

Impact of Jordan's Logistic Capabilities and Supply Chain Performance on Textile Manufacturing Firm Performance: An Empirical Investigation

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ABSTRACT

The main purpose of this study is to investigate the current five Jordan's Logistic Capabilities (JLCs) and five Supply Chain Performance (SCP) elements that are used in Textile Manufacturing Firms (TMFs) in Jordan and their impacts on Textile Manufacturing Firm Performance (TMFP). The target population for this study was high-level managers (i.e., logistics managers, ...etc.) who were randomly selected from large-sized TMFs already listed in the Ministry of Industry and Trade in Jordan. Data was collected through a self-administered questionnaire that was distributed among TMFs in Jordan. 44 questionnaires were valid for analysis. A large-scale survey questionnaire was used for the data collection process and applied after conducting a pilot study survey. The research framework was tested using hypothesis-testing deductive approach. Descriptive statistics, such as means and standard deviations, were used. Furthermore, multiple regression analysis and Pearson correlation coefficient were used to identify the impacts of the main dimensions. Survey responses were analyzed by using SPSS (17).

The results show that JLCs were well established, prepared and used to a high degree in terms of roads, seaports and telecommunication that can facilitate and support SCP elements. JLC elements already have a moderate positive significant impact on SCP (H1). SCP practices adopted in terms of supply chain flexibility were found at a high degree, while supply chain responsiveness, customer satisfaction and delivery reliability were found at a moderate degree. Supplier cooperation was found at a weak degree. Additionally, it is found that SCP elements have a strong positive significant impact on TMFP (H2), whereas JLC elements have a moderate positive significant impact on TMFP (H3). This paper provides an overview of the field of JLCs and supply chain performance; therefore, it will be of a high value for top managers, policy makers and academics and aid managers in the decision-making process.

Keywords: Logistic capabilities, Supply chain, Large-sized textile firms, Manufacturing, Performance, Jordan, Questionnaire study.

INTRODUCTION

Supply Chain Management (SCM) plays a crucial role and is considered a key component of competitive advantage in the firms' global business environment (Lee et al., 2013). It includes a set of individual functional entities and practices for enhancing the long-term competitive performance of the individual firms and

supply chain as a whole by integrating the internal functions within the firm and effectively linking them with external operations of suppliers, manufacturers, distributors, customers and other channel members (Kim, 2006). SCM encompasses many activities such as knowledge and information exchange, inventory, transport management, shared demand forecasts, sourcing and procurement, conversion, and all logistic management activities as well as coordination, cooperation, and collaboration with channel partners (Joon Seo and Dinwoodie, 2014).

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Intensified competition has shifted most firms in several industries from products to supply chains; therefore, in the era of globalization, most firms seeking to improve their performances by re-examining not only how they get products into their customer's hands, but also how they can respond quickly to customer's needs and wants (Anand and Grover, 2015). However, supply chains are responsible for the whole lifetime of the product from preparation phase of offering raw materials from points of supply, to the production and manufacturing phase, distribution and customer service, and finally recycling and disposal at the end of a product's life (Arif-Uz-Zaman and Ahsan, 2014). Thus, understanding the practicing of several supply chains (SC) has become an essential prerequisite for staying competitive in today's dynamic markets for enhancing profitability (Cook et al., 2011). As they move towards increased global competitiveness, firms and their supply chains need to become more flexible and responsiveness to fulfil customer orders more efficiently than competitors (Sangari et al., 2015). They collaborate with suppliers, customers and even with competitors; share information and knowledge aiming to create a collaborative supply chain that is capable of competing if not leading the particular industry (Chan and Lam, 2011).

Effective SC has become a potential valuable way for achieving a competitive advantage, improving customer service, and the firm's performance, since, today the competition is not only between firms, but also among supply chains (Banomyong and Supatn, 2011; Wang et al., 2008; Li et al., 2006). Huang et al. (2014) state that close relationships among SC partners are lacking, and firms may no longer compete if they do not have effective SC. Therefore, recent researches have showed interest in SCM in general, SC in particular, in addition to focusing on the understanding of why and

how some SCs outperform others is still incomplete and need further research into SC performance. Thus, SCM and its related strategy have become a common practice to the success of most manufacturing firms due to the achievement of low cost and offer high quality of goods and services purchased that will have a significant direct impact on the cost and quality of goods and services sold (Banomyong and Supatn, 2011). In such scenario, to ensure more growth for manufacturing firms, SC must be adaptive and responsive (Lee et al., 2013; (Abu-Alrejal, 2007). Adaptive and flexible SCs are those that are responsive enough to meet changing demands and customer needs. An adaptive SC requires strong coordination and cooperation between all points within the SC and all its extensions. SC policies such as procurement and supplier selection have a crucial role in SCM (Cuthbertson and Piotrowicz, 2008). The impact of SCM extends beyond reducing costs, and it has been emphasized that good managing SCs are directly linked to enhanced firm performance (Jabbour and Jabbour, 2016).

This study is organized as follows: Section 2 provides a literature review and research framework of various constructs, recent issues, and studies relevant to JLCs, SCP, and TMFP. Section 3 presents the rationale, and purpose of the study, research questions, and research hypotheses related to the research framework. The methodology and analysis of results are then presented in Section 4. Section 5 provides the conclusions and implications of the study.

1. Literature review and research framework

The evolution of supply chain management theory is driven by rapid changes in global business practices (Wang et al., 2008). Due to globalization, most firms tried to re-examine the ways in which they aimed to add value in internal functions, and utilize its resources

through their departments and/or branches. The resulting changes brought about large-scale programs of rationalization and firm “down-sizing”, cost reductions, quality improvement initiatives, inventory reduction programs, reduce lead-time, and enhance delivery logistic performances (Alam et al., 2014; Ramanathan et al., 2011). Intensified competition in global markets in the past two decades pushed SC strategies toward focus on how both internal and external business functions and processes are to be more involved and emerged in integrated and coordinated programs within the SC in order to enhance serving the ultimate customers.

Examples on such programs are integration of purchasing, procurement, manufacturing, selling, logistic activities, and delivery of real-time, seamless of information to all SC partners. Thus, new ways of managing are required for managing at the SC level (Sangari et al., 2015). However, supply chain performance (SCP) has become a critical source of sustainable advantage in many firms (WH Ip et al., 2011). An important component in SC design and analysis is the establishment of appropriate performance measures. SC operations include all business activities associated with the flow of information and transformation of goods from raw materials through the ultimate customer (Sindhuja, 2014). To assess the efficiency of SC, performance evaluation of the entire SC is of extreme importance (Banomyong and Supatn, 2011). SCP is defined by Banomyong and Supatn (2011) as ‘the efficiency which takes into account multiple performance measures related to supply chain members, as well as the integration and coordination of members’ performance’ (Banomyong and Supatn, 2011: 22). Therefore, the competitive environment of several industries now calls for the performance evaluation of the whole SC (from the suppliers’ suppliers to the customers’ customers) (Eckstein et al., 2015; Soni and

Kodali, 2010). Thus, well-integrated SC is one of the primary business strategies to improve SCP (Lee et al., 2007). A practical SCP assessment tool should be able to quantify both the efficiency and effectiveness of SC action. Banomyong (2007) indicates that SCP needs to be measured based on three main dimensions: cost, time and reliability; since, these dimensions reflect the output of SC operations as well as its capability to meet customer requirements at lowest cost, in right conditions, in right bills, in the right place, in right quantities, and as quickly as possible on time without any interruption and/or delay (Haavisto and Goentzel, 2015; Cadden et al., 2013).

There are many improvements and enhancements that lead to reduce the inefficiencies caused by the poor performance of the suppliers, wholesalers, manufacturers, distributors, unpredictable customer demands, and uncertain business environment (Estampe et al., 2013). An integrated supply chain is considered one of these improvements, which has a clear advantage on the competitiveness and enhances the performance of manufacturing firms (Cao et al., 2015; Green Jr et al., 2008). SCP has been recognized as an important phenomenon and has generated extensive interest among scholars, managers, and academic researchers in invading the world of business. Continuous changes in the state of knowledge, rapid advancements in technology and communication, intense competition, and globalization have forced most firms in different industries, especially manufacturing firms to adapt and apply an efficient SC in a serious attempt to survive and to obtain competitive advantage (Bortolotti, et al., 2015; Ou et al., 2010).

Therefore, traditional logistics activities, functions, and processes have been radically changed in the last two decades, and most firms were obliged to redesign and restructure their manufacturing networks in many

different countries (Foerstl et al., 2015). Thus, there are many challenges facing firms such as getting a product and service at the right time, to the right place, in the right quantity, and the right bills, at the lowest cost. Firms began to deal with the fact that competing against each other individually is not enough to improve their efficiencies, but they must do so together with effective supply chains (Chan and Lam, 2011). However, the understanding and practice of supply chains have become vital and are prerequisite to sustain competitiveness in the global race, and to enhance profitability. There are several definitions of the SCP concept in literature due to different theoretical perspectives (Lee et al., 2007). According to Feldmann and Muller (2003), there is no general accepted definition of SCP in literature. In this research, the conceptual definition of SC is defined by the researcher as a network of firms directly or indirectly interlinked and interdependent to serve and satisfy customer needs, wants, and requests through smoothly flow of information, products/raw materials, and financials within the firm and among other firms from suppliers' suppliers till customers' customers in order to improve overall firms' performance.

