

10<sup>th</sup> International Strategic Management Conference

## Managerial Role in Strategic Supply Chain Management

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### Abstract

The dynamics of faster development in production and service areas set new expectation standards and traditional managerial attributes in supply chain management processes are being revised to improve firm's competitiveness in this changing market environment. Also, companies are now looking to develop new methods in areas such as manufacturing, flexibility, transportation and information technologies in order to have a strategic superiority in their supply chain. Managers are key factors in the organizational performance and the success of the supply chains. So, it is proposed that supply chain strategies have to be considered in the overall strategy and also the contributions of supply chain management can not be realized unless it is supported by the managerial board. Accordingly, the purpose of this study is to investigate the role of managerial attributes and its effects on the supply chain performance. The data in this study are collected from the supply chain managers of large manufacturing firms (employee>50) in Kayseri. The results indicate that managerial attributes have impact on supply chain performance.

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Peer-review under responsibility of the International Strategic Management Conference.

*Keywords:* Supply Chain Management, Managerial Attributes, Supply Chain Performance

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### 1. Introduction

In today's highly changing environment, organizations are increasingly facing intensifying global competition, rapid technological advances, and more demanding customer expectations (Vokurkar et al., 2002). Accordingly, these differences affect the management philosophy in the organizations. The dynamics of faster product development set new expectation standards and traditional managerial attributes are being revised to improve firm's competitiveness in this new environment. It is suggested in the literature that traditional competition of company versus company is changing toward a business model where supply chains compete against supply chains (Prajogo and Olhager). Therefore, managers and academic researchers have realized that a more integrated approach to conducting business is necessary.

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Strategic management philosophy in the supply chain can be described as a way of thinking that is devoted to discovering tools and techniques that provide for increased operational effectiveness and efficiency throughout the delivery channels that must be created internally and externally to support and supply existing corporate product and service offerings to customers (Cox, 1999). The basic meaning of this idea is that if organizations manage the total performance of the supply chain, they will have an improved value and strategic superiority in their market. Therefore, companies are constructing more efficient and responsive supply chains in order to have a sustainable competitive advantage.

According to the strategic management approach, supply chain management has two dimensions. The first can be referred to as the operational supply chain, and the second as the strategic supply chain (Cox, 1999). The operational supply chain refers to the series of primary and support supply chains that have to be constructed to provide the inputs and outputs that deliver products and services to the customers of any company. Strategic supply chain thinking is a way that recognizes the efficient use of power attributes in the supply chain for whatever is produced for customers. The strategic supply chain refers not only the operational efficiency, but also it is about the whole business strategy (Ellram and Carr, 1994).

In order to have a sustainable growth and gaining profit, companies are always looking for efficiency in their supply chains (Donlon, 1996). Therefore, supply chain thinking has tended to focus on the operational aspects of the processes rather than those that are of strategic importance. So, it is the reason of this study that supply chain management has to be considered in a strategic way with all departments and organizational members. In this process, managers give critical decisions, since they possess the power to control resources as dominant players of supply chains. The strategic decisions based on the development of the attributes of the supply chain managers are very important. Because, supply chain managers should have the knowledge of not only his own job, but also a comprehensive view of the whole system in a strategic approach. So, the purpose of this study is to investigate the role of managerial attributes and its effects on the supply chain performance.

This article is organized in four main sections. First, a review of the literature on strategic supply chain management, supply chain management as a management philosophy, and management perspectives for supply chain management, are presented, followed by the development of hypotheses. Second, the research method- participants, procedures, and measures- is discussed in detail. Third, an analysis of the field study data is presented along with the discussion of the results in relation to the literature. Finally, strengths and weakness, research implications and future research recommendations are given.

## **2. Literature Review**

In the following sections firstly, strategic supply chain management is described, then managerial role in supply chain performance is given in detail, following the hypotheses development.

### *2.1. Strategic Supply Chain Management*

A supply chain is a network of facilities and distribution options that performs the functions of procurement of materials, transformation of these materials into intermediate and finished products, and the distribution of these finished products to customers (Shin et al., 2000). It is a network of organizations involved in different processes and activities producing value in the form of products and services for the ultimate consumer.

