

# Determinants of the Level of Information Sharing and Information Quality in Supply Chain Management in Vlore, Albania

Msc. Alma Sheko<sup>1</sup>, Prof. Assoc. Dr. Alma Braimllari<sup>2</sup>

<sup>1</sup>Faculty of Technical Sciences, University of Vlora, Albania

<sup>2</sup>Faculty of Economy, University of Tirana, Albania

al.bregu@gmail.com, alma.spaho@unitir.edu.al

**Abstract:** *The development of information technologies has made possible that all the parts of a supply chain can communicate with each other. Information sharing and information quality are two important factors that directly affect in supply chain performance. The aim of this paper is to study the main factors that influence the level of information sharing and the level of information quality in the supply chain. The target population of this study is comprised of business units operating in Vlora, Albania. Data were gathered from 183 business units. The descriptive analysis and logistic regression analysis are used to analyze the data. The results of the logistic regression models for information sharing indicated that the SCM-IT inhibitors and local expansion of business units negatively influence the level of information sharing in supply chain, whereas the level of information quality was positively related to inter-organizational relationships and information sharing in the supply chain, and negatively related to SCM-IT inhibitors and business local expansion. The findings of this study can help the top managers and IT specialists to improve the overall performance of their company and their supply chain (s).*

**Keywords:** information, inter-organizational relationships, top management support and SCM-IT inhibitors, logistic regression

## I. Introduction

Supply Chain Management (SCM) deals with the coordination of independent enterprises, aiming at performance improving of the whole supply chain, taking into consideration their individual interests [i]. Information Technology (IT) and its use in enterprises and across the supply chain has become an important factor of competitive advantage for many corporations [ii]. Recent progresses in both information and technology have enabled many industry practices of acquiring, sharing, and using information [iii]. Effective information flows within and across organisations are essential to manage supply chains, and such SCM operations cannot be possible without IS management [iv]. Most companies are increasingly applying IT systems in practice in SCM to improve their performance in global competitive markets [v].

One of the most important issues of the coordination among enterprises is information sharing. The development of technology has simplified the exchange of information between different parts of the supply chain. Nowadays, enterprises are using more and more information technology tools and this is a very good approach, but also it is crucial that this information should be qualitative. Numerous studies made regarding this subject indicate that higher quality of shared information is associated with higher levels of operational supply chain performance and overall firm performance. According to a study about determinants of information sharing in supply chains in Albania, [vi] found that information sharing is impacted positively by commitment of supply chain partners, top management support and trust in supply chain partners. In the study of [vii] about collaboration and information sharing practices for SCM in Indian businesses, the results revealed that supplier selection and evaluation, involvement of customers in decision making and use of IT for different tools have a significant impact on business performance of Indian business units.

The importance of information quality in SCM is discussed in many scientific researches ([viii]-[xii]). According to [ix] and [xi], information quality is a vital component for organizational success in companies. In order to improve supply chain performance, managers need qualitative information to take operational, tactical or strategic decisions. Access to relevant information would enable firms to reduce uncertainty and improve planning which in turn improves their profitability [viii].

Different studies have used different attributes to measure the quality of information. In their study, [xiv] noted that the quality of information shall include these attributes: accuracy, timeliness, suitability and reliability of shared information. Similar attributes are used in studies of [xi] and [xiv]-[xvi]. In this study information quality is measured in terms of accuracy, timeliness, completeness, adequacy and reliability.

Previous findings indicate that information quality has a positive impact on the whole supply chain performance ([viii], [x], [xi], [xvi], and [xvii]). In their study, [iv] found that the frequency of problems with IT and SCM (*SCM-IS inhibitors*) negatively influence the operational performance of business units in Turkey and Bulgaria. Some of the factors that affect the information sharing and information quality in supply

chain management include environmental factors, intra-organizational factors, and inter-organizational relationships [xvi].

The aim of this study was to identify the factors influencing the level of information sharing and the level of quality of shared information of business units with their supply chain partners.