Joon Seo et al. (2014) suggest that the main objective of SCP is to enhance the performance of the SC and add as much value as possible at the least possible cost. In other words, it aims to link all SC agents and partners to jointly cooperate within the firm as a way to maximize productivity in the SC, then deliver most benefits to all related parties. Available literature is replete on the dimensions of SCP from different perspectives with the common goal of ultimately improving and enhancing the firms' performances (Cronson et al., 2013; Green Jr et al., 2008). According to Alam et al. (2014), SCP measures have been conventionally focused on and oriented toward cost, time and accuracy. A SCP

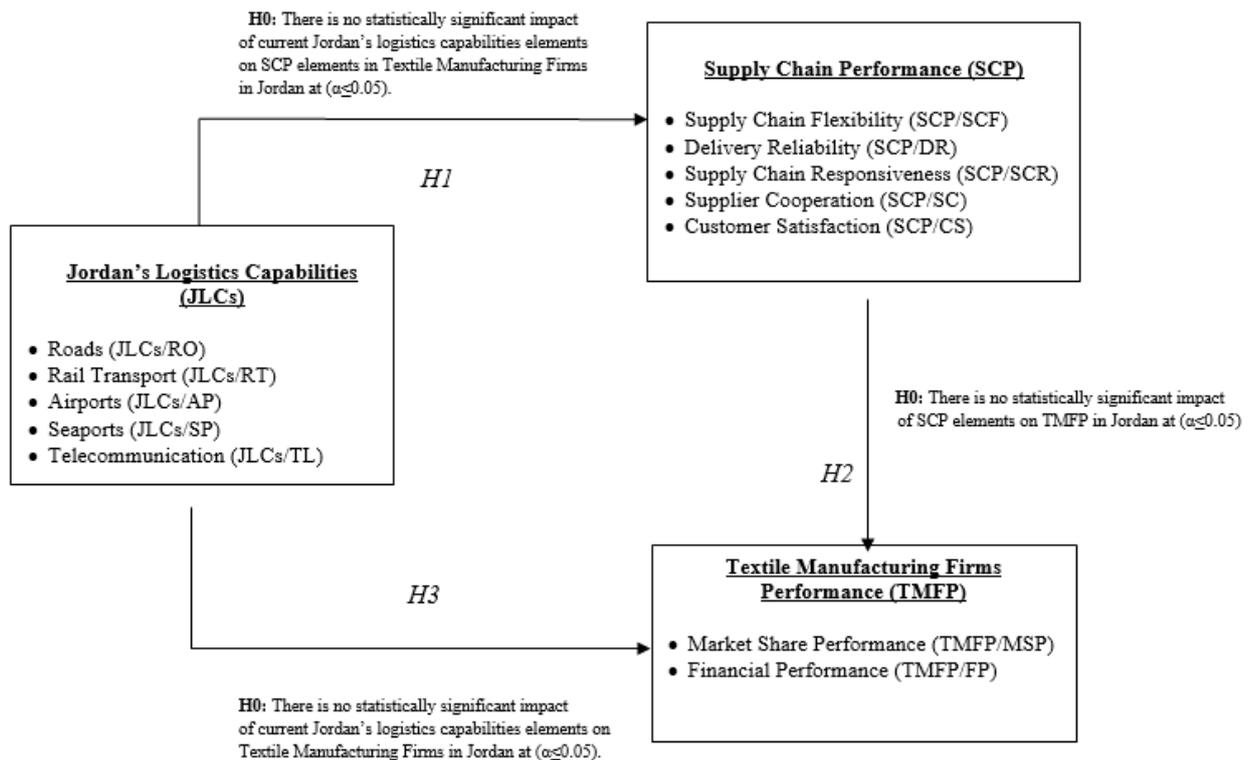
maintains various measurement metrics (performance measures) that are used for different purposes, like supporting decision making, management of accurate supply and demand inventory, evaluating the results, customer service, flexibility, improving coordination and communication (Estampe et al., 2013). SCP measure is information delivered to the management position to evaluate the efficiency and effectiveness of a specific process, activity, task, resource or outcome; therefore, most of the studies in this area argue that SCP should contain financial and non-financial metrics (Collions et al., 2010). Beamon (1999), suggests that effective performance measurement systems should include three separate types of performance measures: flexibility (how well the system reacts/adapts to changes in its environment), resource measures (i.e. efficiency), and output measures (i.e. customer satisfaction). Each of these types is vital to the overall performance of the whole supply chain.

In literature, there are many studies that have suggested and used a set of new measures to respond to the current requirements for SCP measurement. Some qualitative SCP measures are: flexibility, information and material flow, responsiveness, integration, cooperation, flexibility, collaboration, lead-time, delivery capability, delivery reliability, time to market, customer satisfaction, supplier performance, and effective risk management (Dubet et al., 2015; Foerstl et al., 2015; Eckstein et al., 2015; Cao et al., 2015; and others). Chan and Chan (2005) classified performance measures as either qualitative and/or quantitative in nature. Qualitative performance measures include customer satisfaction, flexibility, alliances, mergers, information and material flow integration, and supplier performance; while, quantitative performance measures include cost/profit, customer responsive, sales, and productivity. Li (2002) used supply chain reliability,

flexibility, responsiveness, costs, and assets as performance measures for a supply chain based on an extensive literature survey. Most authors emphasize on performance measurement dealing with customer service, suppliers, manufacturers, distributors, delivery logistics capability model(s), performance, inventory, logistics activities, and costs in SCM. It can be seen that each researcher, more or less, has addressed some

dimensions of SCP measures, but not all. Amongst all measures, customer responsiveness/satisfaction/claims has been received the most recognition.

For this study, it's necessary to have a conceptual framework to better understand a specific phenomenon such as JLCs, SCP, and TMFP. A research framework is developed for this study as presented in Figure 1.



Source: Model developed by the researcher; JLCs elements adopted by the researcher, Sahay and Mohan (2003), Green et al. (2008), and Qrunfleh and Tarafdar (2013); SCP elements by Mandal (2015), Li et al. (2005; 2006); and TMFP dimension by Li et al. (2006) and Qrunfleh and Tarafdar (2013).

Jordan's Logistics Capabilities (JLCs)

The author defines logistic capabilities (LCs) as: the firm's ability to deliver goods and services using

several transport logistic modes in right quantities at the precise times required by customers by using some or all fixed, permanent and basic installations that are needed

for any firm, country, and region such as roads, bridges, railways, subways, airports, seaports and telecommunication to facilitate the smoothly flow of products, information, financials, and services.

Specifically, the main role of offering several qualified transport logistic capability modes using permanent and well-established logistics such as the infrastructure for any firm at any country is to facilitate the flow of goods, products, items, components, semi-finished products, and raw materials for both in-bound and out-bound logistics through different partners in the whole SC, which gives them more flexibility, speed and agility for the global trade. The LC framework for this study is conceptualized as a seven-element construct: roads (RO), railways (RW), airports (AP), seaports (SP), and telecommunications (TL). All these elements are related to logistics that have adversely affected SCP at any country in terms of fulfilment customer orders, lead-time, efficiency, speed, inventory control, and costs (Anand and Grover, 2015; Sahay and Mohan, 2003). Adopting and using several transport logistic capability modes and side by side with building, offering, and using a well-established logistic infrastructure is aimed at creating cost efficiencies in SCP by effectively managing inventory, better serving customers, and focusing on improving the entire SC network, thus minimizing the waste of time, effort, and resources (Sangari et al., 2015; Ramirez, 2012).

Establishing and offering good logistic activities might achieve and implement the following issues: 1) use several routes for intermodal transportation mode(s) based on quality, dependability, speed, capacity, and reliability to achieve lowest costs strategy; and 2) adopt a Just-in-time technique by shipping the right products, at the right time, to the right place, in the right quantity, and in the right condition (Borgstrom and Hertz, 2011; Cook et al., 2011). Therefore, the main purpose of the SC network is

flexibility and responsiveness by adapting quickly and effectively to rapidly changing customer wants and needs (Bargshady et al. 2016; L'Hermitte et al., 2016). Recent studies such as Tse et al. (2016) and Singh (2015) have focused on the relationship between the firm's supply chain and the manufacturing firm performance. In particular, they suggest that the high level of SCP will enhance and support the firm's flexibility, responsiveness, and performance in the global marketplace (Sangari and Razmi, 2015; Zhou and Chong, 2014; Qi et al. 2011). However, they did not take into consideration the effect and availability of the necessary transport logistic capabilities on the firm's supply chain network.

