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The Effect of Supply Chain Management on Firm Performance of Jordan Food-Based Firms: The Role of Competitive Advantage as a Mediating Variable

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Abstract

Over the last two decades, the market has expanded internationally due to increased market competition. Customers concentrate more on receiving the service or product at the specified location and time for the lowest possible price. Due to these client demands; businesses have begun to understand that they need to increase internal productivity and competitiveness in their supply chains. Organizations must concentrate on their supply chain management processes in order to be more competitive. Certain procedures are essential for supply chain management to be more profitable and competitive. Supply chain management is a complex network of manufacturers, distributors, retailers, customers, and suppliers. Each of these must work together so they can convert raw materials into finished products. The unstable markets require any company to put the customer at the center of its worries, and the supply chain management must now be entirely focused on the latter. This is due to the increasing liberalization of the Jordanian economy and the entry of global corporations. Four key tasks must be completed by a business in order to effectively advertise its goods: supply, production, distribution, and marketing.

Keywords: Supply Chain Management, Firm performance, Competitive Advantage.

Introductions

"Supply chain management is important for businesses because it is the strategic coordination of business functions within an organization's supply chain to integrate supply and demand management. This can undoubtedly give the business a competitive advantage and can optimize the performance of the business. The application of how the network of manufacturing and distribution operations might collaborate to satisfy market demand is known as supply chain management. The supply chain's long-term strategic goals are what it uses to compete successfully in the market. According to Zulkarnain et al. (2018) and Maddeppungeng (2017), competitive advantage can operate as a mediator between supply chain management practices and firm performance, boosting competitive advantage and

enhancing company performance. Khaddam et al. (2020), Palandeng et al. (2018), and Pono et al. (2020) stated supply chain management has a positive and significant effect on competitive advantage. Al-Douri (2018), and Kumar &Kushwaha (2018) stated supply chain management has a positive and significant effect on firm performance.

Supply chain management has become a crucial source of competitive advantage for companies. The goal of supply chain management research is to more efficiently use and deploy resources throughout the whole company in order to boost the overall value of the business. A network of operations that adds value between a company's suppliers and customers is known as supply chain management. the underlying assumption of supply chain management.

The global supply chain management is made up of all these functions, and for this chain to be managed optimally, the four functions must be intertwined while also taking into account the other supporting functions of the business, such as finance and human resources. In the administration of supply chain management, or "SCM" the whole is crucial. Additionally, in an environment characterized by intense competition, erratic demand, a trend toward economies of scale and outsourcing, and a brief product life cycle, supply chains appear to be becoming more and more vulnerable and brittle (Mohamed et al., 2020).

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SCM must take up a new challenge and contribute to the feasibility and execution of this firm offer, to satisfy demand and allow the company to retain its revenue objectives and a fortiori customer happiness. This necessitates the deployment of techniques that may reduce costs and improve earnings as well as its speed of reaction (Kale, 2017).

Problem Statement

most studies have focused on conventional supply chain management and firm performance. The conventional management style of supply chain management from suppliers to consumers, which is a simple, straightforward purchasing connection, is no longer useful and practical for supply chain management efficiently and effectively. In the current dynamic business environment, selecting and formulating an appropriate supply chain management that integrates and collaborates with external and internal participants is one of the most essential issues for most organizations to improve performance and enhance their competitive position (Alam, 2022). Integration of activities and collaboration with strategic supplier partnerships, customer relationships, quality of information sharing, and level of information sharing may be combined and coordinated throughout the supply chain management to better serve end users and consumers while enhancing the efficiency of individual supply chain participants. (Atnafu & Balda, 2018; Ulaga & Eggert, 2006) and the overall firm performance. Therefore, supply chain managers are required to comprehend and

address various participants in the firm's supply chain (Dandis et al., 2021; Shukla & Pattnaik, 2019).

First, various studies about supply chain management and its impact on firm performance have been conducted. Nevertheless, limited attention has been paid to the linkage between supply chain management, competitive advantage, and firm performance. Thus, it is crucial and beneficial to draw attention to and fill this research gap by examining empirically the direct impact of supply chain management on firm performance and the indirect impact through competitive advantage as a mediating variable on the relationship between supply chain management and firm performance in Jordanian manufacturing companies. In Jordan, few studies have been conducted on the supply chain management and firm performance of Jordanian manufacturing companies, specifically from the perspectives of manufacturing strategy, outsourcing strategy, channel strategy, customer service strategy, and the network of assets in the supply chain. Based on the above discussion, this study will attempt to explore the direct impact of supply chain management on firm performance. It also examines the indirect impact of competitive advantage as a mediating variable on the relationship between supply chain management and firm performance in Jordanian manufacturing companies.

Second, it can be noticed that much of what has been published has focused on the direct impact of supply chain management on firm performance without considering the role of competitive advantage and its mediating effect on this relationship. The competitive advantage can emerge from various sources such as operations, customer relationships, product quality, pricing, and more (Atnafu, Balda, & Atnafu, 2018; Ulaga & Eggert, 2006), especially in the current business environment where the rivalry amongst rivals is fierce and there is demand for higher-quality goods, better customer service, and low pricing. While there are numerous studies relating SCM methods to the creation of competitive advantage, they are frequently dispersed and lack key information (Shukla & Pattnaik, 2019). Few studies attempt to clarify or explain the connection between these two factors, frequently referring to this phenomenon as a "black box". Additionally, these studies frequently concentrate on specific regional aspects of the SCM. For instance, Atnafu et al. (2018), Rudberg & Olhager (2003), and Shukla & Pattnaik (2019) focus on the company's relationships with distributors, while others examine the integration of logistics systems within the organization. (Rudberg & Olhager, 2003) or on the company's relations with distributors (Shukla & Pattnaik, 2019).

Third, most of the published work is related to developed countries, and limited empirical studies are related to developing countries. Accordingly, this study will focus on Jordan and the manufacturing industry, which is one of the most influential industries in the Jordanian economy.

