

Supply chain performance: the role of regional markets

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ABSTRACT

This paper investigates the role of exports in the regional markets on the performance of supply chain. The study first determines critical variables affecting exports for entering into the regional markets and then measures the effects of these variables on the effectiveness of supply chain performance. The study uses two questionnaires, one for measuring the effects of various factors on export development and the other for measuring supply chain performance in Likert scale. Cronbach alpha for the mentioned questionnaires were calculated as 0.84 and 0.78, respectively. The population of the survey includes all small and medium enterprises active in city of Tehran, Iran and the study selects a sample of 250 people as a sample size. Using factor analysis, the study has determined seven factors including product development, government support, strategic orientation, customer satisfaction, competitive pressures, organizational capability and distribution strategies for entry into regional markets. In addition, the implementation of structural equation modeling has disclosed that product development and distribution strategies maintained the highest impact on export activities.

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1. Introduction

During the past few decades, many countries have boosted their economy by concentrating on development of new products to supply in international market. There are always different challenges on supplying products in other countries such as competition with existing domestic competitors. Supply chain management is one of the most important issues for development of market in other countries. Haluk Köksal and Özgül (2010) determined the export competitive advantage differences between high- and low-performing firms in Turkey by analyzing the firms' export resources, export skills, and export competitive advantages to detect the discrimination effects of each variable. They reported that the brand image, product quality, and cost of goods sold in the export markets were the most important competitive advantage factors leading to success in the export markets. In addition, in their study, the ability to understand consumers' requirements, and developing strong relationships with consumers in the marketplace were also important skills associated with success in the export markets.

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During the past few years, there have been some efforts on expediting export development. Pilevari (2009), for instance, presented a model of agility in supply chain based expert systems. Vahid et al. (2013) evaluated the relationship between competitive advantage and export performance in a case study of Iranian firms exporting biotech products. Pilevari (2009) presented a model of agility in supply chain based expert systems.

2. The proposed study

This paper investigates the role of exports in the regional markets on the performance of supply chain. In other words, the study first determines critical variables affecting exports for entering the regional markets and then measures the effects of these variables on the effectiveness of supply chain performance. The study uses two questionnaires, one for measuring the effects of various factors on export development and the other for measuring supply chain performance in Likert scale. Table 1 demonstrates the factors along with the sources.

Table 1

The summary of factors influencing development of supply chain effectiveness and export development

Variable	Source
Research and development	Decision maker
Innovation in production	Rettie et al., 2002
Product life cycle	Rettie et al., 2002; Booth, 1996
Application of new technologies	Pavic et al., 2007
Product quality	Zou & Stan, 1998; Naylor et al., 1999; Turkett, 2001
Conformity with the target market	Zou & Stan, 1998; Quinn, 1997
Product diversification	Zou & Stan, 1998
Packaging	Salavou & Halikias, 2009
Tariffs	Haluk Köksal & Özgül, 2010
Providing export subsidies to manufacturers	Progoulaki & Theotokas, 2010
Granting tax exemptions	Baffour Awuah & Abraha Gebrekidan, 2008
State support of industry	Čater & Čater, 2009
Foreign Policy	Barney, 2001; Vonderembse & Tracey, 1999
Participation in International Exhibitions	Barney, 2001; Lkhagvasuren, 2014
Strategic integration	Christopher & Towill, 2000, 2002
Integrated Marketing Communications	Decision maker
Pricing Strategy	Salavou & Halikias, 2009
After sales services	Barney, 2001
Customer relationship management channels	Baffour Awuah & Abraha Gebrekidan, 2008
Market segmentation	Progoulaki & Theotokas, 2010
International competition	Salavou & Halikias, 2009
Number of competitors	Pavic et al., 2007
Market share	Fynes et al., 2008; Vonderembse et al., 2006
Marketing research	Kannan & Tan, 2005
Management commitment for export	Lambert & Cooper, 2000; Pettersson et al., 2002; Pilevari, 2009
Human resources management	Barney, 2001
Having foreign sales units	Zou & Stan, 1998; Chetty & Campbell-Hunt, 2003
Property distribution channel	Decision maker
E-Commerce	Vlahvei et al., 2013; Vahid, 2013

Cronbach alpha for the mentioned questionnaires were calculated as 0.84 and 0.78, respectively. The population of the survey includes all small and medium enterprises active in city of Tehran, Iran and the study selects a sample of 250 people as a sample size. To find out more about the factors associated with development of supply chain and export we have reviewed existing literature as well as interviewing some experts. Fig. 1 demonstrates personal characteristics of the participants.