Supply Chain Performance (SCP)

Supply Chain Flexibility

Juttner and Maklan (2011) defined flexibility as 'being able to bend easily without breaking' (Juttner and Maklan, 2011: 247); also it's defined by others as the firm's ability to adapt and respond to changes according to its resources and capabilities with other partners (Alam et al., 2014; Sindhuja, 2014). Many studies include the speed concept into their flexibility definition to emphasize on doing things right in a fast manner (Sangari et al., 2015; Joon Ceo et al., 2014). Thus, flexibility of the SC gives a firm an opportunity to customize products in the warehouse to correspond with customer needs and wants for unique packaging and unitization. Arif-Uz-Zaman and Ahsan (2014) state that building strong, close, and strategic relationships with suppliers, manufacturers, wholesalers, retailers, distributors, customers and even with competitors helps to improve the level of flexibility within the entire SC by creating a mutual understanding between the members and among other partners. Anand and Grover (2015), on the other hand, argue that to achieve a better supply chain performance, partners within the entire SC have to

be perfect in applying customer order, fulfilling accurate, adequate, and timely information, reliable, dependable, delivery consistency, and short lead-time.

In literature, there are several types of SC flexibility such as volume flexibility, which refers to the ability to increase or decrease volume production of one or more product types in response to customer demands; elasticity of operations; delivery flexibility, which refers to the SC capability members to shorter lead-times according to customer requirements; range flexibility, which refers to the operations tolerance that can be changed; and finally, response flexibility, which refers to the speed of the operations that can be changed (Bortolotti et al., 2015; Eckstein et al., 2015; Rosio and Safsten, 2013).

Several studies in SCM literature suggest that supply chain flexibility can be measured by many dimensions such as: customization of products, volume, introduce new products, access, reroute delivery, and responsive to demand changing flexibility (Zhou and Chong, 2014; Kurdve et al., 2014). The types of flexibility in the relevant literature has provided inconsistent findings on the effect of SC flexibility on firm performance indices such as market share, return on investment, return on assets, sales growth, and profits (Dubey and Gunasekaran, 2015). Some studies found that SC flexibility enhancement effort was not successful and in some situations, flexibility could actually lead to negative result (Prajogo and Olhager, 2012). In contrast, there is another studies confirmed the positive impact of SC flexibility on firms' performance, such as Li et al. (2006) and Swamidass and Newell (1987); they found a significant positive effect of product mix, and new product flexibility on net profit rate, and sales growth. Furthermore, firms which offer multiple and several types of products were be able to increase their market share, operations, and financial performance (Zhang et

al., 1990), while, in other studies, it is found that there is a positive effect of volume flexibility on sales growth and net profits such as the study of (Zhou and Chong, 2014; Joon Seo et al., 2014). Therefore, flexibility is considered a crucial factor to the success for the whole supply chain, since the supply chain works on an uncertain, elastic, and dynamic environment. This factor was tested and validated in the literature by many researchers such as (Beamon, 1999; Gunasekaran et al., 2004). The researcher selected this practice for testing and investigating, because flexibility might be a fundamental element of SCP for improving TMFP in Jordan.

Delivery Reliability

Many authors defined delivery reliability as the extent to which the firm is capable of providing on time without any delay the type and volume of products required by customer(s) (Alam et al., 2014; Li et al., 2005). In the relevant literature, many researchers mentioned that there are many factors playing a crucial role in measuring delivery reliability in any firm and at any country, which means that the probability of delivery being executed on time without any order interruption and/or incorrectness (ratio of the number of deliveries made without any error regarding to the: time, place, price, quantity, and/or quality) to the total number of deliveries in a specific period of time (Soepenberget al., 2008). Furthermore, it can be estimated and measured by the the deliveries done without error compared to the total deliveries made. Several studies emphasized that to achieve high level of reliability in various delivery logistics modes, firms should have an aability to perform the promised service dependably and accurately without any deviation in time (delay) and/or place (route) (Lee et al., 2013). Therefore, SC strategies focus on how both internal and external delivery

logistics modes and distribution processes can be integrated and coordinated throughout the entire SC to better serve ultimate customers, while enhancing the performance of the individual SC members (Green Jr et al., 2008). Thus, the integrative philosophy of SC, eliminates the boundaries of the single firm and put emphasis on the effectiveness of the SC as a whole (Papakiriakopoulos and Pramatar, 2010).

Supply Chain Responsiveness

Gunasekran et al. (2008) state that supply chain responsiveness refers to the supply chain's ability to effectively respond to changes that impact the focal firm's customer by reacting quickly and responding effectively to changing market requirements. Furthermore, it is defined by many researchers as the firm's speed in response to customer orders (Ramanathan et al., 2011). Therefore, many studies emphasize "velocity" and "speed" in their definition of responsiveness and ensure that it means doing things very fast (Sharma and Bhat, 2014; Li et al., 2006). Flexible response includes product variety, order size, order configuration, orders to handle and other issues and dimensions, which means that a customer's unique requirements can be met in a cost-effective manner. Thus, Lee et al. (2013) point out that customer responsiveness is considered one of the most important factors that can be measured in the performance of SC. The strategy of SC varies from one firm to another including responsiveness in their SCs, but the main objectives can be summarized as follows: increasing response to customer wants and needs, deriving costs out of the system and finally, turning savings into additional value for the customer (Eckstein et al., 2015). Therefore, many firms focus on the fast, reliable delivery, and responsiveness to the changing customer requirements (Richey et al., 2009).

Supplier Cooperation

Supplier cooperation is defined by Alam et al. (2014) as a closer involvement and strong relationship between the firm and its suppliers for a variety of tasks; while, Foerstl et al. (2015) defined it as suppliers' ability to provide and deliver the necessary raw materials/ components/ items/ products to manufacturers on time, and in good condition; thus, reliance on suppliers not just for raw materials but also for the design and development of component parts. In the literature, supplier cooperation is considered a vital dimension of SC performance; therefore, firm's involvement with suppliers enables them to learn about customer requirements and be more involved in decision-making processes leading to a better application of resources, continuous improvement, and other collaborative efforts positively affect performance, one of the main major factors for the firm's operational success, and for a SC as a whole (Sangari et al., 2015; Tan et al., 1998). Whitfield and Landeros (2006) present that poor quality vendor, supplier-buyer relationship, and delivery performance generates higher levels of inventory, order accumulation, and delay. Cooperation and coordination with qualified, reliable, and limited number of selected suppliers focus on direct, long-term association and is interested in mutual planning and problem-solving efforts (Dubey et al., 2015). Supplier cooperation concerns in sharing benefits among different departments, branches, parties and participation in one or more key strategic areas such as technology, products, and markets (Cook et al., 2011). The benefit of strategically cooperation with supplier is working closely together to eliminate wasteful efforts and resources with partners, and can share together in resources, knowledge, and capabilities with the objective of enhancing the competitive position of each partner

leads to win-win relationship and benefits (Jabbour and Jabbour., 2016). Identifying adequate suppliers and establishing such cooperation reduce supply-related risks, give access to technology, knowledge, and facilitate information exchange (Kurdve et al., 2014). Therefore, suppliers' involvement and cooperation needs to identify buyers' expectations in terms of quality, quantity, delivery, service, price, cost, and can help firms to improve them in overall quality, reduce costs, knowledge, and competition (Khanchanapong et al., 2015); when the expectations are met, this relationship becomes valuable, and it turns into a useful tool that helps the firm achieve its aims and objectives within the whole SC (Foerstl, et al.,2015).

Customer Satisfaction

The main purpose of customer satisfaction within the whole SC is meeting customer's expectations, developing customer's loyalty to the firm's products and services, managing customer complaints, following up the sale after delivery, improving level of customer satisfaction, building and establishing long-term relationships with customers, and managing customer's claims etc. (Garbie et al., 2014). Customer satisfaction is concerned with planning, implementing, and evaluating successful services and relationships between providers and recipients in both upstream and downstream logistics of SC. It deals with the ability to communicate delivery of the right products and services to customers locally and globally in the right time, right place, and right quantity with correct invoice (Yen and Yen, 2012). This construct was tested and validated in the literature by many authors such as (Dubey at al., 2015; Li et al., 2006).

Manufacturing Firms Performance (MFP)

MFP is important for SCM. MFP refers to the firm's

ability to reach and achieve its market-oriented goals and financial goals. It gives a quantitative measurement of the performance of the whole SC. Therefore, improving performance of a firm is a continuous process that necessitates logical performance measurement tool, and develops an instrument for comprehending key performance indicators objectives; which relates planning, structuring, and implementation of performance purposes into daily routine jobs and tasks done by the firm internally and externally (Anand and Grover, 2015). Moreover, it gives several reasons for the firm to focus on the importance of the performance measurement and being in highly agenda of management due to dynamic environment, intensified competition, changes in external demands, and the influence of advancements in technology. Therefore, firm performance represents a stage of monitoring as well as a performance assessment tool in a SC network (WH Ip et al., 2011). After the researcher reviewed the literature, numerous previous studies classified performance measures into two categories:

Market share performance measures (MSF)

Firms with high market shares might be able to achieve more sales in markets. Furthermore, it might be extended to cover more areas around the globe and might be a leadership in the long-run that leads to achieve more revenues (Zhang et al., 2015; Yiing and Ahmad, 2009). Ou et al. (2010) state that the improvement of customer satisfaction and loyalty will contribute to growth in market shares, which can be transformed into better firm financial performance.