In brief, various studies about supply chain management and its impact on firm performance have been conducted. Nevertheless, limited attention has been paid to the linkage between supply chain management, competitive advantage, and firm performance. Thus, it is crucial and beneficial to draw attention to and fill this research gap by examining empirically the direct impact of supply chain management on firm performance and the indirect impact through competitive advantage as a mediating variable on the relationship between supply chain management and firm performance in Jordanian manufacturing companies. In Jordan, few studies have been conducted on the supply chain management and firm performance of

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Study Questions

Aligned with the problem statement the following question can be derived and will guide the design of the study:

What is the effect of Supply Chain Management (SCM) with its dimension (Strategic supplier partnerships (SSP), Customer relationships (CR), Quality of Information Sharing (QIS), and Level of Information Sharing (LIS)) on Firm performance (FP)with its dimensions (Reliability (R), Flexibility (F), Cost (C) and Asset Management (AM), through the mediating role of Competitive Advantage (CA) with its dimension (Price/Cost (PC), Quality (QL), Product Innovation (PI), Time To market (TTM), in the Jordan Food Based Firms.

Study Objectives

The study aims to achieve five objectives related to food-based firms in Jordan. These objectives are as follows:

1. To examine that supply chain management practices (i.e strategic partnership, customer service, information quality and Level of Information Sharing) and competitive advantages among food – based firms in Jordan.
2. To examine that supply chain management practices (i.e strategic partnership, customer service, information quality and Level of Information Sharing) and firm performance among food-based firms in Jordan.
3. To understand the relationship between competitive advantage and firm performance among food-based firms in Jordan
4. To examine the mediation between competitive advantage and supply chain management practices (i.e strategic partnership, customer service, information quality and level of information sharing) and firm performance among food-based firms in Jordan.
5. To understand the moderating effect of time to market between the relationship of competitive advantage and firm performance among food-based firms in Jordan Research Questions.

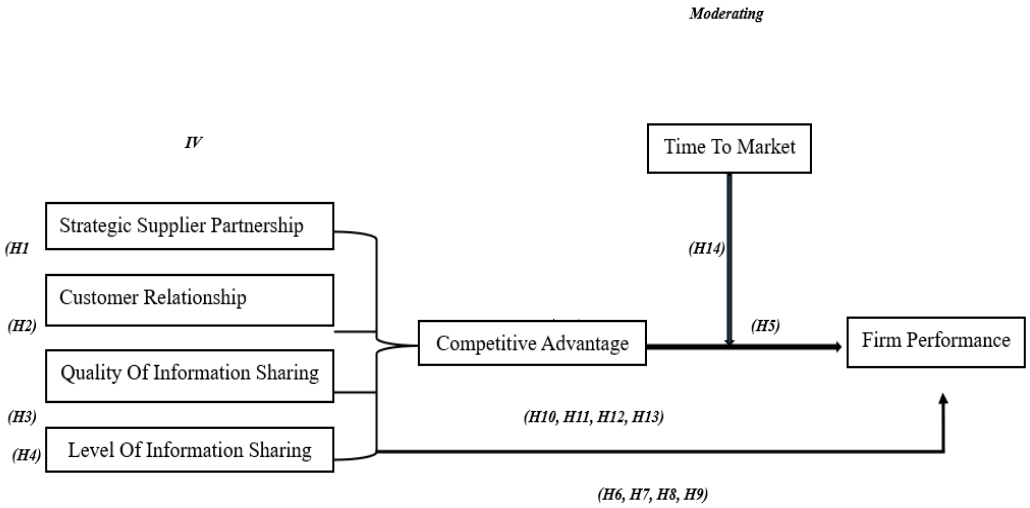

Fig 1: Conceptual Framework

Literature Review

we will aim to first retrace the history of the concept of SCM. We will go on to cite the various indicators and tools of this strategy upstream and downstream. Thereafter, we will focus on the importance of supply chain management in offering value to customers and strengthening the company's performance, a source of sustainable CA.

Appearance of SCM

The term SCM appeared in the late 90s. Since then, these notions have been found in different fields of research (logistics, production, information systems, etc.). It means: "Managing upstream and downstream relationships with suppliers and customers to deliver superior customer value has a lower cost across the supply chain" (Martin, 2005).

The development of supply chains is parallel to that of ICT (New Information and Communication Technologies) which allows commercial and technical communication between industrial partners. Note that the term "chain" is understood from the point of view of the value-added process.

Ultimately, the recent evolution of industrial organizations remains based on the model of integration of the production system, whose borders now go beyond those of the company to reach that of a company resulting from a more or less sustainable partnership between industrial actors.

The concept of SCM

In order to better clarify this new concept, we must present several definitions according to different authors: Cooper and Ali (1997) define SCM as "a philosophy that tends towards an integrated management of all flows from the distribution channel of suppliers to end use" ... This definition implies the need for the integration of flows and actors.

Tan et al. (1998) considered that "SCM includes supply chain management from the basic raw material to the availability of the final product (and possibly recycling). The SCM focuses on CA and how firms use supplier-managed processes, technologies, and capabilities. It represents a traditional intra-organizational technology of business partners towards a common goal of optimization and efficiency." This definition emphasizes the need for a shared intra- and inter-organizational vision to create relational value.

The Challenges of SCM

The difficulties of SCM have grown to be so delicate that organizations have been formed to address them: supply chain development managers, flow managers, supply chain managers, etc. In the 1980s, a limited number of new roles were created both at the corporate and management committee levels. These tasks have the trait of developing continuously in order to conform to the new equilibriums in which supply chain management and operations management must be incorporated. As a result, operational managers were required in order to handle the administration of increasingly massive operational units. However, it is also vital to have project management and information system expertise.

The information technology revolution is a recent trend that the entire globe is seeing. The phenomena of forced integration, alliances, and economic, political, and industrial blocs, as well as communication, the majority of institutions are changing in a number of ways to keep up with these changes and the competition, as well as to maximize their earnings and strengthen their financial position, which won't It can only be accomplished by careful program structure, planning, and implementation for each of the institution's activities. (Alqasim, A-Larj ,2015).

Definitions of Key Terms

Supply Chain Management

Strategic Partnerships with Suppliers

Already in the late 1980s, it was observed that collaboration with suppliers could lead to a CA (Liu et al., 2014). Also, Alshourah et al. (2018) argue that the companies that will succeed in the future are those that have established partnerships and relationships with suppliers. The implications of this observation are now visible. For example, the increase in the number of suppliers, long-term contracts with suppliers, and consolidated efforts are a direct result of observation (Christopher, 1998; Ekenstedt, 2004). By reducing the number of suppliers and cooperating with strategically selected suppliers, companies are trying to better control cash flows (Ekenstedt, 2004).

