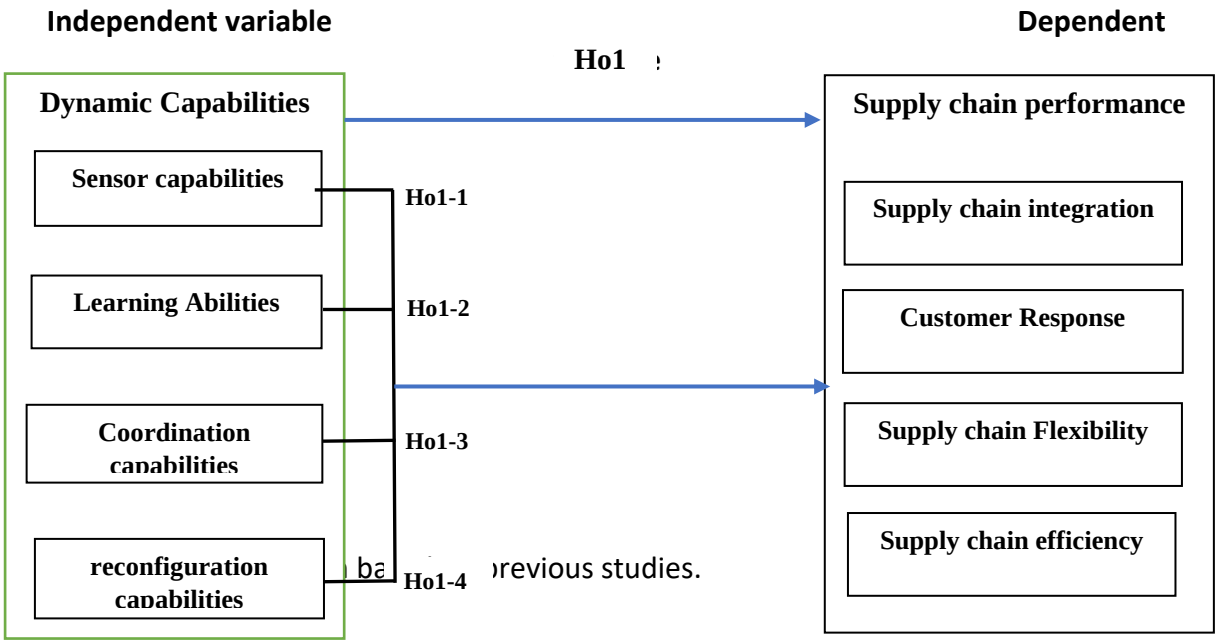
This study mainly aims to identify the impact of dynamic capabilities in their dimensions (sensing capabilities, learning capabilities, coordination capabilities, and reconfiguration capabilities) on the performance of supply chains in their dimensions (supply chain integration, customer response, supply chain flexibility, and supply chain efficiency) in the Jordanian pharmaceutical industry.

The following sub-objectives are sub-objectives of this main objective:

1. To identify the relative importance of dynamic capabilities in their dimensions (sensing capabilities, learning capabilities, coordination capabilities, and reconfiguration capabilities) in Jordanian pharmaceutical companies.
2. Identify the relative importance of supply chain performance in its dimensions (supply chain integration, customer response, and supply chain Flexibility, and supply chain efficiency) in Jordanian pharmaceutical companies.
3. Provide a set of recommendations and proposals regarding enhancing dynamic capabilities and their impact on supply chain performance in the Jordanian pharmaceutical industry.

Study Form

The following figure indicates the study model, including its variables and the dimensions of these variables, in addition to the references that were relied upon.



Literature Review

Dynamic Capabilities

Dynamic capabilities are the main source that helps organizations in charting the right path for the sustainability of their work, by detailing their practical and operational procedures, in order to achieve their goals and thus be able to serve society in light of the challenges and risks facing organizations, as a result of the existence of a dynamic, volatile and unstable environment in addition to the rapid technological development, which weakens the ability of organizations to continue and survive without bringing about changes that necessitated organizations to improve the performance of their work in the intangible cyber environment. Recently, which necessitated intensive efforts to be able to increase productivity and develop performance that reflects the importance of improving performance in it, making it an integrated system for the outstanding performance of administrative units as a result of the performance of human resources working within the organizational units in those organizations (Fadli et al., 2023).

The Dynamic Capabilities Framework offers a new theory of institutional and organizational decision-making, which can be recognized by those familiar with the behavioral theory of the

company, with evolutionary theorizing in economics, and with the characterization of the innovation process, and it also relies on what has become known as the resource-based approach, while the resource-based approach is inherently static, it is relevant to dynamic capabilities (Teece, 2009, 53).

It can be defined as "a framework that aims to search for modern knowledge, whether the roots of this knowledge are internal or external, and from this acquired knowledge organizational knowledge goes through stages of assimilation and transformation, preparing the way for the reshaping of the internal walls of the organization" (Balbaa, 2020). In addition, it is "a set of capabilities that enable the organization to integrate, modify and reconstitute its resources and energies, with the aim of keeping pace with its environment in managing human talent" (Mulla Tohi, 2020).

Dynamic capabilities according to the previous definitions are represented by the analysis of the competitive process that can lead to differences in organizational performance, taking into account how organizations develop and maintain their resources in dynamic environments, which arise from organizational processes and consist of structures, systems and cultures applied with the intention of feeling, seizing and reshaping organizational resources and competencies with changing external requirements (Mussetti, 2023).

If upgraded to meet the ever-changing market needs, companies are building a strong knowledge base that can continuously encourage company members to engage in active learning, systemic thinking, and information sharing with each other and partner collaborators throughout GVC activities (Chin & Rowley, 2018, 40).

Dynamic capabilities are defined as "the ability of organizations to replenish and develop their resources, reshape them and access new resources, and the resources that organizations need vary, from tangible to intangible such as knowledge and human resources" (Fadli et al., 2023).