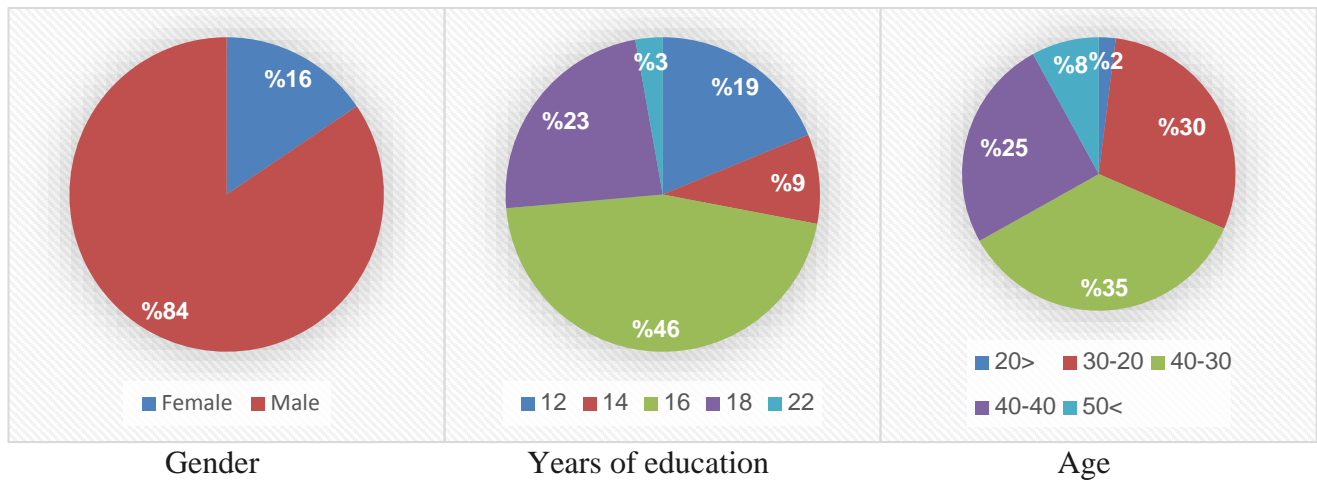


Fig. 1. Personal characteristics of the participants

As we can observe from the results of Fig. 1, 84% of the participants were male, 80% of them maintained some university education and they were mostly middle aged people.

Table 2

The summary of the results of Factor analysis

Factor	Eigenvalue			Extracted before rotation			Extracted after rotation		
	Variance	%	Accumulated	Variance	%	Accumulated	Variance	%	Accumulated
1	7.198	19.453	19.453	7.198	19.453	19.453	4.242	11.464	11.464
2	3.793	10.252	29.705	3.793	10.252	29.705	3.174	8.577	20.041
3	2.719	7.349	37.054	2.719	7.349	37.054	2.52	6.81	26.852
4	1.815	4.905	41.959	1.815	4.905	41.959	2.298	6.211	33.063
5	1.643	4.44	46.399	1.643	4.44	46.399	1.945	5.256	38.319
6	1.427	3.857	50.256	1.427	3.857	50.256	1.847	4.992	43.311
7	1.283	3.467	53.722	1.283	3.467	53.722	1.817	4.911	48.223
8	1.204	3.254	56.977	1.204	3.254	56.977	1.815	4.906	53.129
9	1.127	3.047	60.024	1.127	3.047	60.024	1.792	4.843	57.971
10	1.057	2.858	62.882	1.057	2.858	62.882	1.597	4.315	62.287
11	1.017	2.75	65.631	1.017	2.75	65.631	1.238	3.345	65.631
12	0.899	2.429	68.061						
13	0.829	2.24	70.301						
14	0.811	2.192	72.492						
15	0.781	2.11	74.602						
16	0.71	1.92	76.522						
17	0.678	1.834	78.355						
18	0.656	1.772	80.127						
19	0.638	1.726	81.853						
20	0.631	1.707	83.559						
21	0.549	1.484	85.044						
22	0.541	1.463	86.506						
23	0.513	1.387	87.894						
24	0.501	1.355	89.248						
25	0.486	1.312	90.561						
26	0.44	1.19	91.751						
27	0.418	1.13	92.881						
28	0.392	1.059	93.94						
29	0.383	1.036	94.976						
30	0.365	0.988	95.963						
31	0.347	0.937	96.901						
32	0.317	0.856	97.757						
33	0.254	0.688	98.445						
34	0.227	0.614	99.059						
35	0.168	0.453	99.512						
36	0.101	0.272	99.784						
37	0.08	0.216	100						