Customer Relations

As mentioned earlier, SCM common goal is to create value for the customer. It is also discussed that a CA is achieved by creating value for immediate downstream customers and their customers, ultimately for the end user (Al-Gasawneh et al., 2021; AL- Rawashdeh & Mamat, 2019). Noticing these facts is the key to successful customer relationships.

Quality of Information Sharing

There is a need in the organization to use information as their strategical asset, that have a potential to impact the performance of organization, since sharing knowledge is so important, its caliber is also very important. The standard is correlated with the usefulness, accuracy, and

accessibility of the information supplied. (Khan and Siddiqui 2018) Several scholars have used the broad term "information quality" to describe its numerous aspects. Reputation, interpretability, completeness, value addition, security, objectivity, time-relatedness, accuracy, availability, reliability, and the shared information is distorted, then it is related to severe consequences (Childehouse et al, 2003).

Level of Information Sharing

Agile supply chains compete with increased levels of knowledge and skills, enabling them to widely implement information technology. In addition, the use of information technology is a major indicator of SCM best practices, especially if it is used to connect customers, suppliers and value-added services (Maggon and Chaudhry., 2015).

Firm Performance

Firm performance is a measure of a company's success in carrying out tasks that fall under its purview in order to maximize the accomplishment of the vision, mission, and goals established by the company. This achievement can be evaluated by comparing it to targets or to the performance of other businesses operating in the same sector. Maintaining the firm's competitive edge and maximizing supply chain management are two ways to attain and enhance corporate performance (Djufri et al., 2021).

Definition of Key Terms

Reliability

One of the most crucial aspects of how supply chains operate is reliability. The study that was done revealed that, despite significant advancement, a number of issues still need to be resolved, including language, the choice of important indicators, the calculation methodologies, and the lack of an economic evaluation of redundant and repairable supply chains.

The need to develop methodologies used to evaluate the dependability of supply networks and to look for proactive approaches to increase reliability arises from the complexity of the interactions between the businesses that make up participants in the supply chain. (Lukinskiy, Lukinskiy et al. 2014).

Flexibility

Flexibility is really more proactive than reactive. Although flexibility requires reactions, it also serves as a speedy way of attaining such reactions. (Singh, Dhir et al. 2021).

Cost

Alternative strategies for enhancing supply chain performance, such as time-based methodologies, aim to increase efficiency by locating and removing sections of supply chain activities that don't contribute value. There is little knowledge about the link between time and cost in different supply chains, despite the fact that utilizing time as a metric can be a useful strategy for enhancing value in the chain. (Whicker, Bernon, et al. 2009). According to Hines et al. (2001), who used Process Based Costing in the automotive sector, the expenses related to non-value-added activities, such as the times when nothing is happening to a product, have always been challenging to estimate. The purpose of this research is to

demonstrate how time-based analysis may offer a method for analyzing supply chain expenses. (Hines et al. (2001).

Assets Management

Asset management entails managing a collection of assets over their whole technological lifecycle in order to provide a reasonable return and specific service and security criteria.

Operators of distribution and transmission networks must contend with a variety of objectives, some of which are even competitive. Their job is to strike a balance between shareholder expectations for appropriate returns on the capital invested and consumer needs for high-quality goods and services at reasonable pricing.(Schneider, Gaul et al. 2006).

The effectiveness of an organization in asset management to support demand satisfaction. This includes the management of both assets: fixed capital and working capital. (Sillanpää, 2010).

Competitive Advantage

As it was defined per the scientific frameworks addressed via it, competitive advantage is one of the primary elements of the strategy that is established and implemented in the market. Others focused on the significance of the industry structure, while others approached it from the organization's market environment perspective. Some of them dealt with it from the perspective of the industry analysis technique. Internally, an organization builds a competitive advantage on a number of unique capabilities, and those in charge of these organizations must be well-versed in these capabilities and invest competitively. This framework, known as the internal dimension, has emerged as a new method for studying competitive advantage. (Al-Nawafah, Al-Shorman et al. 2022).

A competitive advantage is defined as a superior skill, technology or resource that an organization can provide A service, commodity or benefits that are distinct from those offered by competitors within the same sector, which confirms distinction and difference organization from its competitors from the perspective of customers (Ning & Tanriverdi, 2017).

Competitive advantage is the ability of the business to forge a defensive stance against its rivals (Porter, 1985). On-time delivery, competitive price/cost, good quality, the right quantity, and flexibility are recognized as the critical metrics (Tracey et al., 1999; Li et al., 2006). It is a vital component of a business that is used to measure and differentiate the firm from its rivals. In other research, time-based rivalry has also been prioritized as a source of competitive advantage (Handfield and Pannesi, 1995). (Abeysekara, Wang et al. 2019). According to Malesios et al. (2020) and Mofokeng et al. (2019), competitive advantage has a favourable and significant impact on business performance. Low costs, superior quality, quick delivery, and ongoing product innovation have all been shown to boost sales and gain market share. Product sales and market share management are indicators of how well a firm is performing and meeting its financial objectives. As defined by Hafeez et al. (2010), competitive advantage arises from the value that businesses may provide for clients or buyers by utilizing competitive advantage dimensions like pricing, quality, delivery dependability, speed to market, and product innovation. (Hwihanus, Wijaya et al. 2022).

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Definitions of Key Words

Price / Cost

Price is the amount the consumer must exchange to receive the offering. As the price of a product depends on different elements and hence it is changing constantly thus the pricing should be dynamic so that it can bear the changes over duration. The important factor in pricing is the deciding the cost of the product, strategy for marketing & its expenses related to distribution, advertisement expenses or any kind of price variation in the market. Nonetheless if there is change in all the variables then generally the pricing of the product may vary accordingly. (Singh 2012).

Quality

Customers are drawn to quality because everyone values high-quality goods and services. Packaging is used to increase the value of the product. For instance, McDonald's has altered the look of their packaging in 118 different nations. Packaging enhances consumers' perceptions of the product's quality. (Singh 2012).