Financial performance measures (FP)

Most firms are becoming more aware and towards optimizing their costs, efficiency, and being profits-oriented (Zhou et al., 2014. Financial performance that

measure profitability includes return on investment (ROI), growth in return on investment, profit margin on sales, and overall competitive position. Financial instruments are used as a tool for comparing, evaluating firm's behaviour, and any firm including SC should lead to enhance and improve firm's performance (McCormack et al., 2008; Green Jr et al., 2008). Nowadays, most firms have a certain number of key performance indicators (KPIs) such as ROI for assessing its financial performance that already related to SC. The KPIs give a firm an ability to visible the SCP and help to assess the accuracy of supply/demand plan such as forecasting of future demand, and the execution performance such as compassion between actual sales and forecast plan (Bhateja, et al., 2012).

Rationale for the study

MFs in Jordan to let them be able to be more successful and to pave the way for better future, they need to create strong linkages with other firm partners using the concept of SCM. More and more MFs in Jordan today are realizing and emphasizing on developing and implementing a comprehensive SC strategy-and then linking this strategy and performance to the overall firm's goals.

The Purpose of the Study

The purpose of this study is to investigate and identify the current JLCs elements that support SCP for TMFs in Jordan; and examine to what limit SCP practices are adopted and used by TMFs in Jordan. Additionally, the study shows the impact of current JLCs elements on manufacturing supply chain performances, and textile manufacturing firm performances.

Research Questions

This study tries to fill the gap in the field of SC and

its implementation in Jordanian environment as illustrated in the following points: 1) most of research studies reviewed did not investigate the logistics capabilities in Jordan and its impact on SCP and firm performance; and 2) most studies investigated SCP in the developed countries, whereas very few works have conducted in developing countries, Jordan as an example. Therefore, the researcher formulated the following research questions:

1) What is the current logistics capability elements that textile manufacturing firms in Jordan are used to support supply chain performance?

2) What supply chain performance elements are that applied and adopted by textile manufacturing firms in Jordan?

3) Is there an impact of current logistics capabilities in Jordan on, supply chain performance, and textile manufacturing firms' performance?

Importance of the Study

The importance of this study can be summarized as follows: 1) this paper will give insights how dependable, reliable and effective logistics capabilities elements will lead to positive SCP outcomes; 2) improving and enhancing the economic levels through developing SCP; and finally, enhancing and leveraging the textile manufacturing firms' performance in developing market context. Furthermore, it will be of high value for top managers, practitioners, scholars, policy makers, and academics, which may aid managers in decision-making process for both manufacturing and service sectors.

Research hypotheses

This study is considering exploratory and descriptive, since there is a lack of studies on SCP particularly on TMFs in Jordan. The current JLCs developed and formulated by the researcher for this study, and proposes that the current JLCs elements have an impact to support

SCP in the flow of products, goods, items, components, and raw materials for TMFs in Jordan. Current JLCs elements (such as using of roads, railways, etc.) are expected to enhance and support SCP for TMFs through SC flexibility, delivery dependability, SC responsiveness, supplier cooperation, and customer satisfaction. Sahay and Mohan (2003), state that the successful SCP at the firm level depends heavily on the state of the logistics capabilities scenario at any country. Undoubtedly, the state of logistics in India has been impacting the industrial and economic performance for a long period of time. However, deployment of logistics capabilities and technology to foster collaboration, flexibility, speed, and accuracy would be the foundation for developing a competitive SC framework in any country. This leads to formulate the following hypothesis:

Hypothesis 1:

H0: There is no statistically significant impact of current Jordan's logistics capabilities elements on SCP elements in Textile Manufacturing Firms in Jordan at ($\alpha \leq 0.05$).

SCP construct developed for this study, and assumes that SCP have an impact on the financial and market share of TMFP in Jordan. Prior studies have indicated that various components such as integration, and strategic supplier relationships have an impact on financial performance (FP) (Dubey and Gunasekaran, 2015; Eckstein et al., 2015). For example, flexibility of SC can improve supplier performance, eliminate wasteful efforts, share resources and capabilities, reduce time to market (Jabbour and Jabbour, 2013; Banomyong and Supatn, 2011), increase the level of customer satisfaction, and responsiveness (Khanchanapong et al., 2014). The improvement in customer satisfaction and

loyalty will contribute to increase the growth of market share and market share performance (MSP) (Prajogo and Olhager, 2012). Thus, the increase in MSP may leads to high levels of TMFP related to SCP in terms of increased sales, wide coordination and cooperation between firms and more integration between supply chains. Hence, a positive impact of SCP elements on TMFP dimension can be proposed. Hypothesis 2 is formulated as the following:

Hypothesis 2:

H0: There is no statistically significant impact of SCP elements on Textile Manufacturing Firms performance in Jordan at ($\alpha \leq 0.05$).

The current JLCs construct influence not only SCP elements, but also on the overall TMFP dimension. All factors that are related to logistics capabilities activities have adversely affected the supply chain network at any country-in terms of fulfilment of customer orders, lead-time, efficiency, speed, costs, and overall TMFP (Alam et al., 2014; Cook et al., 2011). Therefore, a positive impact can be proposed. Thus, the researcher formulated the following hypothesis:

Hypothesis 3:

H0: There is no statistically significant impact of current Jordan's logistics capabilities elements on Textile Manufacturing Firms performance in Jordan at ($\alpha \leq 0.05$).

SCP construct influenced not only by current Jordan's logistics capabilities elements, but also effect on the overall TMFP dimension. All factors that are related to SCP have a mediating impact, affected by Jordan's logistics capabilities through supply chain network at any country-in terms of fulfilment of customer orders, lead-time, efficiency, speed, costs, and

have an impact of overall TMFP (Alam et al., 2014). Thus, the following hypothesis is formulated:

Research Methodology

The methodology adopted in this study followed the guidelines recommended in the reviewed literature (e.g. Li et al., 2006; Tan et al., 2002), which consisted of employing quantitative data collection procedures to facilitate the analysis and increase the validity and reliability of results. The development of the instruments followed the four phases suggested by Li et al. (2006), namely: (1) item generation, (2) pre-pilot study, (3) pilot study, and (4) population, sampling and large-scale data analysis. Appendix A includes the instruments and their items.

Instrument's validity, according to Fraenkel and Wallen (2003) validity ensures the ability of an instrument to measure the intended concept. Therefore, to achieve a good level of instrument validity, five-point Likert scale paper-based questionnaire survey was reviewed and re-evaluated by three academicians and three practitioners who were asked to put their comments on it, to ensure the appropriateness of instrument and usefulness for the targeted respondents; redundant and ambiguous items were either modified or eliminated. Thus, new items were added wherever deemed necessary. A questionnaire survey strategy was used in this study for having advantages such as: suitability for statistical analysis, allowing the collection of a large amount of data from a large number of respondents, versatility and standardisation, relative low cost, efficient and provision of generalisation (Hammersley, 1987).

Instrument's reliability, reliability according to Fraenkel and Wallen (2003) refers to the "consistency of scores or answers from one administration of an

instrument to another, and from one set of items to another". Creswell (1994) mentioned that the reliability score of an instrument indicates the stability and consistency of items contained and to what limit it measures the concept in a correct manner. The most popular test of reliability is Cronbach's alpha, which measures the internal consistency of an instrument. An alpha score of higher than 0.7 is accepted for all constructs of this study (Nunnally, 1978).

In the pilot study phase, a small pilot study was performed using eleven responses out of forty-one distributed (represent 26.8 per cent response rate) to respondents similar to the target respondents that were selected randomly from the textile manufacturing sector to ensure representativeness, to indicate that all members of the sample are "given a known non zero chance of selection" (Sekaran, 2000), and to reduce the instrumentation threat. Therefore, purification was carried out, by examining the Corrected-Item Total Correlation (CITC) scores of each item with respect to a specific dimension of a construct. Nunnally (1978) suggests that items are "meaningfully correlated" if they have an r-value ≥ 0.5 (Tracey et al., 2004).

Population, Sampling, and Large-Scale Methods

Target Population, the target population for this study was high-level managers (presidents, purchasing managers, supplying managers, planning managers, logistics managers, production managers, distribution/transportation managers and operations managers). There were 44 completed and usable responses out of 196, representing 22.4 percent response rate.

Sampling Frame, the sample for this study was randomly selected large-sized TMFs listed in Ministry of Industry and Trade in Jordan (MIT). Each firm in the sample met the following criteria: 1) must be in market

at least 3 years; and 2) must have more than 250 employees.

Large-Scale Methods, a large-scale paper-based questionnaire survey (final version) was self-distributed to the whole population of large-sized textile manufacturing firms in Jordan. The survey questionnaires were sent with a cover letter indicating the purpose and significance of the study to the target respondents. For JLCs elements and SCP dimensions' measurement, the respondents addressed each statement using five-point Likert scale type response set: 1=strongly disagree, 2=disagree, 3=moderate agree, 4=agree, 5=strongly agree; whereas, for TMFP dimension, the respondents addressed each statement using five-point Likert scale type response set: 1=strongly deteriorated, 2=slightly deteriorated, 3=no change, 4=slightly improved, 5=strongly improved.). The outcomes for TMFP scale are considered decreased if they are under or equal to 2.5; no change if they are more than 2.5 and less or equal to 3.5, finally increase if more than 3.5; while, the outcomes of all other scales in this study are considered low if they are under or equal to 2.5; moderate if they are more than 2.5 and less or equal to 3.5; finally, high if more than 3.5.