Dynamic Capacity Dimensions:
The dimensions of the dynamic capabilities for the purposes of adopting this study are as follows:

Sensor Capabilities
It indicates the organization's ability to discover the external environment and understand the desires and needs of customers and market dynamics and respond to them, and through sensing organizations anticipate and understand customer requests before their competition, identify opportunities and threats early, and advance on competition in light of the era of fourth industrial wealth, so that these capabilities become crucial for organizations that work in a slow environment in adopting development techniques, so that organizations can gain a better competitive advantage than their competitors, which must sense opportunities to change business rules, threats and great risks Underlying within organizations, it is one of the most important factors that organizations must consider in building sensor capabilities through internal research and development. Douglas et al. 2021)

Management must carefully allocate resources to sensing, and a detailed enterprise strategy can become a candidate so that attention is not diverted to every opportunity and threat revealed by "successful" sensing. 2009, 17).

Learning Abilities

It refers to finding, acquiring and sharing the knowledge necessary to exploit the available opportunities, where the opportunity is determined after processing it with new products An essential assistant in deciding to rebuild operational capabilities by relying on education with new skills and abilities, and learning is defined as "the change in the tendency to respond under the influence of experience gained, that is, as a person acquires more experience and experience, we find that he tends to behave in ways that differ from the ways of behavior in which he was engaged before his current experience" (Harim, 2020, 133).

Individual dynamic abilities come in many forms, for example, research on dynamic abilities has referred to learning, product development, and acquisition as dynamic abilities, but when we seek to understand dynamic abilities, we must go beyond general classifications of ability types. And thinking about dynamic ability (Helfat et al., 2007, 6).

Coordination Capabilities

It indicates the process carried out by the human resource to vest and adapt organizations, in addition to helping to apply and deploy reconstituted capabilities, and coordination with groups and entities inside and outside the company, whether at home or abroad, is likely to be necessary to demonstrate the dynamic capabilities of multinational companies on an ongoing basis, as dynamic capabilities are present in the company's operations and routine procedures and also within the company's senior management team, and the continuous emergence of dynamic capabilities within multinational companies requires continuous activity in The field of entrepreneurship, where the entrepreneurial activity is different but related to administrative activity, entrepreneurship revolves around understanding opportunities, starting things, finding new and better ways to put things together by coordinating them, and it is about coordinating on a global basis to bring together disparate and usually specialized elements, obtaining "approvals" for non-routine activities, sensing business opportunities, and finding ways to expand capabilities globally (Teece, 2009, 166).

Reconfiguration Capabilities

The other two elements are the identification of dynamic acquisition-based capabilities and the reconfiguration capabilities that parallels the capabilities of alliance management, as both elements are very important to the success of the acquisition and have received considerable attention in the acquisition literature, and while the ability to choose appropriate acquisition contexts has been underestimated, moreover, a company with a weak ability to choose acquisitions will tend to get little benefit from the acquisitions it makes, no matter how good it is. Its capabilities in identification and reconfiguration (Helfat et al, 2007, 82).

It demonstrates the organization's reconfiguration capabilities to develop, reshape and integrate resources and processes in line with external environmental changes, especially rapid technological changes that require continuous improvements to meet social needs that benefit the organization (Sajit & Al-Humairi, 2023).

It is necessary to reorganize the formation of assets and organizational structures to maintain a sustainable advantage in the era of fourth industrial wealth, which demands widespread development technologies available to organizations, and take it as the main way of managing its business by digitizing every process that can be digitized, restructuring units within organizations, managing common specialized assets, and creating organizations that address structures that allow To develop modern knowledge and governance of human technology within the organization. Douglas et al. 2021)

Supply Chain Performance

Organizations work with their main suppliers within the preparations, plans, procedures and tasks to make decisions mutually to meet customer requirements, as internal integration is the level at which organizations collaboratively develop their own plans, procedures and administrative tasks, and customer integration refers to the level of organizations' use of customer contributions in the service delivery process, and it is certain that the performance of supply chains refers to the ability of chains to provide valuable and valuable products and services in the right quantities and at the right time, and at the lowest total cost to the end customer. Of supply chains, which entails efficiency and overall effectiveness involving flexibility and integration, and accordingly the field of sustainable production has gained great attention. Ruzo et al. 2023).

Supply chains are defined as "modern management methods, used to meet the challenges and risks in the era of economic activities and information technology, which include an integrated set of repetitive functions and events, passing through specific channels, in order to transform primary resources into finished finished products with the inclusion of additions of tangible value from the point of view of consumers who receive the final products", that is, it is "an integrated scope of activities starting from the activities of obtaining inputs, through the internal processes responsible for Converting inputs into finished products, it is a network of independent organizations or business units stretching from the first supplier to the end customer, which collaborate with each other to achieve common goals, resulting in benefits for all parties to the chains (Raouf & Khalil, 2023).

It is also "a process of continuous flow of funds, materials and information among its members in organizations, working to create efficiency and effectiveness that all members of supply chains must work together, as it has proven important in improving demand forecasts, inventory management and backup plans for demand disruptions, through the establishment of a decentralized structure with transparent and distributed data, and data exchange" (Yaqub et al. 2023).

While supply chain performance is defined as "the level of effectiveness and efficiency in achieving tasks related to the objectives of supply chains, effectiveness refers to the extent to which the goals are achieved as planned, while efficiency is how resources are used while working to achieve goals and in a way that saves costs such as inventory costs and operating costs, and in order for the organization to know the reality of the performance of its supply chains, it must measure that performance (Batayneh & Artema, 2021).