Product Innovation

Like competition itself, competitive advantage is a constantly moving target. For any company in any industry, the key is not to get stuck with a single simple notion of its source of advantage. The best competitors, the most successful ones, know how to keep moving and always stay on the cutting edge. Today, time is on the cutting edge. The ways leading companies manage time-in production, in new product development and introduction, in sales and distribution-represent the most powerful new sources of competitive advantage. Though certain Western companies are pursuing these advantages, Japanese experience and practice provide the most instructive example so not because they are necessarily unique but because they best illustrate the evolutionary stages through which leading companies have advanced. (Ansari and Riasi 2016).

Time to Market

Products have shorter life cycles in marketplaces that are highly competitive and worldwide. This indicates that businesses must lower the TtM of new items while also ensuring their commercial success. By prolonging a product's sales life and enabling development and production cost benefits, early product release increases profitability. According to several empirical studies (Gryphon, 1997; Ittner and Larcker, 1997), faster product development results in higher performance.

It is commonly recognised that TtM of new goods is crucial for gaining a competitive edge.the

previous ten years have seen the publication of a sizable number of publications on this topic. Gryphon (1997, 2002) used TtM as a dependent variable and examined its relationship with the utilisation of multifunctional teams, the use of formal tools that can be used to manage tradeoffs between goals in the product design and their costs, such as VE, FCA, cost tables, and design for manufacture and assembly (Cooper and Slagmulder, 1999), and the use of multifunctional teams.

Theoretical Framework

From the literature reviews, it can be concluded that SCM practices help on firm performance. The common SCM practices reviewed in the literature leading to firm performance (dependent variables) consists of strategic supplier partnership, customer relationship, quality of information sharing and level of information sharing (independent variables). firm performance can further consist of into reliability, flexibility, cost and assest management. Competitive advantage processes in this study are constructed with price/ cost, quality, product innovation and time to market. competitive advantage processes also act as a mediating in the relationship between SCM and firm performance. A comprehensive of literature review and combination of resource-based theory and knowledge-based theory were used to construct the theoretical framework in this study.

Resource Based Theory

Resources must be valuable, uncommon, unique, and non-substitutable for a firm to be able to use them to gain a competitive advantage, according to Barney and Grant (1991) and the resource-based theory. Through the development of specialized competencies that enable access to new resources, supply chains boost performance improvements and resource development (Eisenhardt & Schoonhoven, 1996). In their studies, Barratt & Oke (2007) and Rungtusanatharn et al. (2003) hypothesized that the usage of resources in supply chains combined with information exchange would help to enhance the performance of the supply chains and maintain competitive advantage. Human resources, supplier partnerships, information sharing, and customer relationships are all examples of resources that are useful to the supply chain system. Various supply chain procedures are confronted with different resources, therefore, in study of different supply chain practices would result in the ability of effectively in the organization so that able to sustain competitive advantage and influence on firm performance.

Knowledge-Based Theory

The knowledge-based theory is largely accepted that it is an extension of resource-based theory of the firm. (Grant, 1996a; Roos, 1998; Hoskisson et al., 1999; Sveiby, 2001). Knowledge is considered as the most strategic important resource to the firm as knowledge is difficult to imitate and very important as it stand as the key determinants of competitive advantage and organizational performance. Knowledge maybe forms from explicit or implicit in the organization and it is integrated with organizational capability to make use of the knowledge to enhance on the competitive position. Based on knowledge-based theory, it further explains the use of competitive advantage to act as mediating effect in the study of supply chain management and firm performance.

Research Gap

Based on the previous studies, a few research gaps can be derived. Firstly, the model introduced by (Li, Ragu-Nathan, Ragu-Nathan, & Rao, 2006), (Mohd Jamal, Tayles & Grant, 2020), (Khan & Siddiqui, 2018), and (Abuzaid, 2014) was well founded for the firms, strategic supplier partnership, customer relationship, quality of information sharing and level of information sharing as an independent variable as well as its relationship with firm performance. This relationship indicated significance towards supply chain management and firm performance. The supply chain management variable is well associated with the firm performance-based view theory which supports the relationship at the same time as competitive advantage mediates along with the relationship. However, the model was established with supply chain management and was not linked with the firm performance-based view theory. Hence, it has been noticed to be a gap that might be improved by including (Kaleka & Morgan, 2017), (Thatte, Rao, & Ragu-Nathan, 2013), (Obeysekera, Wang & Kuruppuarachchi, 2019). derivation for competitive advantage as a mediating variable.

Moreover, despite analyzing the supply chain management -firm performance relationship, a study that examines the four main components of supply chain management (Strategic Supplier Partnerships, Customer Relationships, Quality of Information Sharing, and level of information sharing) on the firm performance is still scant in literature. However, it is well mentioned in past studies that supply chain management comprise four core domains, Strategic Supplier Partnerships, Customer Relationships, Quality of Information Sharing, and level of information sharing) (Li, Ragu-Nathan, Ragu-Nathan, & Rao, 2006), (Mohd Jamal, Tayles & Grant, 2020), (Khan & Siddiqui, 2018), and (Abuzaid, 2014). Therefore, this study includes supply chain management in term of Strategic Supplier Partnerships, Customer Relationships, Quality of Information Sharing, and level of information sharing. Conceptual Framework: Mediating effect of competitive advantage between supply chain management and firm performance.

Previous Studies

- Study Xu et al. (2022)

The study also clarified the importance of considering the relationships between suppliers and customers as mediating variables in the relationship between organizations' social responsibility practices, green supply chain management practices, and improving operational performance, which requires social responsibility-oriented human resources practices.

- Study Al-Tarawneh&Al-Shourah, (2018):

"The Impact of Supply Chain Management and Manufacturing Flow Management Practices on the Competitive Advantage of the Jordanian Industry".