## II. Material and Methodology

The target population of the study consists of the business operating in Vlore City, Albania with 2 or more employees. According to the General Directorate of Taxation in Vlora, during year 2017 have operated 2000 business units. In total, 300 questionnaires were randomly distributed to top managers, executives and IT specialists of targeted companies during year 2017. Only 183 questionnaires were returned and were useful for the data analysis, representing a response rate of 61% and approximately 9% of the target population. The questionnaire included questions about: company profile, supply chain and supply chain management, information technology used by companies to manage their supply chain, items to measure level of information sharing/quality between trading partners, SCM-IT inhibitors and also the factors that can influence the level of information sharing and quality.

Items to measure information sharing and quality and items to measure the factors influencing the level of information sharing and information quality, adopted from [xvi] and [iv], are shown in Table 1, Appendix. All the items for each construct, except IT enablers, are measured on a 1–5 Likert scale from “Strongly Disagree” to “Strongly Agree”. Respondents were asked about the frequency of problems they they encountered from using SCM and IT practices in their business unit. The item for SCM-IT inhibitors are measured based on a 1–5 Likert scale from ‘not at all’ to ‘very frequently’. The items that represent each individual variable were subjected to reliability analysis. Determination of Cronbach's alpha coefficient of internal consistency is to ensure that the items comprising dimensions produced a reliable scale. A higher score will indicate a higher reliability, with a range from 0 to 1. The generally agreed upon lower limit of Cronbach's alpha is 0.7 [xviii]. Validity testing is done by using exploratory factor analysis with varimax rotation.

A business was considered with high level of information sharing/quality if the average value of information sharing/quality items is equal or higher than the overall mean of the sample.

A logistic regression model with a dichotomous response was modelled. The logistic regression equation has the following form [xix]:

$$\ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_k x_k$$

where  $p$  is the estimated probability of high level of information quality for the company and  $x_1, x_2, \dots, x_k$  are the independent variables of the model.

The estimated probability of the response occurring ( $p$ ) divided by the probability of not occurring ( $1-p$ ) is called the odds ratio (OR). Values of odds ratios higher than 1 indicate positive association between the variables, odds ratios equal to 1 indicate no association, while odds ratios lower than 1 indicate negative association between each independent variable and the dependent variable of the model.

STATA15 was used to analyze the data.

## III. Results and Tables

The results of descriptive analysis indicated that most of the business units in the sample are retailers (83%), 58% of them are local businesses. Also about 58% of them have more than ten years of experience and around 61% have more than 5 employees.

The results indicated that more than 59% of the companies used the Internet. Most of them use internet services such as email (47%) and websites (42%). More than 15% of targeted business units use a Customer Relationship Management system (CRM), and about 10% of companies make online purchases and 10% of them use electronic procurement (Figure 1 in Appendix).

The results of Table 1 in Appendix, indicate the frequency of problems faced by business units in Vlore during the use of information technologies in supply chain management.

About 27% indicated some problems with resource shortages, and 33% for integration with supplier's information technology. Business units in the sample rarely were face with problems about integration with existing information technology (26.8%) and customer's information technology (25.7%).

Descriptive statistics for all items on a 5-point Likert scale are shown in Table 2 in Appendix and all have Cronbach's alpha value higher than 0.8. The results of exploratory factor analysis with varimax rotation show that the values of factor loadings are higher than 0.6 for each item (Table 3 in Appendix). The corrected item total correction (CITC) for each item is shown in Table 3 in Appendix. For each factor resulting from exploratory factor analysis, a new variable was generated which takes the value 1 if the average value of the items of that factor is equal or higher than the overall mean of the sample and the value 0 otherwise.

The correlation matrix of aggregated variables and variables of the logistic regression models is shown in Table 4, in the Appendix.

### *Results of logistic regression models about information sharing*

The results of logistic regression model 1 for information sharing (Table 1) indicated that the model was statistically significant (LR chi-square = 14.7 (3),  $p < 0.01$ ). The value of Pseudo- $R^2$  was 6% and the percentage of cases correctly

classified was 66.12%. The level of information sharing was negatively related to SCM-IT Inhibitors, sector, business expansion and business experience in years. Whereas the Inter-organizational relationships, such as trust, commitment and shared vision between supply chain partners; top management support, and number of employees and the role of business in the supply chain positively influence the level of information sharing in the supply chain.