Descriptive statistics such as means, frequencies and percentages were used in large scale survey to describe the demographic information variable, while, means, frequencies, percentages, and standard deviations were used to analyse JLCs elements, SCP practices and TMFP. Furthermore, multiple regression analysis was also used. Data were analysed by using SPSS version (17.0).

Results for the Measurement Model

Instrument that measures current JLCs elements were developed by the researcher; while SCP elements and TMFP dimensions were developed by Cook et al., (2011), Li et al., (2006), Li (2002), Qi et al., (2011) and Zhang (2002).

Convergent and Discriminant Validity

For JLCs construct, it includes five dimensions and twenty-one items. An initial factor loading indicated that JLCs/RO4, JLCs/RT7, JLCs/AP9, JLCs/SP14, JLCs/SP17 and JLCs/TL20 items had ≤ 0.5 . After removing these items, the remaining items were factor analyzed and the results are shown in Table 1a, Appendix A. It can be seen that all items loaded on their respective factors, with most of loadings ≥ 0.5 . SCP construct was initially represented by five dimensions and twenty items. An initial factor loading indicated that SCP/SCF1, SCP/DR7, SCP/SCR12, SCP/SC14, and SCP/CS19 items had ≤ 0.5 . After removing these items, the remaining items were factor analyzed and the results are shown in Table 1b, Appendix A. It can be seen that all items loaded on their respective factors, with most of loadings ≥ 0.5 .

For TMFP construct was initially represented by two sub-dimensions with seven items. When TMFP analysed, all items were loaded on their respective items, with most of loadings above 0.5 as shown in Table 1.c, Appendix A. After an examination of the descriptions of items, the two factors were named as market share performance made of MSP1, MSP3, and MSP4 (coded as TMFP/MSP) and financial performance made of FP2, FP5, FP6 and FP7 (coded as TMFP/FP).

Table 1a: Initial and final corrected item-total correlation results for (a) current JLCs construct

Item	Initial Corrected Item-Total Correlation	Final Corrected Item-Total Correlation	Initial Alpha	Final Alpha
<i>(a) JLCs construct</i>				
<i>JLCs/RO1</i> Our firm uses roads to high limit to serve our customers.	0.633	0.822		
<i>JLCs/RO2</i> Our firm delivers most products via roads due to lowest costs.	0.552	0.747		
<i>JLCs/RO3</i> Our firm receives most raw materials, components and items through roads.	0.522	0.664		
<i>JLCs/RO4*</i> Our firm is rarely using roads for export transactions.	-0.044		0.554	0.822
<i>JLCs/RT5</i> Our firm uses railways as a fast way for inbound and outbound logistics.	0.561	0.857		
<i>JLCs/RT6</i> Our firm is rarely using railways to deliver products for local market.	0.653	0.710		
<i>JLCs/RT7*</i> Our firm receives most of raw materials via railways.	0.203	0.783	0.716	0.871
<i>JLCs/RT8</i> Our firm considers railways as an efficient way to export our products.	0.563			
<i>JLCs/AP9*</i> Our firm uses airports to a high limit for inbound logistics.	0.410			
<i>JLCs/AP10</i> Our firm considers airports as not efficient for importing and exporting products.	0.701	0.721		
<i>JLCs/AP11</i> Our firm is rarely using airports due to high costs.	0.794	0.811		
<i>JLCs/AP12</i> Our firm uses airports to receive only spare parts as fast way.	0.750	0.793	0.681	0.750
<i>JLCs/SP13</i> Our firm uses seaports to receive most of raw materials.	0.732	0.788		
<i>JLCs/SP14*</i> Our firm uses seaports for most product exports.	0.129			
<i>JLCs/SP15</i> Our firm uses seaports to a high limit due to low costs.	0.848	0.878		
<i>JLCs/SP16</i> Our firm needs a long time to receive and transmit its products via seaports.	0.745	0.785		
<i>JLCs/SP17*</i> Our firm considers seaports as not an efficient way for inbound and outbound logistics.	0.212		0.788	0.881
<i>JLCs/TL18</i> Our firm has an excellent communications tools for contacting their suppliers and customers.	0.622	0.715		
<i>JLCs/TL19</i> Our firm has a reliable communications network.	0.773	0.793		
<i>JLCs/TL20*</i> Telecommunication networks cover all geographic areas that we serve.	0.233			
<i>JLCs/TL21</i> Our firm offers all resources to update its communication tools.	0.780	0.851	0.890	0.911

*Denote items were dropped.

Table 1b: Initial and final corrected item-total correlation results for (b) SCP

Item	Initial Corrected Item-Total Correlation	Final Corrected Item-Total Correlation	Initial Alpha	Final Alpha
(b) SCP construct				
SCP/SCF1*Our supply chain is able to offer/introduce new products for customers.	0.345	0.904		
SCP/SCF2 Our SC is able to deal with different customized customer orders.	0.785	0.791		
SCP/SCF3 Our supply chain is able to produce different features of products such as: options, sizes, and colours.	0.644	0.880	0.714	0.86
SCP/SCF4 Our SC is able to introduce large numbers of product improvements.	0.791	0.876		
SCP/DR5 Our firm delivers the kind of products needed in right condition.	0.732	0.673		
SCP/DR6* Our firm's policy is updating its old delivery modes(s) by reliable one(s).	0.343	0.811	0.887	0.891
SCP/DR7 Our firm delivers different kind of products needed in on time and without any delay.	0.511	0.718		
SCP/DR8 Our firm's policy is delivering need products to customers without any interruption.	0.728	0.779	0.874	0.890
SCP/SCR9 Our SC responds quickly to offer special customer specifications.	0.718	0.854		
SCP/SCR10 Our SC responds quickly to fulfil customer orders on time without delay.	0.779			
SCP/SCR11 Our SC responds effectively to our changing requirements of cost.	0.854	0.741		
SCP/SCR12*Our SC responds quickly to introduce large numbers of product improvements.	0.421			
SCP/SC13 Our suppliers dealing with our firm in an open and honest way.	0.658	0.735	0.798	0.860
SCP/SC14* Our suppliers deal with the information that provided by us in a confidential way.				
SCP/SC15 There is a willingness from our suppliers to provide us with a lot of assistance without exceptions.	0.286	0.682		
SCP/SC16 Our firm expects to leverage the business between us and our suppliers in the future.	0.611	0.741	0.786	0.854

SCP/CS17 Our SC is frequently assessing the formal and informal complaints of our customers.	0.679	0.774		
SCP/CS18 Our SC is frequently following-up and monitoring our customers for quality/service feedback.	0.671	0.751		
SCP/CS19* Our SC is frequently measuring and evaluating our customer satisfaction.	0.731			
SCP/CS20 Our SC is frequently interacting with customers to be more responsiveness, reliable to their standards.	0.342			
	0.727			

*Denote items were dropped.

Table 1c: Initial and final corrected item-total correlation results for (c) TMFP construct

Item	Initial Item-Total Correlation	Corrected Item-Total Correlation	Final Item-Total Correlation	Corrected Initial Alpha	Final Alpha
<i>(c) TMFP construct</i>					
TMFP/MSP1	0.633		0.633		
TMFP/MSP3	0.792		0.792		
TMFP/MSP4	0.799		0.799	0.874	0.874
TMFP/FP2	0.761		0.761		
TMFP/FP5	0.867		0.867		
TMFP/FP6	0.853		0.853		
TMFP/FP7	0.773		0.773	0.791	0.798

Jordan's Logistics Capabilities and Textile Manufacturing Firms

The collected data for this part was analyzed to answer the first question of this study.

Question One: What is the current Jordan's logistics capability elements that textile manufacturing firms in Jordan are used to support supply chain performance?

The results as illustrated in Table 2 show that there is a critical role and significant impact of the current JLCs elements on supporting and enhancing SCP for TMFs in Jordan. It is found that current Jordan's logistics capabilities are well prepared, established, and covers

most areas in Jordan with high reliability in terms of roads, seaports, and telecommunication, which are facilitate the smoothly flow of goods, information, and raw materials for inbound and outbound logistics. Thus, it is expected to lead to higher level support of SCP. Additionally, most TMFs in Jordan have high level of use of these infrastructures except in the railways and airports, which have weak and limited level of use in flow of products/goods and/or raw materials. Seaport as logistic capability support in Jordan is well-prepared for import/export, but unfortunately there is only one seaport in Aqaba city at the south region of Jordan and it

is very far from the industrial zones in the middle and north regions of Jordan. Therefore, the Jordanian government is still behind in facilitating or offering fast flow of products, and raw materials at lowest cost in inbound and outbound logistics for most textile firms. Telecommunication sector in Jordan is very well-established, prepared, and covers all areas in the Kingdom of Jordan with high level of reliability. According to the results of this study, most of JLCs elements are considered more developed compared to those found in the reviewed literature such as Sahay and Mohan's (2003) study about India. Figure 2 illustrates the mean values of usage Jordan's logistics capabilities by TMFs for the flow of products and raw materials in

inbound and outbound logistics.