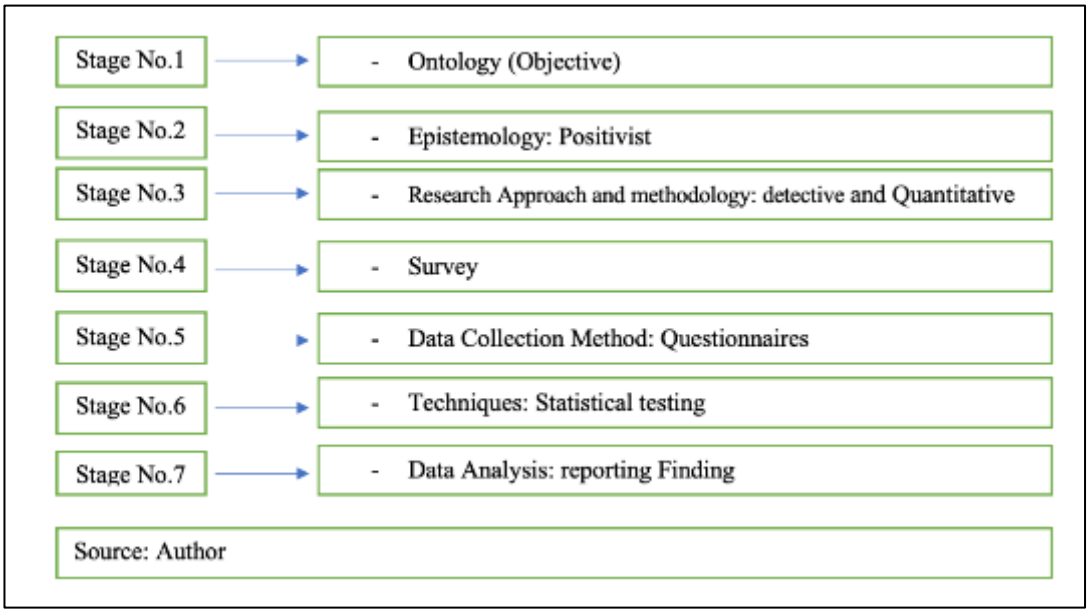
This study aims to study the impact of supply chain management on competitive advantage in Jordanian industry. The purpose of this research is to examine how supply chain management affects competitive advantage in the Jordanian economy. The study sample included 100 senior executives working in a variety of industries, while the study population included businesses engaged in the industrial sector. The descriptive-analytic method was applied. The Jordanian industrial sector was given a questionnaire that had been created to gather data. The study produced a number of conclusions, including the adoption of various supply chain management techniques by the majority of Jordan's manufacturing businesses

and the existence of a relationship between supply chain management and manufacturing management practices. The study's recommendations for managing all facets of competitive advantage within corporate organizations and their supply chain.

Methodology

Research Design

To ensure that the entire research process is appropriately designed and, presumably, to preserve the research quality, research designs are crucial. To ensure that the research questions have been proven to be conducted and that they will be addressed, it is recommended that the description of the planned study design be documented fully (Marczyk et al., 2005).



Population of the Study

The term "population" is employed in empirical research to refer to the complete group of entities (people, things, etc.) that possess specific characteristics and from which conclusions are to be drawn (Sekaran & Bougie, 2016). This research targeted the food sectors in Jordan such as all Jordanian factories and companies that are specialized in food production. Chamber of Commerce Directory, provide researchers with a comprehensive list of registered food companies in Jordan. Based on the researcher's definition of firms and their involvement in the food sector, among other basic criteria, the sample frame was expanded to include only those firms. This criterion has been studied by many researchers from different nations. (Imran et al., 2018; J. O. Okpara & Kabongo, 2009).

Unit of Analysis

Unit of analysis is known as the participants of the survey or the entity on whom the research will be conducted. In the current study, the unit of analysis is company. Each company is represented by the individual leadership (CEOs, Heads and managers).

Respondents

In scientific inquiry, any person or organisation that answers questions or supplies data is called a respondent. They usually take part in interviews, questionnaires, surveys, or some other kind of data gathering. Their responses add to the dataset that the researcher analyses, and they can be chosen using criteria that are pertinent to the research goals. Respondents in this research are the purchasing department manager, logistic department manager, production department manager, marketing department manager, warehousing, and department manager of food-based firms in the three cities in Jordan (Amman- Alzarga– Irbed). They will participate in the research study by providing information or responses to the researcher's inquiries.

Sampling

Sampling Method

Researchers must consider whether they must incorporate a sampling, regardless of the nature of their study objectives and questions (Saunders & Lewis, 2012). By selecting a sample that represents the entire company, sampling makes it simpler for researchers to come to conclusions about the organization being studied R. Kumar (2019).

Sufficient sample size plays a significant role in lowering the cost of sampling error, demonstrating the prerequisite for choosing an appropriate sample size. A sufficient sample size is required for any research, according to Salkind (2003), as a very small sample may not be suitable to serve as a company's representative. This might result in a Type I mistake, which would deny of the results (Sekaran, 2003). Instead, very big sampling can result in type 2 error which leads to agreeing with results when these results would be rejected.

Sample Size

In deciding the appropriate sample size for this study, Sekaran, (2003) indicated that a sample size of 384 is appropriate for a population of 1000000. Rosecoe (1975) rule of thumb suggests that sample size larger than 30 but less than 500 as being appropriate for most of the research or in multivariate research the sample size is preferred to be 10 times or more than number of variables in the study. Yet, Kline (1998) suggested that it would be more helpful if the sample size is thought of in terms of the number of subjects per item which means that ten subjects (samples) per estimated items (questionnaire) are adequate if the measured variables are equally distributed. However, according to Hair et al. (2013) the minimum size to perform PLS-SEM analysis should be 10 times the largest number of predictors directed at a latent variable in the path model which is 5*10 = 50. In this research the number of samples is 338 firm. Hence, the sample size is sufficient to run the PLS-SEM.

Questionnaire Development

The instrument for this research is developed by means of a combination of existing validated measures based on a thorough literature review. The validated measures chosen were then tailored to the sample of this research very briefly. That is a common approach used to create a survey tool, because it would offer two major benefits such as validity and reliability of existing instruments already tested and it also allows a contrast of new results and previous results from other experiments to be obtained by using existing instruments (Kitchenham & Pfleeger, 2002).

