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The Effects of Confidence, Information Sharing and Innovation in Business Performance

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Abstract

In this paper it is investigated the effect of confidence, information sharing and innovation factors on supply chain management via survey method. In this context the data which obtained from 126 firms operating in Gaziantep via survey method analysed. As a result it is noticed that confidence and innovation effect firm performance positively in supply chain.

Keywords: Supply chain management, innovation, confidence, information sharing

1. Introduction

Supply Chain Management (SCM) has been intensively implemented by businesses in recent years in order to increase customer satisfaction and compete in the global world. In the previous periods, producers preferred mass production systems by reducing the number of products and process flexibility in order to reduce unit production costs. Activities such as production, marketing and finance, which took place within the enterprise during these periods, were considered more important. Today, businesses; take customer-oriented decisions, and are in an effort to improve partnership with the supply chain members in order to satisfy customers.

As the productivity of the companies and the customer satisfaction have become prominent today; companies will develop faster, by using new approaches in their operations, withdrawing from areas where there is no profitability or they are weak in competition and by designing and managing new business processes with business partners through abandoning traditional business methods. For businesses the way to survive under competition is to increase the quality of products and services, and to and improve management processes by investigating the factors that affect business performance. In current market conditions; to design the right products that customers need, to produce them in a shorter time, and to deliver these products to customers faster need much more efforts

(Evaldsson et al., 1993: 634-636). Supply Chain Management contributes to the control and coordination of inter-company processes, reduction of the costs and a better quality. Businesses that realize this, give more importance to SCM applications.

Businesses do not just produce products. They form a chain consisting of suppliers, distributors and customers in order to get the raw materials for production and to supply the products after the production phase to the customers. Today, to gain competitive advantage companies should not focus only on their own achievements but also on the success of the supply chain (SC) which they are involved. For this, the coordination among the members in the chain must be ensured, the atmosphere of trust must be established and the partnership must be supported with innovations. With SCM, companies can take advantage of all the opportunities within this vast network and have the ability to stand out in the competitive environment by delivering the products that can meet the needs of the customers at the desired amount and time, at the lowest cost. Therefore issues such as the formation of a supply chain network, mutual trust, information sharing and innovations become effective and gain importance in the performance of the company.

This study examines the impact of SCM applications on business performance in general. In this context, the relationships between business performance and variables such as confidence, information sharing and innovation that are important in SCM are examined.

2. Confidence in Supply Chain Management

A supply chain covers all the activities in the process from the design phase to the consumption phase of a product. The planning, follow-up and control of these activities constitute the sphere of interest for Supply Chain Management (Acar and Köseoğlu, 2014: 45). There are many definitions for SCM. According to a definition; "SCM is cooperation process between supplier, manufacturer, retailer, etc." (Houlihan, 1985: 22). Another definition says; "The strategic and systematic management of the business functions, processes and plans of all businesses included in a supply chain in order to increase the long-term performance of the supply chain and the businesses within this chain" (Acar and Köseoğlu, 2014 : 50 quoting from CSCMP, 2013).

Confidence reduces uncertainty and risk perception arising from opportunistic behaviors, thus ensuring that the parties are confident of each other in future relationships; allows the parties to increase their loyalty and provides opportunities for new investments both within the company and the SC (Yeung et al., 2009: 66). For confidence to be formed between members of the SC it is necessary to define which elements confidence should have. In this context, it has been revealed that SC has five confidence components. They are honesty, justice, loyalty, clarity/sincerity regarding the SC membership and competence (Riddals et al., 2002: 257). Confidence provides significant benefits for companies among SC members, improves their competitive advantage and gives opportunity of mutually more comfortable interaction (Jones et.al., 2010: 705).

There is evidence in the literature that SC confidence affects business performance. For instance; in their study Ian Stuart et al. (2012), found that people (and their relations with others) and the level of confidence that is formed by the competence level of supplier increased performance regarding market growth, customer satisfaction and financial performance. In this study, the effect of confidence variable in Supply Chain Management on business performance is investigated. Therefore, the first hypothesis of work is;

H1: Confidence affects business performance positively.

3. Information Sharing in Supply Chain Management

Information sharing is an activity in which conscious and voluntarily flow of information occurs as a result of the interaction between the businesses having information and the one to be informed in the SC. Companies in a SC can improve their common knowledge by restructuring rules regarding their co-works (Cheung, 2005). The degree of cooperation and integration between business departments and SC members is crucial to the success of SCM. Information sharing among SC members is the most obvious indication of collaboration between chain members (McCormack et al., 2001: 33).