In addition, they are "integrated practices for using inputs and converting them into outputs in a way that leads to achieving quality, adherence to delivery dates, appropriate prices,

providing the necessary quantities and the required technology, that is, it is the process of the flow of goods and services and includes all operations that convert raw resources into final products, in addition to implementing activities that contribute to increasing customer value and gaining a competitive advantage in the market" (Khalifa, 2023).

Supply Chain Performance Dimensions

The dimensions of supply chains to be addressed in this study are as follows:

Supply Chain Integration

The integration of supply chains for sustainable production has a remarkable and continuous benefit, improving overall performance according to the integration of supply chains, allowing the smooth transfer of data, materials and activities across supply chains, enabling supply chains to eliminate duplication, reduce costs and increase overall efficiency by integrating their production, distribution and procurement processes, as this connectivity improves efficiency and performance by simplifying operations, reducing bottlenecks and improving resource use, and the response to supply chains, which is improved through Integration can react quickly to changes in consumer demand, market conditions and supply disruptions through the exchange of information and coordination of actions in real time, in other words is the strategic cooperation between the organization and supply chain partners in internal and external operations, with the aim of effective and efficient realization of products and services (Batayneh and Artema, 2021).

Customer Response

It means the ability of supply chains to respond quickly and make the organization able to meet changes to customer needs related to delivery quantities, means of transportation, and returns, as the response of supply chains contributes to adapting quickly, reducing lead times, and completing consumer requests more efficiently, which makes customers feel happy and comfortable with the performance of general organizations, and this process is related to knowing the customer, his needs, targeting operations, building a close relationship with him, working to solve the problems he faces, responding to his inquiries, and providing him with the necessary information about Using the product or knowing the nature of the service provided (Abdullah, 2018, 216).

Supply chain Flexibility

Flexible handling of flying variables as part of availability, distribution or shipping channels is aware of flexibility in export activities and currency conversion rates (Al-Ali, 2010, 282).
The extent of the ability to help supply chains respond in a timely manner, as the flexibility of supply chains is linked to the organization's efforts towards the proper use of available resources to respond quickly to disruptions, in addition to its ability to absorb and meet requests with high efficiency, i.e. resorting to options that are easy to activate and that contribute to meeting market requirements during the presence of disruption, and the speed of flexibility enjoyed by supply chains can be seen at the strategic and operational levels. (Queiroz et al. 2023).

Supply Chain Efficiency

The efficiency of supply chains and their ability to optimize the use of resources, and provide the best products and services at the lowest costs, there is constant pressure on managers to

improve the efficiency of their supply chains, allowing materials to move quickly and at low cost. This pressure has encouraged a series of new initiatives and approaches. But there is a growing realization that these new approaches also lead to unforeseen problems. In particular, they increase the vulnerability of supply chains to disruptions, and by removing the recession that was used to protect Supply chains are unexpected events, they create inflexible chains where a small, unexpected event can bring everything to a standstill (Waters, 2007, 59-60).

Previous Studies

The study of Abou Kamar et al (2023), aimed to develop and test an integrated model based on the presentation of dynamic capabilities in their dimensions (collaboration and integration, agility, responsiveness, and reconfiguration capabilities) to conduct a pilot examination of how dynamic capabilities affect the operational performance of food supply chains in hotels in Egypt through the mediating role of supply chain Flexibility and the modified impact of environmental uncertainty, and the model was tested using survey data from 160 managers of five and four star hotels in Egypt, and PLS-SEM was approved. In analyzing the data, the study found a positive impact of dynamic capabilities on the operational performance of hotel food supply chains through the mediating role of supply chain Flexibility. The results confirm that supply chain Flexibility mediates the relationship between dynamic capabilities and operational performance, moreover, the results showed that environmental uncertainty mitigates the aforementioned correlation, while orientation does not, and The study recommended deepening understanding of the dynamic capabilities that contribute to the performance of food supply chains in hotels, and these findings have critical implications for academics, managers and policymakers, as well as providing valuable insights into how to effectively control operational performance during disruptions.

Khalifa (2023), aimed to show the mediating role of organizational resource planning (ERP) systems and its impact on the relationship between the integration of supply chain performance in its dimensions (supply chain flexibility, supply chain integration, supply chain efficiency, customer response, and product innovation) and enhance operational performance by applying to pharmaceutical production companies in Dakahlia Governorate in the Republic of Egypt Arabic, where the researcher used the descriptive analytical approach and survey as the main tool for data collection. The population of this study includes employees of private pharmaceutical companies Dakahlia Governorate. The sample size was (287). The number of valid survey forms for analysis reached 245 forms, which represents a response rate of (85.4%) of the total distributed forms, after excluding non-refundable forms and forms that have not been fully completed, and PLS-SEM was adopted in data analysis, and the study found that there is a significant impact of supply chain performance on ERP systems, there is a significant impact of supply chain performance on operational performance, and there is a significant impact of ERP systems) in operational performance, and enterprise resource planning (ERP) in the impact of supply chain performance on the operational performance of employees of pharmaceutical production companies in Dakahlia Governorate.

The study of Fadli et al (2023), aimed to show the impact of dynamic capabilities in their dimensions (sensing capabilities, learning abilities, integration capabilities, and coordination capabilities) in improving the performance of educational organizations in their dimensions

(learning and growth, work procedures, and customer satisfaction) at the University of Baghdad, and the descriptive analytical approach was used representing the study community in the faculties of engineering (university presidency, departments and affiliates), from which the sample was withdrawn by (165), and the questionnaire was adopted as a study tool, and the SPSS v23 program was used. To process statistical data, the study found a positive correlation with significant significance between the dimensions of dynamic capabilities and the dimensions of performance improvement, and the study recommended many recommendations, the most important of which was despite the high levels indicated by the results tests in the statistical analysis of dynamic capabilities at the university researched, but it was on its senior leadership to invest the high levels of capabilities of its employees by giving them independence in performing their duties and practicing their activities.