SCM-IT inhibitors were statistically significant at the 5% level, indicating that business units with high level of SCM-IT inhibitors were less likely (OR = 0.461) to have a high level of information sharing.

The results of logistic regression model 2 for information sharing (Table 1) indicated that the model was statistically

Table 1. Results of binary logistic regression for information sharing (OR)

Independent variable	Model 1	Model 2
Inter-organizational relationships	1.344	1.502
Top Management support	1.610	1.487
SCM-IT Inhibitors	0.461**	0.476**
Service sector		0.977
Number of Employees (> 10)		1.263
Local business		0.485**
Experience in years (> 15)		0.944
Retailer		1.619
Constant	1.358	1.312
LR chi-square (df)	14.7 (3)	20.36 (8)
% correctly classified	66.12%	66.67%
Pseudo-R <sup>2</sup>	0.06	0.083

Note: \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

significant (LR chi-square = 20.36 (8), p < 0.01). The value of Pseudo-R<sup>2</sup> was 8.3% and the percentage of cases correctly classified was 66.67%.

The level of information sharing was negatively related to SCM-IT Inhibitors and expansion of businesses in the study. SCM-IT inhibitors were statistically significant at the 5% level, that is the business units with high level of SCM-IT inhibitors were less likely (OR = 0.476) to have a high level of information sharing. Also, businesses with only local expansion were less likely (0.485) to have a high level of information sharing in the supply chain.

### Results of logistic regression models about information quality

Models of logistic regression, when information quality is a dependent variable are shown in Table 2.

The results of model 1 indicated that the model was statistically significant (LR chi<sup>2</sup> = 30.44 (3), p < 0.01). The value of Pseudo-R<sup>2</sup> was 12% and the percentage of cases correctly classified was 69.95%. Results of model 2 indicate that the level of information quality was positively related to inter-organizational relationships at 5% level and negatively

Table 2. Results of binary logistic regression for information quality (OR)

Independent variable	Model 1	Model 2	Model 3
Inter-organizational relationships	2.622**	3.061**	2.898**
Top Management support	0.721	0.602	0.559
SCM-IT Inhibitors	0.230***	0.241***	0.264***
Service sector		1.259	1.269
Number of Employees (> 10)		2.216	2.195
Local business		0.403**	0.446**
Experience in years (> 15)		0.759	0.759
Retailer		1.654	1.540
Information sharing			2.149**
Constant	1.381	1.157	1.002
LR chi-square (df)	30.44 (3)	41.67 (8)	46.39 (9)
% correctly classified	69.95%	75.96%	71.04%
Pseudo-R <sup>2</sup>	0.1202	0.165	0.1832

Note: \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

related to SCM-IT Inhibitors at 1% level. These findings indicate that business with a high level of inter-organizational relationships, such as trust, commitment and shared vision between supply chain partners were more likely (OR = 2.622) to have a high level of information quality in the supply chain, whereas business units with high level of SCM-IT inhibitors were less likely (OR = 0.23) to have a high level of information quality.

Results of logistic regression 2 indicated that the model was statistically significant (LR chi<sup>2</sup> = 41.67 (3), p < 0.01). The value of Pseudo-R<sup>2</sup> was 16.5% and the percentage of cases correctly classified was 75.96%. The level of information quality was positively related to inter-organizational relationships and negatively related to SCM-IT Inhibitors and business expansion. These findings indicate that business with a high level of inter-organizational relationships, such as trust, commitment and shared vision between supply chain partners were more likely (OR = 3.06) to have a high level of information quality in the supply chain at the level 5%. SCM-IT inhibitors were statistically significant at the 1% level, indicating that business units with high level of SCM-IT inhibitors were less likely (OR = 0.241) to have a high level of information quality. Business units with local expansion were less likely (0.403) to share information with a high level of quality in the supply chain.