Data Collection Procedure

The data collection procedure for this research study involves sampling from the population of food companies in Jordan, comprising a total of 2,823 firms. The desired sample size is determined to be 384. The population distribution across the three cities of Jordan is as follows: 1,420 food companies are located in the capital city of Amman, 1,106 in Alzarga, and 297 in Irbed. To ensure a representative sample, a stratified sampling approach will be employed. This involves dividing the population into subgroups or "strata" based on the cities (Amman, Alzarga, and Irbed) and then selecting a proportionate number of samples from each stratum. The data will be collected from key managerial personnel within these food-based firms, including the Department Manager, Logistic Department Manager, Production Department Manager, Marketing Department Manager, and Warehousing Department Manager. These individuals are chosen due to their pivotal roles within their respective organizations and their potential to provide valuable insights relevant to the research objectives. They will be contacted through the email and mobile phones to fill up the questionnaire. The data collected will be systematically analyzed to draw meaningful conclusions and insights regarding the research objectives. Data will be collected by the below questionnaire distribution. Based on the response rate a total of 500 questionnaire will be distributed to get 338 sample size.

Table 1
Data Collection Sample

Industry sectors (Food-based firms)	**No of Firms**	**Calculating the sample**	**Sample**
Food-based Firms in Amman city	1420	1420/2823*338 =170	170
Food-based Firms in Alzarga city	1106	1106/2823*338 =132	132
Food-based Firms in Irbed city	297	297/2823*338 = 36	36
No. of Sample	2823	338	338

Table 2
Summary of Reliability Analysis of the Pilot Test

Variable	**Dimensions**	**Scale items**	**Cronbach alpha**
Independent variables	Strategic with suppliers' partnership (SSP)	6	0.903
	Customer relationship (CR)	5	0.899
	Quality of information sharing (QIS)	5	0.901
	Level of information sharing (LIS)	6	0.884
Mediating variable	Competitive Advantage (CA)	4	0.876
Moderator variable	Time to Market (TM)	4	0.846
Dependent variable	Firm Performance (FP)	5	0.883
Overall Qeuestionnaire	All items	35	0.816

Results and Discussion

Introduction

This chapter presents the results of the structural analysis, discusses the results that emerged, and comprises twelve sections that discuss the data analyses conducted in this study.

Response Rate

The researcher distributed 500 questionnaires to the study participants from the eligible target population based on the proportion of each city involved in this study. During the data collection, most of the questionnaires were collected when the researcher directly met the respondents and collected their responses once they completed them

Table 4.1
Response Rate

Questionnaires	Respondents No	%
Distributed	500	100.0
Returned (Response Rate)	356	71.2
Not returned	144	28.8
Unusable	9	2.5
Usable	347	97.5

Table 4.2 displays the distribution of the distributed and returned questionnaire for each city, further elaborating on the response rates across the three cities. In Amman City, the researcher distributed 251 questionnaires and received 180 responses, resulting in a response rate of 71.7%. In Alzarqa City, 137 out of the 196 distributed questionnaires were returned, yielding a response rate of 69.9%. In Irbed City, 39 responses were received from 53 distributed questionnaires, corresponding to a 73.6% response rate.

Table 4.2
Distribution of Questionnaires by City

City	Distributed	Returned	Usable	Unusable
Amman	251	180	175	4
	(50.2)	(71.7)	(97.2)	(2.8)
Alzarga	196	137	134	3
	(39.2)	(69.9)	(97.8)	(2.2)
Irbed	53	39	37	2
	(10.6)	(73.6)	(94.8)	(5.1)
Total	500	356	347	9

Numbers in parentheses represent the percentages.

Table 4.3
Summary of Respondents' Demographic Characteristics

Demographic characteristic	Categories	N	%
Age groups	18 – 25	28	8.1
	25 – 40	159	45.8
	41 – 55	98	28.2
	Above 55	62	17.9
Gender	Male	303	87.3
	Female	44	12.7
Education	Secondary	25	7.2
	College	74	21.3
	Undergraduate	197	56.8
	Postgraduate	51	14.7

Table 4.4
Summary of Respondents' Professional Characteristics

Professional characteristic	Categories	N	%
Years of experience	Less than 5 years	35	10.1
	5 – 10	92	26.5
	11 – 15	103	29.7
	16 and above	117	33.7
Job position	Senior Executive	60	17.3
	Production Manager	58	16.7
	Logistic Service Supervisor	46	13.3
	Senior Salesman	53	15.3
	Transportation Supervisor	61	17.6
	Marketing Officer	69	19.9

Discussion and Conclusions

The findings in Chapter Four indicated that H10, H11, and H12 were all supported, while H13 was not supported. This suggests that competitive advantage plays a significant mediating role in the relationships between supply chain management practices and firm performance among food-based firms in Jordan, specifically for strategic supplier partnerships, customer relationships, and quality of information sharing. The positive impacts of strategic supplier partnerships, customer relationships, and quality of information sharing on firm performance are enhanced through the attainment of competitive advantage. However, the relationship between level of information sharing and firm performance does not exhibit the same mediating effect of competitive advantage. This highlights the critical importance of competitive advantage as a mechanism that facilitates the positive effects of effective supply chain management practices on firm performance in the Jordanian food industry, while also indicating that the level of information sharing may require further exploration to understand its impact on performance outcomes.

Conclusions

This study has explored the intricate relationships between supply chain management practices, competitive advantage, and firm performance within the food industry in Jordan. Through a comprehensive analysis, it has been established that effective supply chain management is fundamental to enhancing operational efficiency and plays a critical role in fostering competitive advantage, which in turn positively influences firm performance.

The findings indicate that specific dimensions of supply chain management—such as strategic supplier partnerships, customer relationships, quality of information sharing, and the level of information sharing—are significantly correlated with the competitive advantages that firms can achieve. These advantages are essential for food-based companies striving to improve their market position and overall performance in a competitive landscape.

Moreover, the study highlights the mediating role of competitive advantage in the relationship between supply chain management practices and firm performance. This underscores the importance of not only implementing effective supply chain strategies but also understanding how these strategies can translate into competitive benefits that enhance overall business outcomes.

However, it is important to note that the study found time to market to be not significant in moderating the relationship between competitive advantage and firm performance. This suggests that while time to market is often considered a critical factor in many industries, its impact may vary in the context of the food industry in Jordan. Firms may need to focus on other aspects of supply chain management to drive performance rather than solely prioritizing speed to market.