Balbaa et al (2022), study aimed to identify the impact of strategic leadership styles in their dimensions (transformational leadership, reciprocal leadership) on the development of dynamic capabilities in their dimensions (the ability to sense opportunities, the ability to seize opportunities, and the reconfiguration ability) among commercial banks in Egypt, the study was applied to a sample of (360) individuals from employees of a number of government and private commercial banks, and the field data necessary to conduct the study was collected using a survey list, and the stability of internal consistency was ensured, The study found that there is a significant impact of the two strategic leadership styles in developing dynamic capabilities in the banks under study, and in light of the results of the study, it recommended creating the appropriate climate for managers and presidents that helps to apply the strategic leadership styles included in the study (transformational - mutual).

Studies in a Foreign Environment

The study of Yaqub et al (2023), aimed to determine the modified impact of the innovative climate on the relationship between improving supply chain alignment, supply chain agility, supply chain performance and environmental performance, the researchers used the quantitative research model and collected data through the survey questionnaire, and the sample was collected using the probabilistic cluster sample method and consisted of 350 individuals in executive and middle management positions, and PLS-SEM was adopted for data analysis, and the results indicated Improving supply chain alignment, supply chain agility and supply chain performance positively affect the environmental performance of companies, and this relationship is managed by an innovative climate, in addition to having many theoretical and practical implications, including the potential of block chain technology to improve supply chain sustainability and the importance of fostering an innovative climate to enhance the positive effects of improving supply chain alignment, supply chain agility and supply chain performance on environmental performance.

Musetti et al (2023), aimed to contribute to the literature on strategic management and dynamic capabilities in their dimensions (innovation, sensing changes in the external environment, resource capture and reshaping) in SMEs by identifying key strategic behavior traits in technology-based SMEs in São Paulo in Brazil, and the study method consisted of two stages: The first quantitative phase involved a survey of 104 micro and small technology companies, the results of which were analyzed using cluster analysis technique. The second qualitative phase included five case studies, the information of which was obtained through five semi-structured interviews and analyzed using content analysis technology, and the study

found that technology-based small and micro enterprises operating in sectors with high levels of dynamism and uncertainty, their strategic behavior depends on defining competition and innovation strategies, communicating strategic objectives to employees, allocating organizational resources for innovation, market research, investments in research and developing dynamic capabilities. The study defines competition and innovation strategies, communicates strategic objectives to employees, allocates organizational resources for innovation, and develops the dynamic capabilities of companies.

And the study of Ghasemi et al (2022), The study aimed to provide a qualitative model of the exact foundations of dynamic capabilities in their dimensions (sensing, tuning, and reconfiguration) among cloud computing service providers in Iran, and for this purpose the dimensions of dynamic capabilities were extracted based on the reference model of Teece (2007), and the study methodology is an expanded case study, and due to the novelty of the study subject and the absence of a reference model, the research components were collected through a review of ideal experiences and in-depth interviews with managers. For this reason, theoretical saturation was established by compiling a protocol of interviews and conversations with 14 senior managers of companies active in cloud computing in Iran, and then analyzing qualitative content, and the study found that the exact foundations of the sensing field, differ in the construction of the intuition of senior managers, and the direction of consumer behavior in countries similar to consumer behavior in the field of ICT in Iran.

The study of Kazmi and Ahmed (2021), aimed to evaluate and understand the dynamic distribution capabilities in their dimensions (demand sensing, demand management) in enhancing the performance of supply chains in their dimensions (response, customer needs), especially among manufacturing industries, and this study follows the quantitative approach by publishing a structured questionnaire of supply chain practitioners working in manufacturing industries in Pakistan, and a sample of 109 responses was collected from senior employees involved in sales and operations planning, and exploratory factor analyses were performed. The study found that demand sensing and management practices positively affect supply chain performance by creating dynamic distribution capabilities, and notes that distribution capabilities integrate both effective and efficient resource processing, however, the practice of demand management has little to do with supply chain performance, and The study recommended that supply chain management should expand into companies, and importance should be given because supply chain performance can provide a competitive advantage in order to maintain today's competitive market.

Muhic and Bengtsson (2021), study aimed to demonstrate the dynamic capabilities in their dimensions (sensor capabilities, tuning capabilities and switching capabilities) resulting from cloud sources in Sweden, recent Previous research has provided very limited insights into how the adoption and continuous use of cloud sources can stimulate and drive the development of business model innovation and impact the competitive advantage of the company, the inductive approach was adopted by comparing two longitudinal case studies of cloud sources, and a theoretical framework based on stage-based models To innovate the business model and see dynamic capability, we develop a business model innovation model based on the stage related to the adoption and continued use of cloud resources, and the model identifies three stages of business model innovation characterized by specific types of capabilities between the three stages, and the study found that three dynamic turns have been identified

that the company's manager and managers must overcome to progress From one stage to another in dynamic turns, there were three types of dynamic capabilities essential to move to the next stage, and the model contributes to a better understanding of the evolution of dynamic capabilities as well as the evolution of cloud sourcing and the innovation of cloud-based business models.

Study hypotheses

Based on the main question of the study and the sub-questions, the hypotheses of the study can be determined as follows:

Main hypothesis Ho1: There is no statistically significant effect at a significant level ($\alpha \leq 0.05$) of dynamic capabilities in terms of their dimensions (sensing capabilities, learning abilities, coordination capabilities, and reconfiguration capabilities) on supply chain performance in terms of their dimensions (supply chain integration, customer response, supply chain flexibility, supply chain efficiency) in Jordanian pharmaceutical companies.

1st Sub-Hypothesis: There is no statistically significant effect at a significant level ($\alpha \leq 0.05$) of sensing capabilities on supply chain performance in terms of their dimensions (supply chain integration, customer response, supply chain Flexibility, supply chain efficiency) in Jordanian pharmaceutical companies.