Results of logistic regression 3 indicated that the model was statistically significant (LR chi<sup>2</sup> = 46.39 (3), p < 0.01). The value of Pseudo-R<sup>2</sup> was 18.32% and the percentage of cases correctly classified was 71.04%. The level of information quality was positively related to inter-organizational relationships, and the level of information sharing in the supply chain. The level of information quality was negatively related to SCM-IT Inhibitors and business expansion. These findings indicate that business with a high level of inter-organizational relationships and information sharing were more likely to have a high level of information quality in the supply chain at the level 5%, whereas businesses with high

level of SCM-IT inhibitors and the local expansion were less likely to have a high level of information quality.

#### IV. Conclusions

The rapid growth of Information Technology in Supply Chain Management is playing a key role in optimizing decisions in supply chain network in order to increase the level of customer service, to reduce the supply chain costs, to reduce risks, to increase the organizational competitiveness, and to reduce the inventory. IT in SCM is very useful for achieving information sharing throughout the supply chain. The goal of this study was to identify the factors that influence the level of information sharing and information quality in SCM in Vlore, Albania.

The results of descriptive analysis indicated that 83% of the businesses in the sample are retailers and 58% of them are local businesses. The most used IT tools are: e-mail (47%), website (42%) and CRM (15%).

The results of the logistic regression models for information sharing indicated that the SCM-IT inhibitors and local expansion of business negatively influence the level of information sharing in SCM, that is, business units that have faced problems during the usage of IT in SCM.

The results of the binary logistic regression models for information quality indicated that the level of information quality was positively related to inter-organizational relationships and information sharing in the supply chain, and negatively related to SCM-IT inhibitors and local expansion. These findings indicate that business units with high level of inter-organizational relationships and information sharing were more likely to have a high level of information quality in the supply chain, whereas business units that have faced problems during the usage of IT and SCM and those with local expansion were less likely to have high level of information quality.

The findings of this study provide useful information about business units in the study. The identification of the factors that statistically influence the level of information sharing and information quality in supply chain(s) can help the top managers and IT specialists to improve the overall performance of their company and their supply chain (s).

In this study there are some limitations. Firstly, the study sample includes several industries. Industrial composition in the sample may indicate the presence of performance variability between industries. Secondly, other factors such as security, trust, culture, information, etc., can influence the level of information sharing and information quality. Thirdly, the data for the study consisted of responses from single respondents in a business unit. Finally, the factors of this study do not consider the future potential value in information sharing and information quality.

In future research, a longitudinal research can be developed to consider the future potential value in information sharing and information quality. The contextual factors like type of industry, supply chain length and type of supply chain that can influence the level of information sharing and information quality can be studied in the future.