Table 2: Summarizes the Mean Values of the Current JLCs Sub-constructs versus the Level of Use, n=44.

Jordan's Logistics Capabilities (JLCs) (Sub-constructs)	Mean	SD	Level of Use	α	Total α
Roads (JLCs/RO)	3.59	1.08	High	0.82	0.83
Railways (JLCs/RW)	1.03	0.95	Weak	0.87	
Airports (JLCs/AP)	0.93	0.83	Weak	0.75	
Seaports (JLCs/SP)	3.51	0.92	High	0.88	
Telecommunication (JLCs/TL)	4.01	0.85	High	0.91	

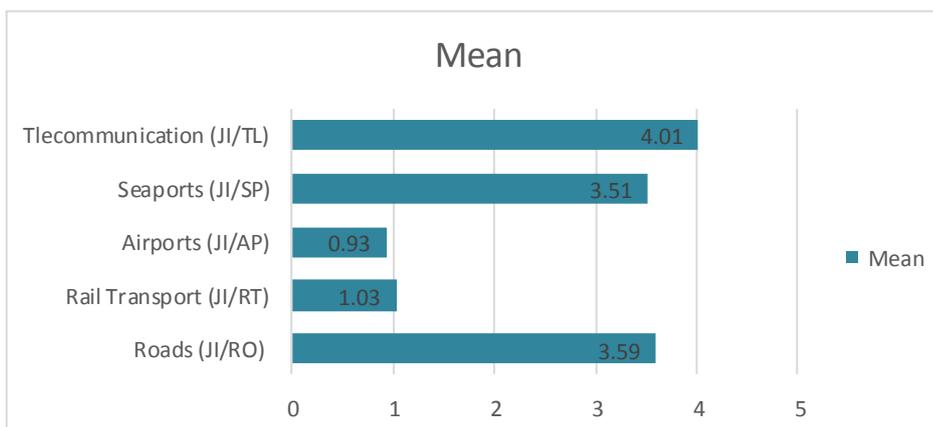


Figure 2: Mean values of level of usage of Jordan's logistics Capabilities for flow of products and raw materials.

Supply Chain Performance of Textile Manufacturing Firms in Jordan

The collected data for this part was analyzed to answer the second question of this study.

Question Two: What supply chain performance elements are that applied and adopted by textile manufacturing firms in Jordan?

The results as indicated in Table 3 show that the SCP elements of TMFs in Jordan adopts to a high level in terms of SCF, whereas they adopt DR, SCR and CS to a moderate level; while, it is found that SC adopts to weak

level. Therefore, SCF is considered the most important SCP practice in TMFs, followed by DR, SCR and CS. Figure 3 illustrates the mean values SCP elements used by TMFs in Jordan. Figure 5 shows the mean values usage of SCP elements in TMFs in Jordan. Findings of this construct provides an empirical support to some studies in the literature of SCM that emphasized the importance of supply chain flexibility as a main element in supply chain performance and it has a significant impact on firms performance such as (WH Ip et al, 2011; Juttner and Maklan, 2011; Atilgan and McCullen, 2011;

Cook et al., 2011); while the results of this study are different from Kim's (2006) study who indicated that the efficient SCR in small firms may play a more critical role for sustainable performance improvement; whereas Koh et al. (2007) study had findings opposed to the

outcomes of this study, and which could supplier cooperation has a positive and significant impact on operational performance and does not have a significant impact on SC firm performance.

Table 3: Summarizes the Mean Values of SCP elements that adopted by the TMFs in Jordan versus the Level of Use, n=44.

	Coding	Mean	SD	Level of Agree	α
Supply Chain Flexibility (SCF)	SCP/SCF	3.89	0.11	Strong Agree	0.76
Delivery Reliability (DR)	SCP/DR	3.29	0.34	Moderate Agree	0.89
Supply Chain Responsiveness (SCR)	SCP/SCR	3.48	0.71	Moderate Agree	0.86
Supplier Cooperation (SC)	SCP/SC	2.36	0.35	Weak Agree	0.86
Customer Satisfaction (CS)	SCP/CS	3.32	0.27	Moderate Agree	0.84
Total Average Mean		3.27		Moderately Agree	0.87

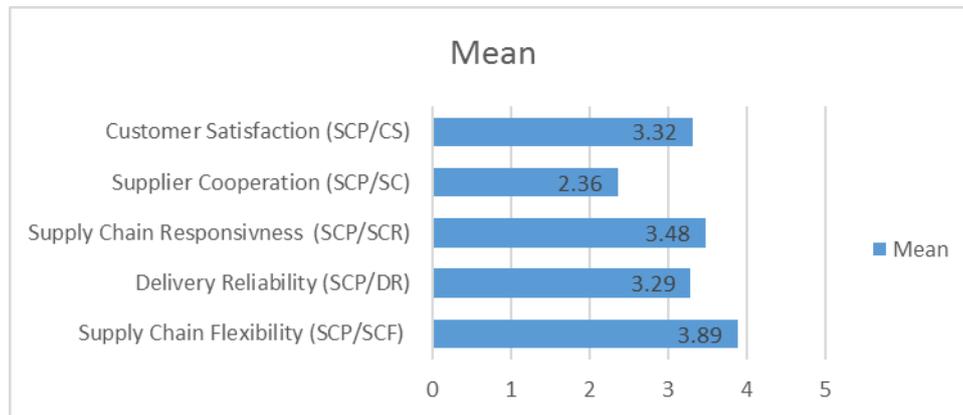


Figure 3: Mean values of Level of Usage for SCP Elements in Textile Manufacturing Firms in Jordan.

**Textile Manufacturing Firms’ Performance (TMFP)
Market Share Performance (MSP)**

The results as illustrated in Table 4 show that the market share and financial performance of the TMFs in Jordan have decreased during the last three years may be due to many reasons, some of these as: TMFs may have not applied successful programmes, policies and strategies that make them are able to compete in terms of quality, services, marketing, and/or trying to achieve their targets by expanding their industries and investments in different markets; the second, is due to the unstable environment of surrounding geographic neighbour countries according to the Arab Spring and wars. The results of TMF dimension is not similar to those of some studies in the literature which emphasized SCP and their significant impact on market share firm performance such as Green Jr et al. (2008), who stated that logistics performance is positively impacted by SCP

and that both logistics performance and SCP strategy positively impact marketing performance. Furthermore, McCormack et al. (2008) suggested that the delivery process has a higher impact on overall firm performance than other SC processes. Whereas, the findings of FP dimension are not similar to those of some studies reviewed in the literature which emphasized the importance of SCP and their significant impact on financial firm performance such as Ou et al. (2010) study, who presented that external customer-firm-supplier relation management positively impacts firm internal contextual factors, which in turn have positive effects on firm performance. As a result, this construct indicates that the TMFP (MSP and FP) decreased during the last three years. Figure 4 shows the mean value of Textile Manufacturing Firms’ Performance Dimensions in Jordan.

Table 4: Mean Values of TMFP (MSP, FP) in Jordan, n=44

Coding	Items	Mean	SD	α
<i>Market Performance</i>				
TMFP/MSP1	Market share (n=44)	2.54	0.82	$\alpha = 0.87$
TMFP/MSP3	Growth of market share (n=43)	2.22	1.09	
TMFP/MSP4	Growth of sales (n=40)	2.31	0.73	
Average Mean)		2.35	0.88	
<i>Financial Performance</i>				
TMFP/FP2	Return on investment (n=43)	2.61	0.88	$\alpha = 0.79$
TMFP/FP5	Growth in return on investment (n=42)	2.41	1.38	
TMFP/FP6	Profit margin on sales (n=43)	2.67	1.17	
TMFP/FP7	Overall competitive position (n=43)	2.73	0.69	
Average Mean		2.60	1.03	
Total Average Mean (TMFP)		2.47	0.96	
Total α				0.83

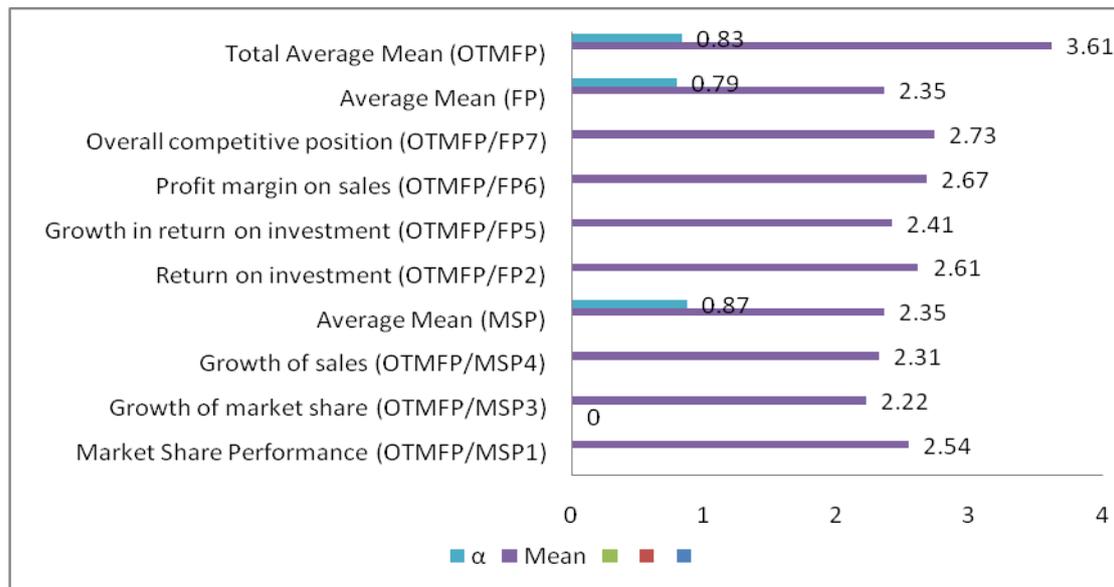


Figure 4: Mean values of Textile Manufacturing Firms' Performance Dimensions in Jordan.