2nd Sub-Hypothesis: There is no statistically significant effect at a significant level ($\alpha \leq 0.05$) of learning abilities on supply chain performance in terms of its dimensions (supply chain integration, customer response, supply chain flexibility, and supply chain efficiency) in Jordanian pharmaceutical companies.

3rd Sub-Hypothesis: There is no statistically significant effect at a significant level ($\alpha \leq 0.05$) of coordination capabilities in supply chain performance in terms of their dimensions (supply chain integration, customer response, supply chain Flexibility, supply chain efficiency) in Jordanian pharmaceutical companies.

4th Sub-Hypothesis: There is no statistically significant effect at a significant level ($\alpha \leq 0.05$) of reconfiguration capabilities on supply chain performance in terms of their dimensions (supply chain integration, customer response, and supply chain Flexibility, and supply chain efficiency) in Jordanian pharmaceutical companies.

Method and procedure

First: Study Methodology

This part was devoted to presenting the study methodology, methods and procedures that will be followed in this study, in terms of the type of study, the nature of the study, the purpose of the study, and the strategy followed in it, and the study population, sample and analysis unit will be determined, and the study tool and its parts and how to develop it, and the extent of its validity and stability and the statistical methods expected to be used in data processing. The researchers used two main sources of information:

Secondary Data Sources

Many Arabic and foreign literature has been reviewed, including books, university theses and scientific research related to the nature of the research, search engines available on the Internet will be used to obtain information that will help us enrich the study with the required information, and researchers will document data and references based on the method of documenting the American Psychological Association (APA, 2020).

Primary Data Sources

In collecting primary data, the study relied on the questionnaire as the main tool for the study in order to address the analytical aspects of the study subject.

Second: Study Population

(270) questionnaires were distributed to the study population, of which (228) questionnaires valid for analysis were retrieved after excluding (20) questionnaires as they are not suitable for analysis, the response rate was (84).4%).

Study Tool and Variables

The researchers developed a questionnaire to collect data as a tool and measure the opinions of the subjects of the study working in the Jordanian pharmaceutical companies.

Part I: Paragraphs related to the demographic characteristics of the sample under study, including (gender, age, experience, and academic qualification) for workers in Jordanian pharmaceutical companies.

Part II: 30 paragraphs on the variables of the study.

Table No

(1) Distribution of Questionnaire Paragraphs

Variable	Dimension	Number of paragraphs
Dynamic Capabilities	Sensor capabilities	5
	Learning Abilities	5
	Coordination capabilities	5
	reconfiguration capabilities	5
Supply chain performance		10

To measure "dynamic abilities", the Likert quintuple scale (very much agree, highly agree, moderate agree, slightly agree, very little agree) was numerically (5,4,3,1,2).

Table (2)

Distribution of the values of the answers to the five Likert questions

Response	I agree to a very large degree	I agree to a large degree	I agree to a moderate degree	I agree to a small degree	I agree to a very small degree
Grade	5	4	3	2	1

Authenticity and Reliability of the Study Tool

Authenticity of the Tool

Virtual Honesty

To demonstrate the validity of the study tool, and in order to ensure the appropriateness of the paragraphs of the tool to measure the variables of the study and the linguistic formulation, the researchers were keen to present the questionnaire in its initial form to arbitrators from the competent and competent arbitrators.

Construction Validity

The scale (Kaiser-Mayer-Olkin) called (KMO) is used to test the possibility of interpreting the phenomenon by the current sample size, the closer its result is to the correct one, the sample is sufficient and the less the more the sample is not enough, while the test (Bartlett) is an indicator of the relationship between the variables of the study, which must be statistically significant less than (5%), and the following is a table of KMO values for each dimension of the study:

Table 3

KMO and Bartlett

	Sensor capabilities	Learning Abilities	Coordination capabilities	Reconfiguration capabilities	Supply chain performance
KMO	0.889	0.842	0.886	0.845	0.894
Bartlett Test	P ≤ 0.05	P ≤ 0.05	P ≤ 0.05	P ≤ 0.05	P ≤ 0.05

It is noted from the previous table that the values of (KMO) are close to the correct one, so the sample is suitable for statistical analysis, and it is noted that all variables do not have a significant level of value at (5%) or greater.

Tool Stability

The credibility of the study tool is intended to check if the tool performs its tasks and the most famous thing used for this is the internal consistency coefficient of the answers called the Croach Alpha Nabach test, whose range is between zero and the correct one, and the stability coefficient is greater than (0.60) applicable.

Table (4)

Crowe Nabach Test Results

figure	Variable	Number of paragraphs	Crowe Nabach Laboratories
1	Sensor capabilities	5	0.870
2	Learning Abilities	5	0.891
3	Coordination capabilities	5	0.870
4	Reconfiguration capabilities	5	0.847
5	Supply chain performance	10	0.913

The values of Crowe Nabach alpha for the study sample are all greater than (0.6) and therefore all of them are valid for the purposes of the study.

Statistical Processing

Questionnaire data were entered into the Statistical Packages for Social Sciences (SPSS) program for analysis using the following statistical methods:

- Analysis of frequencies and percentages of demographic sample characteristics.
- Descriptive statistics such as standard deviations and arithmetic averages.
- VIF test to test the readiness of variables.
- Simple and multiple regression analysis.

Statistical Description of Demographic Variables

This part puts in Table No. (5) the demographic characteristics in two parts, the first for individuals represented by gender, age, academic qualification and experience, and the second for the demographic characteristics of the hotel in question, represented by the number of employees, the age of the hotel and its classification.