Supply chain management can be defined as the series of approaches that integrate suppliers, manufacturers and warehouses in the most efficient way and while doing this; it minimizes the whole system costs and meets service level needs. The objective of the supply chain management is to maximize the supply chain surplus (Chopra and Meindl, 2009). From an industrial point of view, supply chain management involves a variety of management and technical issues, starting from the distributed design of products and processes, the decentralized but efficiently coordinated production of goods through suppliers contracting and outsourcing, the coordination of third-party logistics and multi-locations inventories (Villa, 2001). Latest evolution of supply chain management practices includes supplier partnership, outsourcing, cycle time compression, continuous process flow, and information technology sharing (Donlon, 1996). In short, supply chain management is a business strategy to improve shareholder and customer value by optimizing the flow of products, services, and related information from source to customer. It encompasses the processes of creating and fulfilling the market's demand for goods and services (Sum et al., 2001).

Supply chain management is a set of business processes that encompasses a trading partner community engaged in a common goal of satisfying the end customer. Thus, a supply chain process can stretch from a supplier's supplier to a customer's customer. This chain is managing the flow of products, services and associated information across the whole business system to maximize the value to the end customer (Giannoccaro and Pontrandolfo, 2002; Albino et al., 2007).

The first step of the supply chain decision is to determine supply chain strategies. Supply chain strategy determines a company's strategies while considering all steps of providing a product or a service to its customers. These strategies include; procurement of raw materials, transportation, production and transporting to customer. The second step of the supply chain decision is the supply chain planning. The objective of this step is to maximize the supply chain surplus while considering the decisions of supply chain and competitive strategies. The last step of the supply chain decision is the supply chain operations. In supply chain operations, organizations carry out the operations with respect to the decision. In this step, strategies are determined, decisions are made, plans are formed and supply chain is formed. That is why this step deals with directly to customers and their needs (Chopra and Meindl, 2009).

In order to stable the changing environment and become competitive, many manufacturers and service providers collaborated with their strategic suppliers to upgrade traditional supply and materials management functions and integrate them as a part of their corporate strategy (Monczka et al., 1998). Correspondingly, many wholesalers and retailers also integrated their logistics functions with other functional areas to enhance competitive advantage. Eventually, these two traditional supporting functions of corporate strategy evolved and merged into a holistic and strategic approach to materials and logistics management, commonly known as supply chain management (Tan et al., 2002). According to Cigolini et al. (2004), supply chain is a vital management process that should be strategically integrated with other functions inside the firm and across the firms.

In addition, managers and academicians have realized that a more integrated approach to conducting business is necessary, and supply chain has emerged as an important management concept. The Academic Alliance Forum suggests that traditional competition ways are changing where supply chains compete against supply chains. Therefore, companies are constructing more efficient supply chains. Here, the strategic supply chain management thinking must be understood not just in terms of operational efficiency, but must be understood as a business strategy (Moberg et al., 2002).

The 1980s were a period of shifting attitudes toward purchasing role in corporate strategies. The researches focus during the 1990s appears to have shifted toward integration and the means by which the purchasing function recognized as a more significant input to the firm's performance (Ellram and Carr, 1994). Porter (2000), in his landmark work on the forces that shape the competitive nature of industry, identified buyers and suppliers as the two of the five critical forces. Thus, the strategic importance of the supplier and the firm as a buying entity began receiving recognition in the mainstream strategy literature. According to Porter's model, if there are fewer buyers in a business market, the bargaining of buyers increase. Therefore, the suppliers have to increase quality, and lower the costs. On the other hand, if there are fewer suppliers, the bargaining power of suppliers increases. They can determine the quality and the costs. Within this framework, any firm in a market chain competes for profit margin with its suppliers, and buyers. According to Bowersax et al. (2002), the context of an integrated supply chain is a multi-firm relationship management within a framework characterized by capacity limitations, information, core competencies, capital, and human resource constraints. Within this context, supply chain structure and strategy results efforts to operationally link an enterprise with customers as well as the supporting distributive and supplier networks to gain competitive advantage. Business operations are therefore integrated from initial material purchase to delivery of products and services to the end customers.

Sum et al. (2001) stated that supply chain is a strategic weapon in the highly changing competitive market. With the increased global competition and the higher customer expectations, supply chain users could well afford to exploit the purchasing function more to gain competitive advantage through better delivery, greater responsiveness, and lower costs. Also, Freeman and Cavinato (1990) emphasized the importance of strategically managed organization and they stated that in the strategically managed organization, each employee possesses the ability not only to understand the strategic intent of the firm, but also to actively contribute to the business.