In conclusion, this study contributes to the existing literature by providing empirical evidence of the interconnectedness of supply chain management, competitive advantage, and firm performance in the context of the Jordanian food industry. The insights gained from this research offer valuable implications for practitioners, suggesting that a strategic focus on supply chain management can lead to improved competitive positioning and enhanced performance outcomes. Future research should continue to explore these relationships in broader contexts and consider the evolving dynamics of the food industry to further enrich the understanding of effective supply chain practices.

References

Zulkarnain, M., Salim, U., & Sumiati. (2018). Effect Analysis of Supply Chain management on Competitive Advantage and Company Performance: Study at New Djombang Sugar Factory). South East Asia Journal of Contemporary Business, Economics and Law, 15(5), 63–69.

Maddeppungeng, A. (2017). Pengaruh Manajemen Rantai Pasok (MRP) pada Daya Saing dan Kinerja Perusahaan Jasa Konstruksi di DKI-Jakarta. Konstruksia, 8(2), 23–36.

Khaddam, A. A., Irtaimeh, H. J., & Bader, B. S. (2020). The effect of supply chain management on competitive advantage: The mediating role of information technology. Uncertain Supply Chain Management, 8(3), 547–562. https://doi.org/10.5267/j.uscm.2020.3.001.

Palandeng, I. D., Kindangen, P., Tumbel, A., & Massie, J. (2018). Influence Analysis of Supply Chain Management and Supply Chain Flexibility to Competitive Advantage and Impact on Company Performance of Fish Processing in Bitung City. Journal of Research in Business, Economics and Management, 10(1), 1783–1802. http://scitecresearch.com/journals/index.php/jrbem/article/view/1356/990.

Pono, M., Syamsu, Armayah, & Munzu, M. (2020). The effect of supply chain strategy towardcompetitive advantage, and company performance : case of small- medium industries in West Sulawesi Province of Indonesia. Revista ESPACIOS, 1(1), 1.

Al-Douri, J. A. (2018). The impact of supply chain management approaches on supply chain performance in Iraq. International Journal of Supply Chain Management, 7(5), 13–21.

Kumar, A., & Kushwaha, G. S. (2018). Supply Chain Management Practices and OperationalPerformance of Fair Price Shops in India: an Empirical Study. Logforum, 14(1), 85–99.https://doi.org/10.17270/J.LOG.2018.237.

Mohamed, Y. H., Abdul Rahim, A. R., & Ma'aram, A. (2020). The effect of halal supply chain management on halal integrity assurance for the food industry in Malaysia. Journal of Islamic Marketing, 12(9), 1734-1750.

Kale, V. (2017). Agile network businesses: collaboration, coordination, and competitive advantage. CRC Press.

Alam, M. (2022). Supply Chain Management Practices and Organizational Performance in Manufacturing Industry: SCM and Organizational Performance. South Asian Journal of Social Review (ISSN: 2958-2490), 1(1), 42-52.

Atnafu, D., & Balda, A. (2018). The impact of inventory management practice on firms' competitiveness and organizational performance: Empirical evidence from micro and small enterprises in Ethiopia. Cogent Business & Management, 5(1), 1503219.

Ulaga, W., & Eggert, A. (2006). Value-based differentiation in business relationships: Gaining and sustaining key supplier status. Journal of marketing, 70(1), 119-136.

Dandis, A. O., Wright, L. T., Wallace-Williams, D. M., Mukattash, I., Al Haj Eid, M., & Cai, H. (2021). Enhancing consumers' self-reported loyalty intentions in Islamic Banks: The relationship between service quality and the mediating role of customer satisfaction. Cogent Business & Management, 8(1), 1892256.

Shukla, M. K., & Pattnaik, P. N. (2019). Managing customer relations in a modern business environment: towards an ecosystem-based sustainable CRM model. Journal of Relationship Marketing, 18(1), 17-33.

Rudberg, M., & Olhager, J. (2003). Manufacturing networks and supply chains: an operations strategy perspective. Omega, 31(1), 29-39.

Martin, C. A. (2005). From high maintenance to high productivity: What managers need to know about Generation Y. Industrial and commercial training, 37(1), 39-44.

Cooper, A. J., & Carpenter, P. W. (1997). The stability of rotating-disc boundary-layer flow over a compliant wall. Part 1. Type I and II instabilities. Journal of Fluid Mechanics, 350, 231-259.

Tan, K. C., Kannan, V. R., Handfield, R. B., & Ghosh, S. (1999). Supply chain management: an empirical study of its impact on performance. International journal of operations & production Management, 19(10), 1034-1052.

Alqasim, A., Scheutz, F., Zong, Z., & McNally, A. (2014). Comparative genome analysis identifies few traits unique to the Escherichia coli ST131 H30Rx clade and extensive mosaicism at the capsule locus. BMC genomics, 15(1), 1-8.

Alshourah, S., Alassaf, H., & Altawalbeh, M. (2018). Roles of top management and customer orientation in enhancing the performance of customer relationship management (CRM) in hotel industry. International Journal of Advance Research and Innovation, 6(3), 233-239.

Christopher, M. (1999). Logistics and Supply Chain Management: Strategies for Reducing Cost and Improving Service Financial Times: Pitman Publishing. London, 1998 ISBN 0 273 63049 0 (hardback) 294+ 1× pp.

Ekenstedt, L. L. (2004). Decision processes and determinants of logistics facility locations: Multinational corporations' perspectives.

Al-Gasawneh, J. A., Anuar, M. M., Dacko-Pikiewicz, Z., & Saputra, J. (2021). The impact of customer relationship management dimensions on service quality. Polish Journal of Management Studies, 23(2), 24-41.

Al-Rawashdeh, G., Mamat, R., & Abd Rahim, N. H. B. (2019). Hybrid water cycle optimization algorithm with simulated annealing for spam e-mail detection. IEEE Access, 7, 143721-143734.

Khan, H., R., Ali, M., Olya, H. G. T., Zulqarnain, M., & Khan, Z. R. (2018). Transformational leadership, corporate social responsibility, organizational innovation, and organizational performance: Symmetrical and asymmetrical analytical approaches. Corporate Social Responsibility and Environmental Management, 25(6), 1270–1283. https://doi.org/10.1002/csr.1637.