Table No. (5)
Of Frequencies of Demographic Variables

Variable	classification	Number	Percentage
Gender	male	131	55.2
	female	97	44.8
	Total	228	100
lifetime	25 years and under	22	9.6
	26-30 years	48	21.1
	31-35 years	72	32.6
	36 years and above	86	37.7
	Total	228	100
Education Qualification	Diploma or less	43	18.9
	Bachelor	162	71
	Master	15	6.6
	Doctorate	8	3.5
	Total	228	100
Experience	5 Years & Under	36	15.8
	6-10 years	70	30.8
	11-15 years	66	28.9
	More than 15 years	56	24.5
	Total	228	100

Table (5) shows the distribution of the study sample according to demographic factors, and it reached the following:

I. The percentage of males to the sample was (55.2%) while the percentage of females was (44.8%).
II. The study found that (37.7% of the respondents are over 36 years old, while the percentage of those aged between (31-35) years (32.6%), and those aged between (26-30) years (21).1%), and the lowest percentages were for those aged 25 and under, where their percentage was (9.6%).
III. Among the respondents, the percentage of bachelor's degree holders was (71%), followed by the diploma and below (18.9%), and then master's degree (6.6%), and doctorate (3.5%).
IV. The respondents' experiences were similar, with a percentage of his experience reaching (6-10) years and more (30.8%), followed by his experience ranging between (11-15) years (28).9%), while those with more than 15 years of experience were (24.5%), and the percentage of those with less than 5 years of experience (15.8%).

Descriptive Analysis

All the responses of the subjects of the study were converted into degrees in preparation for finding the arithmetic mean and standard deviation for each field in the study, in Tables No. (6, 7) the standard that was adopted.

Table (6)
Statistical Criterion for Calculating the Degree of Significance of the Arithmetic Averages of the Study Variables

Period length =	Upper – Minimum	=	5 -1	= 1.33
	Number of levels		3	

Therefore, the number of levels is as follows:

Table (7)
Statistical criterion for interpreting the arithmetic averages of the study variables

Level	Period
Low	1– 2.33
Average	2.34 – 3.66
High	3.67 - 5

Independent Variable: Dynamic Capabilities

Table 8
Averages, deviations and grade for dynamic capacity dimensions

Axis	Arithmetic mean	Standard deviation	Rank	Appreciation
Sensor capabilities	3.75	0.76343	4	High
Learning Abilities	3.97	0.66716	2	High
Coordination capabilities	4.01	0.7211	1	High
reconfiguration capabilities	3.87	0.7295	3	High
Dynamic Capabilities	3.90	0.66592		High

Table (8) indicates the averages, deviations and rank of dimensions of dynamic capabilities, and the table also indicates a high-grade score with an arithmetic average of (3.90) for all its dimensions.

The dimension table places coordination capabilities in first place with an arithmetic mean (4.01) and standard deviation (0.721), learning abilities ranked second with an arithmetic mean (3.97) and a standard deviation (0.667), then reconfiguration capabilities with an arithmetic mean (3.87) and a standard deviation (0.7295), and finally sensing abilities with an arithmetic mean (3.75) and a standard deviation (0.763).

Multicollinearity Test

To ensure that there are no high correlations between the independent variables and to ensure that the variables are free from the phenomenon of linear correlation that hinders the multiple regression test, the researchers used the variance inflation coefficient (VIF) and the following are its results:

Table 9

Correlation test results between independent variables

Independent variables	VIF	Tolerance	Durbin-Watson
Sensor capabilities	4.738	0.211	2.213
Learning Abilities	4.320	0.231	
Coordination capabilities	3.447	0.290	
reconfiguration capabilities	3.885	0.257	

Through the previous table, all values of the variance inflation coefficient (VIF) are greater than 1 and less than 10, and this confirms the absence of the phenomenon of multiple linear correlation between independent variables, and the permissible variance values, all of which are greater than (0.05), showed that there is no high correlation between these areas, and the Deburn-Watson coefficient of (2.213) indicates that the errors are randomly distributed and unintentional.

Hypothesis Test of the Study

Main null hypothesis test (H01)

No statistically significant effect at the level of statistical significance ($\alpha \leq 0.05$) Dynamic capabilities in their combined dimensions in supply chain performance in Jordanian pharmaceutical companies.

Table 10
Multiple Regression Test Results for the Main Hypothesis

The result of the independent variable with both dimensions				
Correlation coefficient (r)		0.776		
Coefficient of determination (R2)		0.602		
F		122.090		
Degrees of Freedom (DF)		4.000		
Significance level (.sig)		0.000		
The result for each dimension of the independent variable				
Dimension	**B**	**t**	**Beta**	**Significance level (.sig)**
Sensor capabilities	0.000	-0.005	0.000	0.270
Learning Abilities	0.058	1.105	0.081	0.996
Coordination capabilities	0.207	3.736	0.285	0.000
reconfiguration capabilities	0.356	6.552	0.453	0.000

We conclude from Table (10) a positive relationship between the dependent variable and the independent variables through the high value (R = 0.776), and the independent variables together according to the coefficient of determination (R2) affect by (60%) the performance of supply chains in the Jordanian pharmaceutical companies, and the sensor capabilities are the most influential on the performance of supply chains in the Jordanian pharmaceutical companies, and this is evidenced by the value of (Beta) of (45%), and the value of F is greater than (0.05) at the significance level (0.000). We reject the null hypothesis and accept the alternative hypothesis there is a statistically significant effect at the level of statistical significance ($\alpha \leq 0.05$) of dynamic capabilities in their combined dimensions on the performance of supply chains in Jordanian pharmaceutical companies.

Test the First Sub-Hypothesis of the Main Hypothesis (H0-1)
There is no statistically significant effect at the level of statistical significance ($\alpha \leq 0.05$) Sensing capabilities in the performance of supply chains in Jordanian pharmaceutical companies.