Strategic evolution concept in strategic management, which is the basis for our research model, is composed of five stages in the supply chain management; basic financial planning forecast-based planning; externally-oriented planning, strategic management and knowledge-based business. The details for this concept are as follows (Cavinato, 1999);

In the first stage, supply chain department is seen as managing a functional, traffic-flow activity within the firm. The concept of the supply chain strategy is to manage a functional collection of the activities, while the concept

of the supply chain itself is internal, moving from material management to outbound transportation. The management emphasis is on the technical efficiency and management's primary concerns relate to conforming to norms. Key personal skills are task-oriented in this stage. In the second stage, the department is accepted as the distributor that makes possible the transfer of goods/services from the firm to the customer. The mindset is still minimizing costs, and at the same time the department moves functional to create the most efficient supply chain system possible. The concept of supply chain strategy is system efficiency. The management emphasis is on tactical managerial skills such as forecasting and low-level planning. Key personal skills are task-related, and team activities are mostly intra-departmental in this stage. The third stage is defined as providing all inbound and outbound flow functions, moving efficiency in its supply chain, and implements a system that is not necessarily based on lowest cost, but on what will make the department competitive against others. The supply chain strategy moves from being merely efficient to being competitive, while the concept of the supply chain has been greatly expanded to include moving items from the suppliers of the organization and their suppliers to the organization's customers' final customers. The organization expects the department to contribute thorough the quality of its operations, and support innovation, minimizing costs, maintaining a high quality of service, and continuously improving its processes as measured by customer-related outcomes. Strong managerial, interpersonal, and analytic skills are important. Also, teamwork plays an important role, and managers tend to rotate in and out frequently in this stage. The fourth stage is strategic management stage. The department has a true supply chain view, and it is in charge of delivering the raw materials from multiple firms through every stage to their ultimate consumers. The supply chain strategy is to build a system that is more effective than those of competitors, while the concept of the supply chain itself has been expanded to include a combined physical flow and information system among all firms in the system and extends to cash flows as well. This stage requires actively seeking innovation to enhance and support the competitiveness. The major activities of the managers include long-term orientation and coordination besides the duties of the previous stage. Management approach in this stage is positive and proactive, suggesting changes to improve market aggressiveness. Personnel have appropriate skills for important and visible role in the organization. The department has its own established career paths and opportunities in this stage. In the last stage, the supply chain strategy is coordinated with that of the firm as a whole. The concept of the supply chain is very broad, and logistics plays a strong role for delivering product/services from innovation to final use and disposition. The activities and scope of skilled personnel are simply without any limits. The organization expects from supply chain to develop creative packages of services for customers. Time and value are key measures in this stage. The management approach is to anticipate and identify any and all needs and opportunities it detects through its extensive lines of communication. Managers are emphasizing on learning to increase personal, team and organizational advantage. Team concept is very important, since a logistics background and skills are seen as essential elements in the team process. The career path is unlimited, and personnel are valuable to all functions in the organization.

## *2.2. Supply Chain Management as a Management Philosophy*

As a philosophy, supply chain management takes a systematic approach to viewing the supply chain as a single entity, rather than as a set of fragmented parts, each performing its own function (Ellram and Cooper, 1990). In other words, the philosophy of supply chain management extends the context of partnerships into a multiform effort to manage the total flow of goods from the supplier to the ultimate customer (Ellram, 1998). Thus, the supply chain management is a set of all the other supply chain members (Lambert et al., 1998).

As a management philosophy, supply chain management seeks synchronization and convergence of intra-firm and inter-firm operational and strategic capabilities into a unified, compelling marketplace force (Ross, 1998; Holmberg, 2000). Supply chain management as an integrative philosophy, directs supply chain members to focus on developing innovative solutions to create unique and individualized sources of customer value. Thus, supply chain management philosophy suggests that the boundaries of supply chain management include not only logistics but also all other functions within a firm and a supply chain to create customer value and satisfaction (Mentzer et al., 2001). In this context, supply chain management philosophy drives chain members to the customer orientation.

According to the Mentzer et al. (2001), supply chain management as a management philosophy has the following characteristics. The first one is a system approach to viewing the supply chain as a whole, and to managing the total flow of goods inventory from the supplier to the ultimate customer. The second is a strategic orientation toward cooperative efforts to synchronize and coverage intra-firm and inter-firm operational and strategic capabilities into a unified whole. The last one is a customer focus to create unique and individualized sources of customer value, leading to customer satisfaction.