Childerhouse, P., & Towill, D. R. (2003). Simplified material flow holds the key to supply chain integration. Omega, 31(1), 17-27.

Maggon, M., & Chaudhry, H. (2015). Revisiting relationship marketing and customer relationship management in leading tourism and hospitality journals: Research trends from 2001 to 2013. Journal of Relationship Marketing, 14(1), 53-77.

Lukinskiy, V., Lukinskiy, V., & Churilov, R. (2014). Problems of the supply chain reliability evaluation. Transport and telecommunication, 15(2), 120.

Schneider, J., et al. (2006). "Asset management techniques." International Journal of Electrical Power & Energy Systems 28(9): 643-654.

Al-Nawafah, S., Al-Shorman, H., Aityassine, F., Khrisat, F., Hunitie, M., Mohammad, A., & Al-Hawary, S. (2022). The effect of supply chain management through social media on competitiveness of the private hospitals in Jordan. Uncertain Supply Chain Management, 10(3), 737-746.

Nan, N., & Tanriverdi, H. (2017). Unifying the role of IT in hyperturbulence and competitive advantage via a multilevel perspective of IS strategy. Mis Quarterly, 41(3), 937-A8.

Porter, M. E. (1998). Clusters and the new economics of competition (Vol. 76, No. 6, pp. 77-90). Boston: Harvard Business Review.

Tracey, M., Vonderembse, M. A., & Lim, J. S. (1999). Manufacturing technology and strategy formulation: keys to enhancing competitiveness and improving performance. Journal of operations management, 17(4), 411-428.

Li, S., Ragu-Nathan, B., Ragu-Nathan, T. S., & Rao, S. S. (2006). The impact of supply chain management practices on competitive advantage and organizational performance. Omega, 34(2), 107-124.

Abeysekara, N., Wang, H., & Kuruppuarachchi, D. (2019). Effect of supply-chain resilience on firm performance and competitive advantage: A study of the Sri Lankan apparel industry. Business Process Management Journal, 25(7), 1673-1695.

Malesios, C., Dey, P. K., & Abdelaziz, F. B. (2020). Supply chain sustainability performance measurement of small and medium sized enterprises using structural equation modeling. Annals of Operations Research, 294, 623-653.

Mofokeng, T. M., & Chinomona, R. (2019). Supply chain partnership, supply chain collaboration and supply chain integration as the antecedents of supply chain performance. South African Journal of Business Management, 50(1), 1-10.

Hanif, M., Hafeez, S., & Riaz, A. (2010). Factors affecting customer satisfaction. International research journal of finance and economics, 60(1), 44-52.

Hwihanus, H., Wijaya, O., & Nartasari, D. (2022). The role of supply chain management on Indonesian small and medium enterprise competitiveness and performance. Uncertain Supply Chain Management, 10(1), 109-116.

Ansari, A. and A. Riasi (2016). "Modelling and evaluating customer loyalty using neural networks: Evidence from startup insurance companies." Future business journal 2(1): 15-30.

Grant, R. M. (1991). The resource-based theory of competitive advantage: implications for strategy formulation. California management review, 33(3), 114-135.

Eisenhardt, K. M., & Schoonhoven, C. B. (1996). Resource-based view of strategic alliance formation: Strategic and social effects in entrepreneurial firms. organization Science, 7(2), 136-150.

Rungtusanatham, M., Salvador, F., Forza, C., & Choi, T. Y. (2003). Supply-chain linkages and operational performance: A resource-based-view perspective. International Journal of Operations & Production Management, 23(9), 1084-1099.

Grant, R. M. (1996). Toward a knowledge-based theory of the firm. Strategic management journal, 17(S2), 109-122.

Roos, J. (1998). Exploring the Concept of Intellectual Capital (IC). Long Range Planning, 31, 150-153.

Hoskisson, R. E., Wan, W. P., Yiu, D., & Hitt, M. A. (1999). Theory and research in strategic management: Swings of a pendulum. Journal of management, 25(3), 417-456.

Sveiby, K. (2001). A knowledge-based theory of the firm to guide in strategy formulation. Journal of Intellectual Capital, 2 (4), 334-358.

Mohd Jamal, N., Tayles, M., & Grant, D. B. (2020). Investigating the Relationship between Supply Chain Management and Management Accounting Practices. Journal of Supply Chain Management: Research & Practice.

Khan A, Siddiqui DA. Information sharing and strategic supplier partnership in supply chain management: A study on pharmaceutical companies of Pakistan. Khan, Ambreen. and Siddiqui, DA (2018). Information Sharing and Strategic Supplier Partnership in Supply Chain Management: A Study on Pharmaceutical Companies of Pakistan. Asian Business Review. 2018;8(3):117-24.

Abuzaid, A. N. (2014). The effect of supply chain management practices on strategic flexibility: applied study on the Jordanian manufacturing companies. European Journal of Business and Management, 6(5), 167-176.

Kaleka, A., & Morgan, N. A. (2017). Which competitive advantage (s)? Competitive advantage–market performance relationships in international markets. Journal of International Marketing, 25(4), 25-49.

Thatte, A. A., Rao, S. S., & Ragu-Nathan, T. S. (2013). Impact of SCM practices of a firm on supply chain responsiveness and competitive advantage of a firm. Journal of Applied Business Research (JABR), 29(2), 499-530.

Abeysekara, N., Wang, H., & Kuruppuarachchi, D. (2019). Effect of supply-chain resilience on firm performance and competitive advantage: A study of the Sri Lankan apparel industry. Business Process Management Journal, 25(7), 1673-1695.

Xu, J., Yu, Y. , Wu, Y. , Zhang, J. Z. , Liu, Y. , Cao, Y. , & Eachempati, P. (2022). Green supply chain management for operational performance: anteceding impact of corporate social responsibility and moderating effects of relational capital. Journal of Enterprise Information Management.

Al-tarawneh, R. T., & Al-Shourah, A. A. (2018). The Impact of Supply Chain Management and Manufacturing Flow Management Practices on Competitive Advantage of Jordanian Industry. European Journal of Scientific Research, 148(3), 394-407.