Table 11
Simple regression test results for the first sub-hypothesis of the main hypothesis

r	**R2**	**F Calculated**	**Significance level Sig.**	**t**	**B**	**The result of the null hypothesis**	**Decision to accept the alternative hypothesis**

0.723	0.523	357.39	0.000	18.905	0.525	refuse	acceptance

We conclude from Table (11) a positive relationship between the dependent variable and the independent variable of sensing capabilities through the high value (R = 0.723), and the independent variables together according to the coefficient of determination (R2) affect by (52%) on the performance of supply chains, and the value of F Greater than (0.05) at the significance level (0.000). We reject the nihilistic hypothesis and accept the alternative hypothesis there is a statistically significant effect at the level of statistical significance (α ≤ 0.05) of sensing capabilities in supply chain performance in Jordanian pharmaceutical companies.

Testing the Second Sub-Hypothesis of the Main Hypothesis (Ho1-2)
There was no statistically significant effect at the level of statistical significance (α ≤ 0.05) of learning abilities in supply chain performance in Jordanian pharmaceutical companies.

Table (12)
Simple regression test results for the second sub-hypothesis of the main hypothesis

R	R2	F Calculated	Significance level Sig.	T	B	The result of the null hypothesis	Decision to accept the alternative hypothesis
0.687	0.473	292.133	0.000	17.092	0.493	refuse	acceptance

We conclude from Table (12) a positive relationship between the dependent variable and the independent variable of learning abilities through the high value (R = 0.687), and the independent variables together according to the coefficient of determination (R2) affect by (47%) the performance of supply chains in the Jordanian pharmaceutical companies, and the value of F Greater than (0.05) at the significance level (0.000). We reject the nihilistic hypothesis and accept the alternative hypothesis there is a statistically significant effect at the level of statistical significance (α ≤ 0.05) of learning abilities in supply chain performance in Jordanian pharmaceutical companies.

Testing the Third Sub-Hypothesis of the Main Hypothesis (H0-3): There is no statistically significant effect at the level of statistical significance (α ≤ 0.05) of coordination capabilities in supply chain performance in Jordanian pharmaceutical companies.

Table 13
Simple regression test results for the third sub-hypothesis of the main hypothesis

R	R2	F Calculated	Significance level Sig.	T	B	The result of the null hypothesis	Decision to accept the alternative hypothesis
0.651	0.423	239.346	0.000	17.092	0.446	refuse	acceptance

We can conclude from Table (13) a positive relationship between the dependent variable and the independent variable of coordination capabilities through the high value (R = 0.651), and the independent variables together according to the coefficient of determination (R2) affect

by (42%) the performance of supply chains in the Jordanian pharmaceutical companies, and the value of F is greater than (0.05) at the level of significance (0.000). We reject the nihilistic hypothesis and accept the alternative hypothesis There is a statistically significant effect at the level of statistical significance (α ≤ 0.05) of coordination capabilities in supply chain performance in Jordanian pharmaceutical companies.

Testing the Fourth Sub-Hypothesis of the Main Hypothesis (H0-3)

There is no statistically significant effect at the level of statistical significance (α ≤ 0.05) of reconfiguration capabilities in supply chain performance in Jordanian pharmaceutical companies.

Table (14)

Simple Regression Test Results for the Fourth Sub-Hypothesis of the Main Hypothesis

R	R2	F Calculated	Significance level Sig.	T	B	The result of the null hypothesis	Decision to accept the alternative hypothesis
0.750	0.563	420.324	0.000	20.502	0.589	refuse	acceptance

We can conclude from Table (14) a positive relationship between the dependent variable and the independent variable of reconfiguration capabilities through the high value (R = 0.750), and the independent variables together according to the coefficient of determination (R2) affect by (56%) on the performance of supply chains in the Jordanian pharmaceutical companies, and the value of F is greater than (0.05) at the significance level (0.000). We reject the nihilistic hypothesis and accept the alternative hypothesis There is a statistically significant effect at the level of statistical significance (α ≤ 0.05) of reconfiguration capacities on supply chain performance in Jordanian pharmaceutical companies.

The Results of the Study

The study found the following:

1. A positive relationship between the dependent variable and the independent variables, in addition to the presence of a statistically significant effect at the level of statistical significance (α ≤ 0.05) of dynamic capabilities in their combined dimensions on the performance of supply chains in Jordanian pharmaceutical companies.
2. A positive relationship between the dependent variable and the independent variable of sensor capabilities, in addition to the presence of a statistically significant effect at the level of statistical significance (α ≤ 0.05) of sensor capabilities in the performance of supply chains in Jordanian pharmaceutical companies.
3. A positive relationship between the dependent variable and the independent variable of learning abilities, in addition to the existence of a statistically significant effect at the level of statistical significance (α ≤ 0.05) of learning abilities in the performance of supply chains in the Jordanian pharmaceutical industry.
4. A positive relationship between the dependent variable and the independent variable of coordination capabilities, in addition to the presence of a statistically significant effect at the level of statistical significance (α ≤ 0.05) of coordination capabilities in supply chain performance in Jordanian pharmaceutical companies.

5. A positive relationship between the dependent variable and the independent variable of reconfiguration capabilities, in addition to the presence of a statistically significant effect at the level of statistical significance ($\alpha \leq 0.05$) of reconfiguration capabilities in the performance of supply chains in Jordanian pharmaceutical companies.

Recommendations

The study recommended the following:

1. Conduct periodic analyses of various dynamic capabilities and develop strategies to improve them.
2. Develop effective data collection and analysis systems for early detection of changes and opportunities in the market.
3. Establish regular training programs to improve employees' skills and increase their knowledge of modern technologies and best practices.
4. Enhance organizational Flexibility by providing tools and resources that allow operations to be quickly reshaped in response to changes in the market.

References

Abdullah, Taha, K. M. (2018). *Production and operations management*. Dar Wael for Publishing and Distribution.