In adopting a supply chain management philosophy, organizations have to establish management practices that permit them to act or behave consistently with the philosophy. As such, many authors have focused on the activities that constitute supply chain management. As suggested by Bowersox and Closs (1996), firms have to expand their integrated behaviour to incorporate customers and suppliers to be fully effective in today's competitive environment. In this context, the philosophy of supply chain management turns into the implementation of supply chain management, which is the set of activities that carries out the philosophy. This set of activities is a coordinated effort managed by supply chain managers between the supply chain partners and manufacturers, to dynamically respond to the needs of the end customer

### *2.3. Management Perspectives for Supply Chain Management*

Management perspectives have complex and dynamic structures. In this manner, four management perspectives are considered in this study. The first one is system perspective. A system functions by acquiring inputs from the external environment and then transforms the inputs and discharges outputs back to the environment. This is the system perspective of organizations. According to some of the authors, supply chain management has focused on management processes. Davenport (1993) defines these processes as a structured and measured set of activities designed to produce specific output for particular customer or market. Ross (1998) defines supply chain processes as the actual physical business functions, institutions, and operations that characterize the way a particular supply chain moves goods and services to market through the supply pipeline. These are the basis for system perspective. In other words, the supply chain management is accepted as a process which is a specific ordering of work activities across time and place, with a beginning, an end, clearly identified inputs and outputs, and a structure for action.

Another view in the supply chain process is lean approach. It is a dominant paradigm in supply chain management (Bowersox et al., 2002). This paradigm has eight defining characteristics (Cox, 1999). They are; striving for perfection in delivering value to customers; only producing what is pulled from the customer just-in-time and concentrate only on those actions that create value flow; focusing on the elimination of waste in all operational processes, internally and externally that arise from overproduction, waiting, transportation, inappropriate processing, defects and unnecessary inventory; recognizing that all participants in the supply chain are stakeholders and we must add value for everyone in the environment; developing close, collaborative, reciprocal and trusting (win-win), rather than arms-length and adversarial (win-lose) relationships with suppliers; working with suppliers to create a lean and demand driven logistics; reducing the number of suppliers and work more intensively with those given a preferred long-term relationship; creating a network of suppliers to build a common understanding and learning about waste reduction and operational efficiency in the delivery of existing products/services. In outlining these characteristics, Cox (1999) emphasized the importance of lean approach in the supply chain thinking.

The third view is contingency perspective, which emphasizes the relationship between strategy, structure and performance (Chow et al., 1995). Galunic and Eisenhardt (1994) emphasized that "the contingency theory maintains that organizational survival and performance depend on the extent of fit or alignment between organizational structures and factors such as condition, technology, and strategy". Also, Chow et al. (1995) stated that "good performance is contingent on congruence between structural properties, strategy, technology and the external environment".

The last view is comprehensive view. According to Kopczak and Johnson (2003), supply chain management is far more than just order fulfilment as it has been viewed in the system approach. It encompasses all the processes from product generation through end-of life recycling and disposal. The traditional, linear, functional view of the supply chain shows materials, information, and finances flowing toward the customer with the focus on order fulfilment between each player in the supply chain.

### *2.4. Hypotheses Development*

In today's world, supply chain management become a key strategic factor for organization effectiveness. The era of both globalization of markets and outsourcing has begun and many companies select supply chain and logistics to manage their operations. Most of the companies realized that in order to evolve an efficient and effective supply chain, supply chain management needs to be assessed for its performance [31-32]. Therefore, it can be said that the performance measures in a supply chain environment are vital inputs for the organizational success and they have an impact on performance outcomes (Kopczak and Johnson, 2003; Ou et al., 2010; Prajogo and Olhager, 2012; Zhu et al., 2013). Also, as discussed above managerial attributes are another key factor in the supply chain management. For

example, Cavinato (1999) presented some specific attributes of supply chain management and analyzed how they evolved throughout the corresponding five stages. The items were based upon the data obtained from personal interviews combined with a structured survey conducted at 199 companies world-wide between 1992 and 1998. Depending on the above given literature and these longitudinal research findings, the model is established as in Figure-1 and it is hypothesized as follow.