To be competitive; businesses must be able to effectively manage their supply chains, therefore sharing and coordination of information between SC members and costs across SCs should be controlled throughout the chain. Businesses that use the right information at the right time and have knowledge will be more advantageous than their competitors. For any information to be useful and achieve business survival it should go through information management processes, which are based on culture and human. Businesses need to have strategies for information management, acquisition, use and transfer of information. As one of the information processes, information sharing is an organizational culture in businesses and it helps businesses to succeed. It has been pointed out that information sharing and the quality of information shared are indications of the SC performance (Cheng et al., 2008: 283; Zhou et al., 2007: 1348; Feldman et al., 2003: 63; Li et.al., 2006: 1641).

There is evidence in the literature that information sharing in SC has an impact on business performance. For example; Koçoğlu (2010) conducted a survey with 158 companies operating in Istanbul and Marmara Region in the manufacturing industry and found a positive significant relationship between supply chain performance and information sharing with customers, information sharing between functions and innovation. Bayraktar et al. (2009) using data obtained from 203 small and medium-sized enterprises operating in the metal industry and machinery, concluded in their analysis that the SCM and information systems have positive effects on the operational performance of companies. In this study, the effect of the information sharing variable in Supply Chain Management on the business performance is investigated. So the second hypothesis of the study is;

H2: Information sharing affects business performance positively.

4. Innovation in Supply Chain Management

Innovation contributes to lowering costs in SCM, more efficient use of assets and increasing sales. Innovation is an all-encompassing strategy developed by businesses to improve their abilities for competitiveness, increase their profits, be ahead of competitors in the sector and take a decisive role. There is a significant impact of firms' innovation capacity on SCM effectiveness and quality of relationship with SC partners (Ivarsson et al., 2009: 368-388).

Innovation in SC causes businesses to overcome their weaknesses and incorporate their expertise to increase their potential. SCM provides many benefits for the innovation to the firms. (Soosay et al., 2008: 160).

There is evidence in the literature that innovation in SC affects business performance. For example; Lee et al. (2011) conducted a survey of 243 hospitals with inpatient bed availability of 100 or over, and concluded that innovation in SC has a positive impact on SC efficiency, and supplier co-operation has positively influenced organizational performance. Güleş (2010) conducted regression analysis on 114 companies from the Association of Automotive Parts and Components Manufacturers and found that supplier participation in product innovation activities increased innovation performance of suppliers and that increased innovation

performance was a positive influence on the overall performance of the business. In this study, the effect of innovation variable in Supply Chain Management on business performance is investigated. Therefore, the third hypothesis of the study is;
H3: Innovation affects business performance positively.

5. Research Methodology

In this study; the relationship between variables such as confidence, information sharing and innovation in SCM and business performance is being investigated. Scope of research is limited to research subject and was conducted in 2015. A 5-point Likert-type survey was used as the data collection method in the study. Scales in the questionnaire used in the study were prepared by using validated scales in the literature. The questions on confidence variables were adapted from Kwon and Suh (2004), the questions on innovation variable from the study of Panayides and Lun (2009); the questions on information sharing from Li et.al., (2006) and Mzoughi et al. (2008); the questions on performance variable from Ellinger et al. (2008). The universe of the study is the manufacturing companies operating in Gaziantep Organized Industrial Zone in 2015. Therefore, the population of the study is 820 companies. In the study, the convenience sampling method was used and all of the data were obtained by face to face interview. In this context, the number of data used in the analysis in the study is 126. In this study; confidence, information sharing and innovation are independent variables, and business performance is dependent variable. The theoretical model of study is shown in Figure 1.

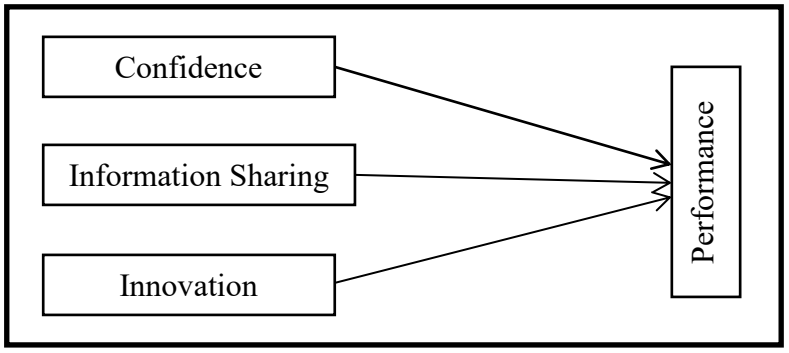

Figure 1. Theoretical Model

6. Findings

Demographic data of the study are given in Table 1. As can seen in Table 1, the vast majority of firms participating in the study are small businesses, mainly in the textile, food and construction sectors. Moreover, the vast majority of the respondents is male and has a managerial position with university education.