The Impact of Constructs in the Conceptual Framework and Hypotheses Testing

Multiple linear regression analysis was used in this study to understand which independent variables are related to the dependent variable, then explore the forms of these impacts of dependent variable and one or more independent variables. Pearson Correlation Coefficient (r) also was used to measure the magnitude and direction of the impacts between variables. The researcher considers these ranges of correlations (r) for hypotheses analyses in this study as follows: if $r > 0.7$, correlations are considered strong; if $0.3 \leq r \leq 0.7$, correlations are considered moderate; and if $r < 0.3$, correlations are considered weak. Hence, the same ranges apply to negative values (Cronk, 2004).

The data collected for this part was analyzed to answer the third question of this study.

Question Three: there is any impact of current logistics capabilities in Jordan on, supply chain performance, and textile manufacturing firms' performance?

First: The impact of current JLCs elements on SCP items.

Hypothesis 1:

H0: There is no statistically significant impact of current Jordan's logistics capabilities elements on SCP elements in Textile Manufacturing Firms in Jordan at ($\alpha \leq 0.05$).

The results as illustrated in Table 5 show that JLCs/TL has statistically significant difference ($p < 0.05$) with SCP/SCF item; while there are no significant differences for the others. This means that this item has a significant impact on SCP/SCF. A strong positive correlation was statistically significant was found, the proportion of variance explains 73.4%; whereas, results reveal that JLCs/TL, JLCs/RO and JLCs/SP have statistically significant difference ($p < 0.05$) with SCP/DR item; while there are no significant differences for the others. This means that those items have a significant impact on SCP/DR. Strong positive correlation for JLCs/TL item, moderate negative correlation for JLCs/RO item, and weak positive correlation for JLCs/SP

item that were statistically significant were found, the proportion of variance explains 56.7%. Additionally, the results indicate that JLCs/RO, JLCs/SP, JLCs/TL and JLCs AP have statistically significant differences ($P < 0.05$) with SCP/CR item; while there are no significant differences for the others. This means that those elements have a significant impact on SCP/SCR. Moderate positive correlations for JLCs/RO, JLCs /SP, JLCs/TL elements, and weak negative correlation for JLCs/AP that were statistically significant were found, the proportion of variance explains only 41.3%. The results indicate that JLCs /RO and JLCs/TL have

statistically significant differences ($P < 0.05$) with SCP/SC item; while there are no significant differences for the others. Weak negative correlations for JLCs/RO and JLCs/TL items that were statistically significant were found, the proportion of variance explains only 24.5%. Finally, the results show that JLCs/RO an JLCs/AP have statistically significant differences ($p < 0.05$) with SCP/CS item; while there are no significant differences for the others. Moderate positive correlations for JLCs/RO and JLCs/AP items that were statistically were found. The proportion of variance explains 63.2%.

Table 5: Coefficients of JLCs elements and SCP items, n=44

Independent Variables	Dependent Variable	Standardized Coefficients-Beta	Variance (R ²)	t-value	Sig. (P)	H0 Rejected (Yes/No)
JLCs/TL	SCP/SCF	0.450	0.734	2.531	0.026	Yes
JLCs/TL	SCP/DR	0.713	0.567	4.671	0.001	Yes
JLCs/RO		-0.302		1.811	0.039	Yes
JLCs/SP		0.981		1.005	0.043	Yes
JLCs/RO		SCP/SCR		0.306	0.413	1.819
JLCs/SP	0.419		2.374	0.029		Yes
JLCs/TL	0.315		1.972	0.032		Yes
JLCs/AP	-0.235		1.771	0.042		No
JLCs/RO	SCP/SC		-0.240	0.245		1.782
JLCs/TL		-0.171	1.230		0.041	Yes
JLCs/RO	SCP/CS	0.456	0.632	2.676	0.021	Yes
JLCs/AP		0.313		1.969	0.034	Yes
Total JLCs Elements	Total SCP Items	0.407	0.605	2.127	0.002	Yes

The results as indicated in Table 6 show that the JLCs elements have statistically significant differences ($p < 0.05$) on SCP items. The proportion of variance explains 41.3%, while the F-value was 43.79, which

indicates that there is moderate positive correlation and a statistically significant difference were found. Therefore, the researcher rejected the null hypothesis 1 at 0.05 levels.

Table 6: Pearson Correlation Coefficients between JLCs elements and SCP items, n=44

Coding	JLCs Elements	SCP Items
JLCs Pearson Correlation	1	
Sig. (2-tailed)		
N	44	
SCP Pearson Correlation	0.413	1
items Sig. (2-tailed)	0.000	
N	44	44

Note: Correlation is significant at the 0.05 level.

Second: The impact of SCP items on TMFP dimension.

Hypothesis 2:

H0: There is no statistically significant impact of

SCP elements on Textile Manufacturing Firms performance in Jordan at ($\alpha \leq 0.05$).

The results as shown in Table 7 illustrate that SCP/SCF, and SCP/DR items have statistically significant differences ($p < 0.05$) on TMFP/MSP item; whereas the other items were not found statistically significant. Strong positive correlation for SCP/DR item, and moderate positive correlation for SCP/SCF item that were statistically significant were found, the proportion of variance explains 76.7%, while the F-value is 51.46. Additionally, the results reveal that SCP/SCR, SCP/SC and SCP/CS have statistically significant differences ($p < 0.05$) with TMFP/FP item; while there are no significant differences for the others.

Table 7: Coefficients of SCP items and TMFP dimensions, n=44

Independent Variables	Dependent Variable	Standardized Coefficients-Beta	R ²	t-value	Sig. (P)	H0 Rejected (Yes/No)
SCP/SCF	TMFP/MSP	0.534	0.767	2.456	0.021	Yes
SCP/DR		0.721		3.137	0.002	Yes
SCP/SCR	TMFP/FP	0.334	0.673	1.564	0.038	Yes
SCP/SC		-0.265		1.031	0.041	Yes
SCP/CS		0.425		2.085	0.033	Yes
Total SCP Items	Total TMFP Dimension	0.713	0.786	3.195	0.000	Yes

This means that those elements have a significant impact on TMFP/FP. Moderate positive correlations for SCP/SCR and SCP/CS elements, and weak negative correlation for SCP/SC that were statistically significant were found, the proportion of variance explains only 67.3%, while the F-value is 66.46. Therefore, these items are related to TMFP/FP item. The researcher rejected the null hypothesis 2 at the 0.05 level. The

results as illustrated in Table 8 show that the SCP items have statistically significant differences ($P < 0.05$) on TMFP sub-dimensions. The proportion of variance explains 78.6%, while the F-value was 73.89, which indicates that there is strong positive correlation and a statistically significant difference were found. Therefore, the researcher rejected the null hypothesis 2 at 0.05 levels.

Table 8: Pearson Correlation Coefficients between SCP items and TMFP dimension, n=44

Coding	SCP items	TMFP dimension
SCP items	1	
Pearson Correlation		
Sig. (2-tailed)	44	
N		
TMFP dimension	0.713	1
Pearson Correlation	0.000	
Sig. (2-tailed)	44	44
N		

Note: Correlation is significant at the 0.05 level.

Third: The Impact of JLCs elements on TMFP dimension.

Hypothesis 3:

H0: There is no statistically significant impact of current Jordan’s logistics capabilities elements on Textile Manufacturing Firms performance in Jordan at ($\alpha \leq 0.05$).

The results as illustrated in Table 9 show that JLCs/SP, JLCs/TL and JLCs/AP elements have statistically significant differences ($p < 0.05$) with TMFP/MSP item; whereas there are no significant differences for the others. This means that those elements have a significant impact on TMFP/MSP item. A moderate positive correlation for JLCs/SP and JLCs/TL elements, and weak negative correlation for JLCs/AP were statistically significant were found, the proportion of variance explains 31.9%. In the other hand, the results reveal that JLCs/RO, JLCs/SP, JLCs/TL and JLCs/RT have statistically significant differences ($p < 0.05$) with TMFP/FP item; while there are no significant differences for the others. This means that those elements have a significant impact on TMFP/FP item. Weak positive correlations for JLCs/RO and JLCs/SP elements, weak negative correlation for JLCs/RT element, and moderate positive correlation for JLCs/TL element that was statistically significant were found, the proportion of variance explains 41.0%.