#### References

- i. Lau J. S. K., (2007), "Information Sharing in Supply Chains: Improving the Performance of Collaboration", Erich Schmidt Verlag GmbH & Co K.
- ii. Prashant R.Nair, Venkitaswamy Raju, Anbudayashankar S. P. (2009), "Overview of Information Technology tools for Supply Chain Management", CSI Communications, Computer Society of India (CSI), Volume 33, Issue 9, p.20-27.
- iii. Fu, Q., Zhu, K., (2010), "Endogenous information acquisition in supply chain management", *European Journal of Operational Research* 201, 454-462
- iv. Tatoglu, E., Bayraktar, E., Golgeci, I., Koh, S. L., Demirbag, M., & Zaim, S. (2015), "How do supply chain management and information systems practices influence operational performance? Evidence from emerging country SMEs", *International Journal of Logistics Research and Applications, A Leading Journal of Supply Chain Management*, 19(3), 181-199. DOI: 10.1080/13675567.2015.1065802
- v. Bayraktar, E., Demirbag, M., Lenny Koh, S.C., Tatoglu, E., Zam, H., (2009). "A causal analysis of the impact of information systems and supply chain management practices on operational performance: Evidence from manufacturing SMEs in Turkey", *Int. J. production Economics* 122, 133-149.
- vi. Spaho A. (2011), "Determinants of Information Sharing in Supply Chain among Manufacturing and Trading companies in Albania:A Discriminant Analysis", *Euroeconomica*, ISSN: 1582-8859 Issue 3(29)/201, pp.75-85.
- vii. Kumar R., Singh R. K., & Shankar R. (2016), "Study on collaboration and information sharing practices for SCM in Indian SMEs", *International Journal of Business Information Systems*, 22(4), 455-475.
- viii. Omar R., Ramayah T., Lo M-C., Sang T. Y. and Siron R., (2010), "Information sharing, information quality and usage of information technology (IT) tools in Malaysian organizations", *African Journal of Business Management*, vol. 4(12), pp. 2486-2499.
- ix. Li S., Ragu-Nathan B, Ragu-Nathan TS and Rao SS (2004). "The impact of supply chain management practices on competitive advantage and organizational performance", *Omega International Journal of Management Science*, vol. 34: pp.107-124.
- x. Rabren J (2010), "Technology, Integration and Data Drive Supply Chain Visibility. *Material Handling Management*", Retrieved Business Source Complete database, vol. 65(3), pp. 42.
- xi. Miller H (2005), "Information quality and market share in electronic commerce", *Journal of Services Marketing*, vol. 19(2), pp. 93-102.
- xii. Raghunathan S (1999), "Impact of information quality and decision-maker quality on decision quality: a theoretical model and simulation analysis", *Decision Support Systems*, vol. 26, pp. 275-286.

xiii. Monczka RM, Petersen KJ, Handfield RB and Ragatz GL (1998), "Success factors in strategic supplier alliances: The buying company perspective", *Decision Sciences*, vol. 29(3), pp.553-577.

xiv. Forslund, H. and Jonsson, P. (2007), "The impact of forecast information quality on supply chain performance", *International Journal of Operations and Production Management*, vol. 27(1), pp. 90-107.

xv. Moberg CR, Cutler BD and Gross A, Speh TW (2002), "Identifying antecedents of information exchange within supply chains", *International Journal of Physical Distribution and Logistics Management*, vol. 32(9), pp.755-770.

xvi. S.Li and B. Lin (2006), "Assessing information sharing and information quality in supply chain management", *Decision Support Systems*, vol. 42, pp.1641-1656.

xvii. Marinagi, P. Trivellas and P. Reklitis (2015), "Information Quality and Supply Chain Performance: The Mediating Role of Information Sharing", *Procedia Social a Behavioral Sciences*, vol. 175, pp.473-479.

xviii. Hair J. F., Black W. C., Babin B. J. and Anderson R. E. (2009), "Multivariate Data Analysis", 7th ed. .

xix. Hosmer D.W., Lemeshow S. and Sturdivant R. X. (2013), "Applied Logistic Regression", 3rd ed., Wiley Publication