Table 1:
Demographic Findings

Sector	**Frequency**	**Percentage**	**Cumulative Percentage**
Textile	27	21,43	21,43
Food	25	19,84	41,27
Construction	18	14,29	55,55
Furniture	17	13,49	69,05
Machinery	10	7,94	76,98
Metal	7	5,55	82,54
Chemistry	4	3,17	85,71
Other	18	14,29	100
Number of employees	**Frequency**	**Percentage**	**Cumulative Percentage**
1-49	67	53,17	54,03
50-99	20	15,87	70,16
100-149	10	7,94	78,23
150-249	10	7,94	86,29
250-499	9	7,14	93,55
500+	8	6,35	100
Position	**Frequency**	**Percentage**	**Cumulative Percentage**
Owner/Share holder	38	30,16	31,93
General Manager	29	23,02	56,30
Deputy Gen. Manager	13	10,32	67,23
Mid-level Executive	39	30,95	100
Level of Education	**Frequency**	**Percentage**	**Cumulative Percentage**
Primary school	10	7,94	8,00
High school	24	19,05	27,20
College	10	7,94	35,20
Undergraduate	60	47,62	83,20
Graduate	21	16,67	100
Gender	**Frequency**	**Percentage**	**Cumulative Percentage**
Female	8	6,35	6,40
Male	117	92,86	100

In the study, all of the data related to the variables were subjected to factor analysis at the same time. In the factor analysis as seen in Table 2; items related to confidence variable "C7: Our supplier often gives us information that it is later proved to be not true" and "C8: Our supplier usually keeps his/her promises made to our company", items related to information sharing variable, "IS11: Our information sharing with our suppliers is trustworthy", items related to performance variable "P8: The cost of the goods sold are higher than that of our competitors", "P9: The number of new skills learned by our employees is higher than that of our competitors" and "P14: Customer satisfaction is higher than our competitors" were

removed from the analysis since their factor loadings were low. The questions were analyzed using basic components and the Varimax rotation method. The KMO value is 0.823 and sample size is sufficient for factor analysis. As a result of the Bartlett's test of sphericity test, Ki-square value is 2998,17, degree of freedom value is (df) 595 and Sig. value is 0,000 and the data comes from multivariate normal distribution and is suitable for factor analysis.

Table 2.
Factor Analysis of Variables

Items	Factors			
	1	2	3	4
We believe that even if the circumstances change, our supply chain partner (our supplier) will be ready and willing to provide us with service / support	,830			
Our supplier thinks of our good while making important decisions	,840			
When we share our problems with our suppliers, we know that they will respond with understanding.	,712			
We can rely on our suppliers that they will consider how their decisions and actions will affect us in the future.	,675			
We do not hesitate to be depend on the support of our supplier in matters that are important to us..	,499			
We are confident that our suppliers are telling the truth, even when they make statements that are not possible to us.	,603			
We know that when our suppliers have a suggestion about the business processes of our company, they share their best judgement	,628			
Our company believes that the supplier is sincere.	,709			
We inform our suppliers in advance about the changing needs		,557		

Our supplier shares their proprietary information with us	,590		
Our supplier fully informs us about issues that concern our business.	,722		
Our supplier shares their basic business process knowledge with us	,552		
We and our suppliers share mutual information that helps in the planning of business	,606		
We and our suppliers inform each other about events and changes that affect any of us	,695		
Information exchange between us and our suppliers; happens on time	,616		
Information exchange between us and our suppliers; is accurate	,705		
Information exchange between us and our suppliers; is complete	,613		
Information exchange between us and our suppliers; is adequate	,625		
In the field of supply chain, we constantly test new ideas		,751	
We are in the process of exploring new ways of doing business in our supply chain		,890	
We are innovative in the sense of developing operational methods in the supply chain.		,781	
We often suggest new ways to serve the supply chain.		,827	
Process innovation that we provide to the supply chain has improved over the last 5 years.		,725	
The return of our investments is higher than that of our competitor.			,631

Our average productivity per employee is higher than that of our competitor.	,636
We are faster than our competitors in producing and supplying to the market products/services.	,530
Responding to customer complaints is faster than that of our competitors	,541
Our market share is higher than our competitors	,719
Our sales are higher than our competitors	,722
Our profitability (in percent) is higher than our competitors.	,738
Return on equity is higher than our competitors.	,710
Our growth rate is higher than our competitors.	,706
Our operating income is higher than our competitors	,789
Profit on turnover (profit / total sales) is higher than our competitors.	,770
Our company's market value is higher than our competitors.	,755

1=Confidence, 2=Information Sharing, 3=Innovation, 4=Performance

The questions used in factor analysis were subject to reliability analysis and their Cronbach's Alpha values were examined. As a result of the analysis, Cronbach's Alpha coefficient was calculated as 0.894 for confidence factor; 0.908 for information sharing factor; 0.903 for the innovation factor; 0.920 for the performance factor. These results show that the factors are reliable. According to the results of the correlation analysis, a significant correlation was found between all the variables at positive significance level of 0.01.