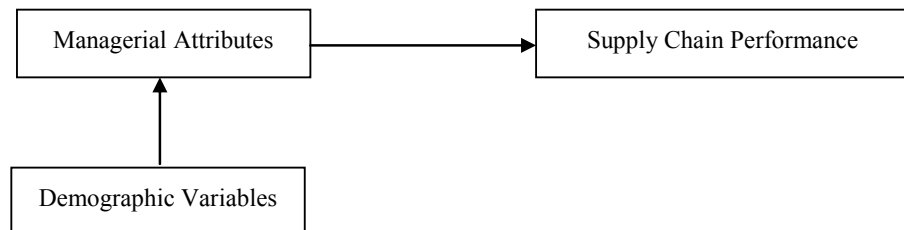
*Hypothesis 1:* Managerial attributes have a positive impact on supply chain performance.

*Hypothesis 2:* There is a positive relationship between strategic evolution stages of the supply chain managers and the supply chain performance

*Hypothesis 3:* There is a positive relationship between strategic evolution of the stages of the supply chain managers and the age of the supply chain managers.

*Hypothesis 4:* There is a positive relationship between strategic evolution of the stages and the education level of the supply chain managers.

*Hypothesis 5:* There is a positive relationship between strategic evolution of the stages and the sector experience of the supply chain managers.



**Figure-1**

The model for managerial attributes and supply chain performance

### 3. Methodology

#### 3.1. Research Goal

In this survey, we aimed to investigate the impact of managerial attributes on supply chain performance, according to the strategic evolution of supply chain management concept.

#### 3.2. Sample and Data Collection

In this study, the effects of managerial attributes on supply chain performance within the strategic evolution stages are tested with survey sampling. The concepts of the strategic evolution of the managers are previously described in five stages. The supply chain attributes change as they progress across the stages from micro and technical tasks of jobs on stage-1 to stage-5. In addition, strategic profit model is applied to measure the role of managers' attributes on the supply chain performance. The data collection instrument was a structured questionnaire which was obtained from the literature. The forms include strategic evolution level of the managerial attributes and performance metrics.

The questionnaire forms' construct validities were approved by academicians who are studying in business management discipline. Then pre-test is applied to 30 managers. After the pre-test, the instrument has been refined by logistics managers from an aviation firm.

The data collected from the supply chain managers of large manufacturing firms (employee>50), belonging to Kayseri industry in Turkey. 500 employees were randomly selected to participate in this study, and a total of 371

responded. For our purposes, participants were required to work fulltime managers in logistics. The sample consisted of 267 (72%) male and 104 (28%) female participants with an average age of 39.17 years. Participants averaged 9.7 years spent in their current job and mostly in bachelor's degree (71.04%).

### 3.3. Measures

Items are averaged within the scales to create composite measures for each variable. Items were coded such that high scores equate to high levels of the construct of interest.

#### *Managerial Attributes Questionnaire*

The managerial attribute scale is adopted from Cavinato's (1999) research to measure the managers' strategic evolution stages. Respondents are asked to rate how much each item explains the supply chain/logistics concept from their own perspective on 5 point Likert Scale (1=not at all; 5=definitely). An example item from basic financial planning is "I want to do my best functional operation". The Cronbach's alpha for this scale was 0.87.

#### *Performance Metrics*

Strategic Profit Model which was developed by Bowersax et al. (2002) is used to measure the supply chain management performance. The scale is all in ratio scale.

### 3.4. Analyses and Results

The correlations among and descriptive statistics for the variables in this study can be found in Table 1.

**Table 1:** Mean, Standard Deviations, and Correlations

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Basic Financial Planning	1.94	.79	-									
2. Forecast Based Planning	2.69	.52	.412**	-								
3. Externally Oriented Planning	3.14	1.05	.397**	.307**	-							
4. Strategic Management	4.08	.71	.313**	.271**	.291**	-						
5. Knowledge Based Business	3.15	.98	.195*	.141*	.213**	.372**	-					
6. Supply Chain Performance	3.47	1.12	.136*	.181*	.206*	.313**	.289**	-				
7. Gender	.28	.07	.009	.032	.045	.112*	.086	.036	-			
8. Age	39.17	9.62	.023	.041	.102*	.129*	.141*	.134*	.021	-		
9. Experience	9.71	3.28	.092	.109*	.117*	.151*	.181*	.120*	.014	.019	-	
10. Education	.71	.18	.081	.132*	.174*	.191*	.169*	.157*	.027	.039	.024	-

Gender: 0=female; 1=male; Education: 0=High School/B.Sc; 1=M.Sc./MBA/Ph.D. \*p<0.05, \*\*p<0.01.