## Appendix

Figure 1. IT tools used to share information with partners in their supply chain

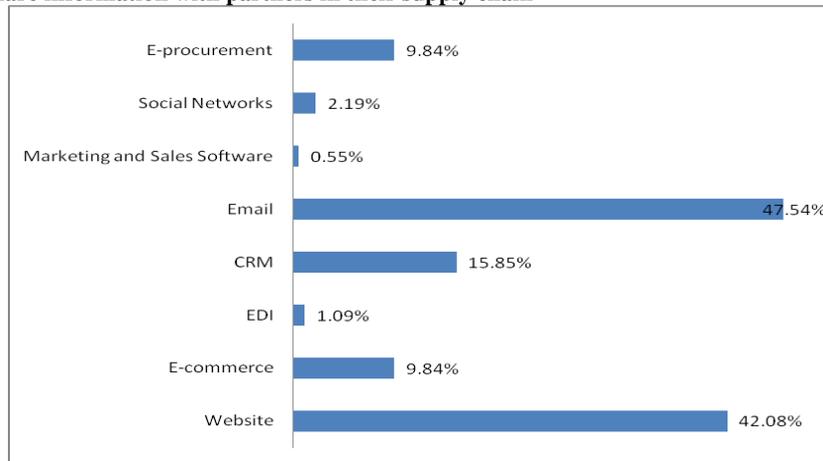


Table 1. SCM-IT inhibitors

SCM-IT inhibitors	Not at all	Rarely	Occasionally	Frequently	Very frequently
Resistance to change from employees	46.99%	20.22%	19.67%	10.38%	2.73%
Resources shortages	13.66%	22.40%	27.32%	25.68%	10.93%
Skills shortages	33.33%	24.59%	20.22%	17.49%	4.37%
Insufficient vendor support	32.24%	20.22%	21.86%	16.39%	9.29%
Integration with existing information technologies	24.59%	26.78%	21.31%	17.49%	9.84%
Integration with supplier's information technologies	9.84%	22.95%	32.79%	24.59%	9.84%
Integration with customer's information technologies	25.68%	25.68%	19.13%	19.13%	10.38%

Table 2. Descriptive statistics for all items

Items	Mean	Standard deviation	Skewness	Kurtosis
<b>Information sharing [xvi]</b>				
We inform trading partners in advance of changing needs.	3.902	0.852	-0.886	1.247
Our trading partners share proprietary information with us.	3.803	0.848	-0.977	1.283
Our trading partners share business knowledge of core business processes with us.	2.918	1.124	0.069	-0.700
<b>Information quality [xvi]</b>				
Information exchange between our trading partners and us is timely.	3.060	0.909	0.014	-0.526
Information exchange between our trading partners and us is accurate.	4.066	0.887	-0.654	-0.135
Information exchange between our trading partners and us is complete.	3.874	0.967	-0.335	-0.805
Information exchange between our trading partners and us is adequate.	3.874	1.054	-0.401	-0.898
Information exchange between our trading partners and us is reliable.	3.727	1.095	-0.428	-0.641
<b>Inter-organizational relationships [xvi]</b>				
Our trading partners have been open and honest in dealing with us.	3.585	1.178	-0.348	-0.986
Our trading partners respect the confidentiality of the information they receive from	3.519	1.068	-0.939	0.403

us.				
Our transactions with trading partners do not have to be closely supervised	3.393	1.138	-0.457	-0.803
Our trading partners have made sacrifices for us in the past.	3.066	0.964	-0.021	0.172
We have invested a lot of effort in our relationship with trading partners.	3.355	1.148	-0.179	-0.881
Our trading partners abide by agreements very well.	3.536	1.133	-0.869	0.206
We and our trading partners always try to keep each others' promises.	3.721	1.086	-0.804	0.102
We and our trading partners have a similar understanding about the aims and objectives of the supply chain.	3.333	1.233	-0.375	-0.831
We and our trading partners have a similar understanding about the importance of collaboration across the supply chain.	3.678	1.191	-0.636	-0.753
We and our trading partners have a similar understanding about the importance of improvements that benefit the supply chain as a whole.	3.339	1.243	-0.460	-0.741
<b>Top management support [xvi]</b>				
Top management considers the relationship between us and our trading partners to be important.	3.710	1.021	-0.490	-0.604
Top management supports SCM with the resources we need.	3.678	0.994	-0.400	-0.858
Top management regards SCM as a high priority item.	3.672	1.070	-0.484	-0.607
Top management participates in SCM and its optimization.	3.628	1.131	-0.427	-0.826
<b>SCM-IT inhibitors [iv]</b>				
Resistance to change from employees	2.016	1.155	0.811	-0.450
Resources shortages	2.978	1.213	-0.051	-0.938
Skills shortages	2.350	1.231	0.450	-0.966
Insufficient vendor support	2.503	1.338	0.384	-1.069
Integration with existing information technologies	2.612	1.295	0.340	-1.002
Integration with supplier's information technologies	3.016	1.126	-0.032	-0.711
Integration with customer's information technologies	2.628	1.328	0.311	-1.106

Note: Items are measured based on a 5 point Likert scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree. For SCM-IT inhibitors the five-point scales range from 1 = 'not at all' to 5 = 'very frequently'.