Kamar, A. M., Albadry, O. M., Sheikhelsouk, S., Ali Al-Abyadh, M. H., & Alsetoohy, O. (2023). Dynamic capabilities influence on the operational performance of hotel food supply chains: A mediation-moderation model. *Sustainability*, *15*(18), 1-23. https://www.mdpi.com/2071-1050/15/18/13562

Al-Ali, Mohamed, A. S. (2010). *Modern warehouse management supply chain management* (2nd ed.). Dar Wael for Publishing and Distribution.

Al-Ali, Majeed, M. H. & Al-Lahibi, Ahmed, A. S. (2023). *Dynamic capabilities are an entry point for activating the elements of strategic direction*. Dar Al-Yazuri Scientific Publishing and Distribution.

Al-Najjar, Juma'a, F., Al-Najjar, Juma'a, N., & Al-Zoubi, Radi, M. (2020). *Methods of scientific research: an applied perspective* (5th ed.). Dar Al-Hamid for Publishing and Distribution.

Balbaa, Saad, H. M., El-Sayed, Ibrahim, M. M., & Moneim, A., Eldin, M. B. (2022). The impact of strategic leadership styles on the development of the dynamic capabilities of commercial banks in Egypt. *Scientific Journal of Economics and Commerce*, *3*, 797-827.

Batayneh, Salama, A. R., & Artema, Jaza, H. (2021). The impact of strategic directions on supply chain performance: an applied study on the dairy company today. *World Journal of Economics and Business*, *10*(3), 513-534.

Chin, T., & Rowley, C. (2018). *The future of chinese manufacturing: Employment and labor* challenges. Elsevier.

Aghimien, D., Aigbarboa, C., & Matabane, K., (2021). Dynamic capabilities for constitution organization in the fourth industrial revolution era. *Interactional Journal of Construction Management, 23*(11), 1-10. 10.1080/15623599.2021.1940745

Fazli, Hussein, I., Shamran, Abdulrasoul, A., & Kazim, Kamel, Z. (2023). The Impact of dynamic capabilities on improving the performance of educational organizations: An exploratory Study at the University of Baghdad. *Tikrit Journal of Administrative and Economic Sciences*, *19*(62), 358-373.

Ghasemi, A., Isaai, M. T., Bandarian, R., & Ekhtiarzadeh, A. (2022). Designing a qualitative model of the micro foundations of dynamic capabilities in cloud computing service providers in iran. *Innovation management and operational strategies*, *3*(2), 150-159.

Helfat, C. E., Finkelstein, S., Mitchell, W., Peteraf, M., Singh, H., Teece, D., & Winter, S. G. (2007). *Dynamic capabilities: Understanding strategic change in organizations*. John Wiley and Sons. https://doi.org/10.21608/jsst.2023.174250.1525

Hugos, M. H. (2018). *Essentials of supply chain management*. John Wiley and Sons.

Kazmi, S. W., & Ahmed, W. (2021). Understanding dynamic distribution capabilities to enhance supply chain performance: A dynamic capability view. *Benchmarking: An International*

Muhic, M., & Bengtsson, L. (2021). Dynamic capabilities triggered by cloud sourcing: A stage-based model of business model innovation. *Review of Managerial Science*, *15*(1), 33-54. https://doi.org/10.1007/s11846-019-00372-1

Tohi, M. (2020). The contribution of dynamic organizational capabilities to human talent management: An analytical study of the opinions of a sample of administrative leaders in the presidency of the University of Mosul. *Journal of Economics and Administrative Sciences*, *26*(120), 296-316.

Musetti, T. F., Alves Filho, A. G., & Nagano, M. S. (2023). Strategic behavior and dynamic capabilities: Studies in micro and small technology-based firms. *International Journal of Innovation*, *11*(2), 1-32.

Private Hospital Association – Jordan (2023). *Overview of the Jordanian health sector*. Retrieved 25/11/2023 from the website, PHA (phajordan.org). https://phajordan.org/EN-article-3809-

Queiroz, M. M., Fosso Wamba, S., Raut, R.D.,& Pappas, I.O. (2023). Does flexibility matter for supply chain performance in disruptive crises with scarce resources? *British Journal of Management*. https://doi.org/10.1111/1467-8551.12748

Raouf, Saher, M., and Khalil, Jamal, R. (2023). Measuring the possibility of using block chain supply chains in following up the performance of industrial supply chains and their role in achieving competitive advantage (a survey study of the performance of a sample of academics in Iraqi universities). *Journal of Business Economics*, *5*(2), 251-272. https://dx.doi.org/10.37940/BEJAR.2023.5.2.14

Ruzo-Sanmartín, E., Abousamra, A. A., Otero-Neera, C., & Svensson, G. (2023). The impact of the relationship commitment and customer integration on supply chain performance. *Journal of Business and Industrial Marketing*, *38*(4), 943-957. DOI 10.1108/JBIM-07-2021-0349

Sajit, Fatima Hakim, & Al-Humairi, Bashar Abbas (2023). The impact of dynamic capabilities on strategic renewal analytical research of the opinions of a sample of managers in the General Company for Iraqi Cement in Najaf Governorate. *Journal of the College of Business and Economics for Economic Studies*, *15*(2). 128-149.

Teece, D. J. (2009). *Dynamic capabilities and strategic management: Organizing for innovation and growth*. Oxford University Press, USA.

Waters, D. (2007). *Supply chain risk management: vulnerability and Flexibility in logistics*. Kogan Page Publishers.

Yaqub, S., Ain, N. U., Saleem, H. M. N., & Akbar, M. J. (2023). Nexus of block chain alignment, supply chain agility, supply chain performance and their impact on firm's environmental performance: a developing country perspective. *Journal of Contemporary Business and Islamic Finance (JCBIF), 3*(1), 250-263.