As can be seen from the above table, strategic evolution stages of the supply chain managers are positively related to the supply chain performance. Therefore, Hypothesis 2 is supported.

In addition, values for externally oriented planning, strategic management and knowledge based business are significant for age, experience and education level of the managers ( $p < 0.05$ ). The values for forecast planning are significant for experience and education level ( $p < 0.05$ ). Accordingly, the results moderately support Hypotheses 3; 4 and 5. Also, it is found that there is a significant correlation between strategic management and gender.

Regression analysis results for Hypothesis 1 are given as in Table 2.

**Table 2:** Regression Analysis

	Dependent Variable: Supply Chain Performance				
	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	F	df
Managerial Attributes	.227	.091	.079	90.803	9.673**

Note: Standardized values were used. \*\* $p < 0.01$

From the analysis, independent variable (managerial attributes) was regressed on the dependent variable (supply chain performance). As shown in Table 2, the weight for managerial attributes was significant and in the direction predicted. Thus, Hypothesis 1, regarding the positive impact of managerial attributes on supply chain performance was supported.

#### 4. Discussion and Conclusion

Since industrialized economies have shifted from natural resources to intellectual assets, knowledge management has become a key issue. In today's market, many organizations started to understand the importance of successful implementation of supply chain management and began to establish necessary steps for improvement. In addition, the strategic management concept has gain more and more in supply chains. In the literature, the researches emphasized a strong relationship between supply chain management practices and organizational performance. Accordingly, the managers and managerial attributes have to be considered in the supply chain processes. So, we aimed in this study to investigate the impact of managerial attributes on supply chain performance. According to the strategic evolution of supply chain management concept, as the experiential knowledge from international researches accumulates, as the level of strategic evolution of firm increases, it finally influences the companies success and its sustainable strategic priority in their market. It can be said that supply chains have some managerial stages according to the different structural managerial attributes. This is due to the particular types of power attributes that managers have and the ways where they own and control other supply chain members. This makes the evolution of the stages in the supply chain.

As a result, it is found parallel to the literature (Bowersax et al., 2002; Cigolini et al., 2004; Freeman and Cavinato, 1990) that managerial attributes have an impact on supply chain performance. Also, the results indicated that age, experience and education level of the managers are moderately related to the strategic evolution of the managers. The findings support for the theory and based on the findings we can conclude that our sample distributed from the stage 3 "externally oriented planning" stage to the most proactive one of the stage 5 "knowledge based business". Companies mostly appeared in fourth stage. This stage is "strategic management" stage and 50% of the sample is categorized within this stage according to the cumulative frequencies. Also, 15% of the companies are in the externally oriented planning stage and 35% of them are in the knowledge-based business stage. Nevertheless, it was not unexpected that, there was no company which has been appeared in either stage 1 indicating "basic financial planning" or stage 2 indicating "forecast based planning".

This study contributes to the field by providing a description and analyses of the influence of managerial attributes, and findings mesh with and extend previous theoretical and empirical research efforts. In addition, this study has several notable strengths. First, a large number of full-time employees from supply chain management levels of the organizations are involved in the survey. Second, the survey is made by face to face to reduce questionnaire mistakes. Third, this study advances the supply chain management literature in a strategic view by which managerial



attributes influences supply chain performance. Also, this study has several limitations. First, the sample was not demographically diverse and data are gathered from Kayseri in Turkey. Second, the collection of the independent and dependent variables in this study were gathered at the same time.

The findings of this study suggested that relationships do exist between managerial attributes and supply chain performance, but further research is needed to more closely examine the complexities of these relationships. Future research can extend this study's results by measuring other factors in the supply chain performance. In addition, the findings of this research provide useful insights for supply chain managers. Managers need to pay attention in understanding of how to manage supply chains strategically and in order to have a sustainable strategic priority in the market, it is also essential that practitioners properly understand the structural attributes that exist in their supply chains. Consequently, supply chain management performance may be viewed as a subset of the larger notion of organizational performance. So, there is a great need to the development of valid measures in the supply chain management and the items that are affecting the supply chain performance must be explored.

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