Table 3:
Correlation and Reliability Analysis

	Alpha Coefficient	**Confidence**	**Information Sharing**	**Innovation**	**Performance**
Confidence	,894	1			
Information Sharing	,908	,667**	1		
Innovation	,903	,421**	,539**	1	

Performance	,920	,434**	,457**	,422**	1

**0,01 significance level

The regression model obtained as a result of regression analysis is as follows;

$Y=1,490 + 0,206X_1 + 0,196X_2 + 0,229X_3$

In model, Y stands for Performance, X_1 for Confidence, X_2 for Information Sharing and X_3 for Innovation.

As it can be seen in Table 4, the independent variables can explain the dependent variable (performance) by 27%. In other words, 27% of the changes in performance can be explained by confidence, information sharing and innovation. As seen in the table, a positive relationship at 5% level was found between the confidence variable (ρ: 0,050) and innovation (ρ: 0,014) and business performance. There is no autocorrelation according to Durbin Watson result. Shallow. As Sig. value is 0.000 the model is significant. On the other hand, there was no statistically significant relationship between the information sharing variable and the business performance (ρ <0,05). In other words, information sharing does not affect the business performance according to the research data. In this case; H1 and H3 hypotheses are supported by the study while H2 hypothesis is not.

Table 4.
Regression Analysis

Independent Variables	Standard Beta Coefficient (β)	Significance (ρ)
Confidence	,206	,050
Information Sharing	,196	,081
Innovation	,229	,014

F Value: 15,501 R^2 :0,276 Adjusted R^2 : 0,258 R:0,525
Standard error of estimation: 0,58965 Durbin-Watson : 2,054 ρ : 0,000

7. Conclusion and Recommendations

The aim of this research is to investigate the impact of confidence, information sharing and innovation on business performance in Supply Chain Management. In this context, the analysis of data obtained from 126 companies operating in Gaziantep resulted in the following findings.

According to the data in the research, confidence in suppliers in Supply Chain Management and innovation practices in Supply Chain Management have been found to have a positive effect on business performance.

The necessity of SCM, which is well understood that its implementation is essential in developed countries, should also be understood and emphasized by the businesses. With the development of information technologies, international boundaries have been lifted and the level of cooperation and integration among companies has increased. Today, businesses do not compete on their own rather they are creating a competitive environment in which they collaborate with partner companies. In this context, companies should give importance to cooperation and partnership with their customers and suppliers, and they shall share the risk as they share gain. To achieve this, they must establish an environment of mutual trust among the members and all information regarding business processes should be shared. Firms should prefer not only to achieve their own goals and increase their performance, but also to

increase the performance of all the members of the SCM. They should have the understanding that if our members win, we win, and if they lose, we also lose.

Developing and implementing innovative ideas helps both companies and their suppliers to improve their operations, be strong against their competitors, and ultimately increase business performance as well as customer satisfaction. As a result of increasing global competition in our age, companies have been forced to constantly renew themselves, keep up with the changes in the world, and produce low-cost but high-quality products.

Confidence is a very important part of the supply chain partnership. As a result trust relationship; companies will have confidence in the quality of the materials and raw materials they get from the suppliers, in the price policies they will apply, in the quantity and time of delivery, and consequently they will be able to maintain and increase customer satisfaction with the cost and time they have determined.

Shortages of information sharing while performing business processes, no information sharing or sharing incomplete information on issues that affects both companies and their suppliers mutually such as business planning and changing needs, will create serious disruptions in business processes. When there is a lack of information sharing level when performing business processes, if there is a lack of information sharing between the enterprises or the suppliers on the issues that affect each other, especially in business plans and changing needs, or if they share incomplete information, there will be serious obstacles in business processes. As a result, there will be a gap in the production and distribution processes and ultimately this will lead to customer dissatisfaction. In the supply chain partnerships just sharing information is not enough, it is also important that the shared information should be accurate and on time when business needs it. Any mismatch in the timing of information sharing may cause serious problems in business processes. Additionally, the sharing of information with the right person by the right person also has the greatest importance.

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