**Table 3.** Results of exploratory factor analysis

Items/Factors (variance explained)	Factor loadings	CITC	Cronbach's Alpha
<b>Factor analysis for information sharing and information quality</b>			
<b>Information sharing (25.04%)</b>			
We inform trading partners in advance of changing needs.	0.8098	0.5496	0.8620
Our trading partners share proprietary information with us.	0.8775	0.5747	0.8591
Our trading partners share business knowledge of core business processes with us.	0.6454	0.5356	0.8754
<b>Information quality (47.18%)</b>			
Information exchange between our trading partners and us is timely.	0.7799	0.7945	0.8317
Information exchange between our trading partners and us is accurate.	0.8647	0.8339	0.8264
Information exchange between our trading partners and us is complete.	0.8937	0.8553	0.8217
Information exchange between our trading partners and us is adequate.	0.8727	0.7536	0.8387
Information exchange between our trading partners and us is reliable.	0.8806	0.8175	0.8280
<b>Factor analysis for factors influencing information sharing and quality</b>			
<b>Inter-organizational relationships (34.48%)</b>			
Our trading partners have been open and honest in dealing with us.	0.7323	0.7469	0.9425
Our trading partners respect the confidentiality of the information they receive from us.	0.7771	0.7675	0.9422
Our transactions with trading partners do not have to be closely supervised	0.8806	0.6877	0.9434
Our trading partners have made sacrifices for us in the past.	0.8523	0.5143	0.9458
We have invested a lot of effort in our relationship with trading partners.	0.8460	0.7929	0.9417
Our trading partners abide by agreements very well.	0.8252	0.7742	0.9420
We and our trading partners always try to keep each others' promises.	0.8118	0.8298	0.9412
We and our trading partners have a similar understanding about the aims and objectives of the supply chain.	0.8108	0.8168	0.9412
We and our trading partners have a similar understanding about the importance of collaboration across the supply chain.	0.8152	0.8151	0.9413
We and our trading partners have a similar understanding about the importance of improvements that benefit the supply chain as a whole.	0.7566	0.8155	0.9412
<b>Top management support (20.09%)</b>			
Top management considers the relationship between us and our trading partners to be important.	0.8203	0.7312	0.9428
Top management supports SCM with the resources we need.	0.8281	0.7534	0.9425

Top management regards SCM as a high priority item.	0.7853	0.7547	0.9424
Top management participates in SCM and its optimization.	0.8207	0.7451	0.9425
<b>SCM-IT inhibitors (25.13%)</b>			
Resistance to change from employees	0.7997	0.5569	0.9455
Resources shortages	0.6851	0.2894	0.9500
Skills shortages	0.8465	0.6880	0.9435
Insufficient vendor support	0.8713	0.7257	0.9430
Integration with existing information technologies	0.8965	0.6757	0.9438
Integration with supplier's information technologies	0.8710	0.4618	0.9469
Integration with customer's information technologies	0.8988	0.6646	0.9441

**Table 4. Correlation Matrix**

	1	2	3	4	5	6	7	8	9	10
1. Information sharing	1.000									
2. Information quality	0.275	1.000								
3. Inter-organizational relationships	0.182	0.242	1.000							
4. Top Management support	0.215	0.174	0.634	1.000						
5. SCM-IT Inhibitors	-0.236	-0.363	-0.243	-0.338	1.000					
6. Service sector	-0.013	-0.016	0.023	0.077	0.056	1.000				
7. Number of employees	0.151	0.255	0.207	0.211	-0.292	-0.219	1.000			
8. Local business	-0.169	-0.189	0.015	-0.111	0.069	0.186	-0.247	1.000		
9. Experience in years	0.070	0.051	0.166	0.253	-0.129	-0.027	0.227	-0.077	1.000	
10. Retailer	-0.011	-0.021	-0.136	-0.164	0.099	0.379	-0.156	0.254	-0.068	1.000

Note: all coefficients are statistically significant at the level 5%.