Table 9: Coefficients of JLCs elements and TMFP dimensions, n=44

Independent Variables	Dependent Variable	Standardized Coefficients-Beta	Variance (R ²)	t-value	Sig. (P)	H0 Rejected (Yes/No)
JLCs/SP	TMFP/MSP	0.434	0.319	3.216	0.013	Yes
JLCs/TL		0.221		2.639	0.038	Yes
JLCs/AP		-0.217		2.523	0.041	Yes
JLCs/RO	TMFP/FP	0.176	0.410	1.574	0.045	Yes
JLCs/SP		0.233		2.745	0.031	Yes
JLCs/TL		0.456		3.755	0.003	Yes
JLCs/RT		-0.317		2.997	0.020	Yes
Total JLCs Elements	Total TMFP dimension	0.344	0.478	4.245	0.020	Yes

The results as shown in Table 10 illustrate that the JLCs elements have statistically significant differences ($p < 0.05$) on TMFP dimension. The proportion of variance explains 57.8%, while the F-value was 54.48, which indicates that there is moderate positive correlation and a statistically significant difference were found. Therefore, the researcher rejected the null hypothesis 3 at 0.05 levels.

Table 10: Pearson Correlation Coefficients between JLCs elements and TMFP dimension, n=44

Coding	JLCs elements	TMFP dimension
JLCs elements	1	
Pearson Correlation		
Sig. (2-tailed)	44	
N		
TMFP dimension	0.344	1
Pearson Correlation	Sig. (2-tailed)	0.000
	44	44
N		

* Correlation is significant at the 0.05 level.

Research implications and limitations

The results of this study have important implications for practitioners as in the following: First, this research study provides a set of valid and reliable measurement for evaluating JLCs, and further benchmarking and comparing other logistics activities across other developing countries. The measurements developed in this study capture different current aspects (i.e. roads, rail transport, airports, seaports, and telecommunication) of JLCs, and can thus be considered a better measurement for another logistic capability framework. These measures can be used by practitioners not only to assess the current JLC, but also to understand the impact of JLCs on SCP, and on overall manufacturing firm's

performance. Second, the findings of this study identify the main JLC elements (RO, SP, and TL) for supporting and enhancing SCP. Furthermore, the results of this study demonstrate to practitioners that in order to improve SCP for TMFP, and increase the level of TMFP in Jordan; therefore, an effective implement often of SCF and SCR practices with trading partners are a must.

Despite the fact that this research study has made significant contributions at both theoretical and practical levels, yet it has some limitations, which are described below:

First, due to time and money constraints, some limited dimensions of SCP are considered for this study, while there are some crucial dimensions that may be implemented in future studies and were not taken into consideration. Second, this study relies on one questionnaire survey for data collection method. The researcher was not able to conduct interviews with the respondents for the same issue due to managers' highly demanding positions; they may be too busy, and may not want to cooperate with the researchers and could not give them the opportunity to meet them in interviews to collect the required data. Third, in this study, the researcher used single respondent in a firm to fill the questionnaire that is related to the SCP and TMFP research. Therefore, using only single respondent rather than many is not suitable to collect accurate enough data about the SCP and TMFP in Jordan and may lead to cause some measurement inaccuracy.

Conclusion

The three hypotheses proposed and formulated in this study are presented three impacts in the main constructs of conceptual research framework. The findings are presented in Tables 11&12 that summarizes the impacts of the research framework for this study. The three hypothesized impacts were found significant at the 0.05

level. These hypotheses include H1 (has impact of JLCs elements on SCP items), H2 (has impact of SCP items

on TMFP dimension), and H3 (has impact of JLCs elements on TMFP dimension).

Table 11: Results of the Impacts of the Main Construct in the Conceptual Research Framework (Proposed Hypotheses).

Hypothesis	Impacts (Total Average)	Total Effect (P-Value)	Pearson Coefficient (r)	Correlation R ²	H0 Rejected (Yes/No)
H1	JLCs → SCP	0.011	0.413	0.170	Yes
H2	SCP → TMFP	0.032	0.713	0.508	Yes
H3	JLCs → TMFP	0.029	0.344	0.118	Yes

Note: value is significant at $\alpha < 0.05$

The results as shown in Table 12 indicate that there is significant impact of JLCs on SCP, and JLCs on TMFP; also, there is a significant impact of SCP on TMFP. As pointed earlier in this study, roads, seaports,

and telecommunication are considered major transport elements of JLCs that support SCP for TMFs in Jordan to facilitate the smoothly flow of products and raw materials in both inbound and outbound logistics.

Table 12: Correlations Matrix for Proposed Hypotheses, n=44

Coding	JLCs elements	SCP elements	TMFP items
JLCs elements			
Pearson Correlation	1		
Sig. (2-tailed)			
SCP elements			
Pearson Correlation	0.413	1	
Sig. (2-tailed)	0.000		
TMFP items			
Pearson Correlation	0.344	0.756	1
Sig. (2-tailed)	0.000	0.000	

Note: Correlation is significant at the 0.05 level.

Overall, the findings of the three hypotheses reveal and indicate that high level of using well-established and prepared transport logistics capabilities will lead to support SCP, enhancing and facilitating the whole supply chain network in flow of products and materials. Also, adoption and implementation proper and

successful SCP practices will lead to improve the TMFP in Jordan. All of the three hypotheses that were analyzed in this study were found significant. Thus, Jordan has a well established and well prepared logistics in all elements presented in this study except of the airports and railways transportation.

Recommendations for Future Research

First, future research may apply multiple methods of obtaining data such as triangulation methodology (questionnaire survey and interviews) and seek to utilize multiple respondents from each participating firm is an

effort to enhance reliability of the research findings. Second, future research can expand the domain of SCP elements by considering additional elements such as E-procurement, Just-in-time, and lead-time management, etc., which have not been discussed in this study.

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رأسة أئر القدرات اللوجستية الأردنية وأداء سلاسل التزويد على أداء شركات تصنيع المنسوجات - دراسة تحليلية

محمد أنور الشبول¹

ملخص

هدفت هذه الدراسة الى بحث أئر القدرات اللوجستية الأردنية بأبعادها المتمثلة في (الطرق، والسكك الحديدية، والمطارات، والموانئ البحرية والاتصالات) وأداء سلسلة التزويد بأبعادها المتمثلة في (مرونة سلسلة التزويد، واعتمادية النقل، واستجابة سلسلة التزويد، وتعاون المزود ورضا العملاء) على أداء شركات تصنيع المنسوجات (الحصة السوقية والأداء المالي) في الأردن. ولتحقيق هدف الدراسة تم تطوير أداة الدراسة-الاستبانة- وتم توزيعها على عينة عشوائية مستهدفة مكونة من (44) شركة لصناعة المنسوجات كبيرة-الحجم عاملة ومسجلة في وزارة الصناعة والتجارة في الأردن، حيث تم جمع البيانات من خلال الاستبانة. من المجموع الكلي تم استرداد 44 استمارة صالحة للتحليل، حيث تم اختبار إطار البحث باستخدام طريقة اختبار الفرضيات الاستنتاجية. وقد استخدمت مجموعة من الأساليب الإحصائية الوصفية لاختبار فرضيات الأئر مثل: المتوسطات الحسابية، والانحرافات المعيارية، ومقياس كرونباخ ألفا. بالإضافة الى ذلك، تم استخدام تحليل الانحدار المتعدد ومعامل ارتباط بيرسون التي حددت الأئر بين الأبعاد الرئيسية. تم تحليل إجابات المسح باستخدام SPSS (17). وقد كانت أبرز النتائج التي توصلت إليها الدراسة ما يلي:

- جاء مستوى استخدام شركات تصنيع المنسوجات في الأردن للقدرات اللوجستية المتمثلة بالطرق، والموانئ والاتصالات بدرجة كبيرة وهي معدة ومجهزة بشكل جيد والتي من شأنها أن تسهل وتدعم عناصر أداء سلسلة التزويد.
- جاء مستوى تبني شركات تصنيع المنسوجات في الأردن لعناصر أداء سلسلة التزويد المتمثلة بمرونة السلسلة بدرجة عالية، بينما هي بدرجة متوسطة لكل من اعتمادية النقل، استجابة سلسلة التزويد خدمة العملاء.
- وجود أئر ذي دلالة إحصائية بدرجة متوسطة بين القدرات اللوجستية في الأردن وأداء سلسلة التزويد.
- وجود أئر ذي دلالة إحصائية بدرجة قوية بين أداء سلسلة التزويد والقدرات اللوجستية في الأردن.
- وجود أئر ذي دلالة إحصائية بدرجة متوسطة بين القدرات اللوجستية في الأردن وأداء شركات تصنيع المنسوجات في الأردن.

تقدم هذه الورقة لمحة عامة عن القدرات اللوجستية في الأردن وأداء سلسلة التزويد؛ وبالتالي، ستكون ذات قيمة عالية لكبار المديرين وصانعي السياسات والأكاديميين، والتي قد تساعدهم في عملية صنع وبناء القرار.

الكلمات الدالة: القدرات اللوجستية، سلسلة التزويد، شركات المنسوجات كبيرة-الحجم، تصنيع، أداء، الأردن.

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