The proposed study has applied factor analysis and KMO test, which represents nearly 79% of the changes. Table 2 shows details of the preliminary results of factor analysis. In addition, Fig. 2 shows the results of Scree plot.

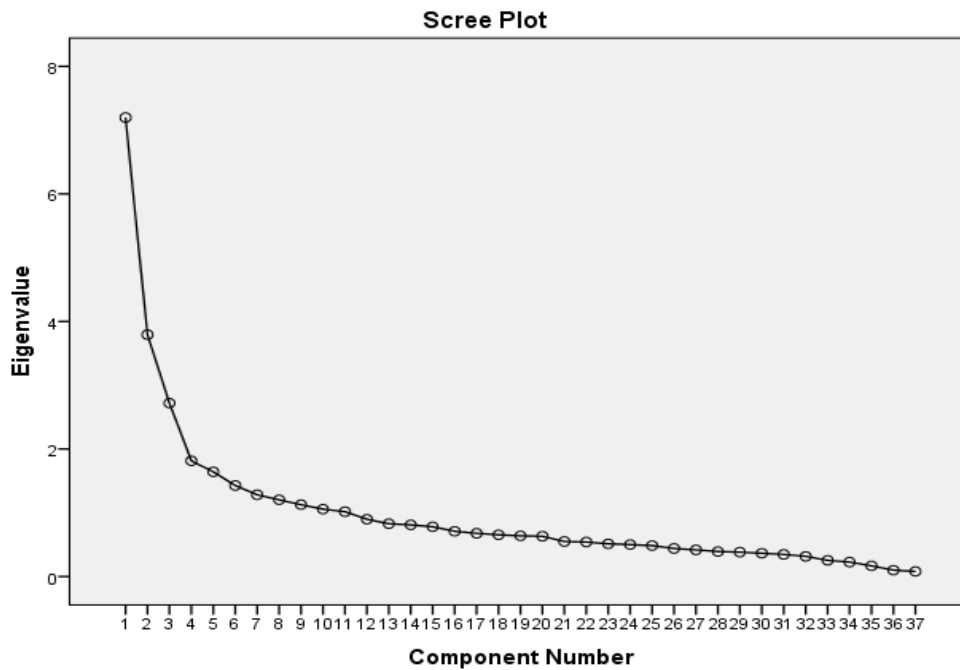


Fig. 2. The results of Scree plot

According to the Table 2 and Fig. 2, there are seven factors including product development, government support, strategic orientation, customer satisfaction, competitive pressures, organizational capability and distribution strategies for entry into regional markets. Table 3 presents details of Pearson correlation test between supply chain management and the seven factors.

Table 3

The summary of factors Pearson correlation test between supply chain management and export development

Variable	Pearson correlation ratio	Sig.
Product development	0.58	P<0.01
Government support	0.11	P<0.01
Strategic orientation	0.26	P<0.01
Customer satisfaction	0.29	P<0.01
Competitive pressures	0.40	P<0.01
Organizational capability	0.53	P<0.01
Distribution strategies	0.49	P<0.01

According to the results of Table 3, product development maintains the highest impact on development of regional market followed by organizational capabilities and distribution strategies. In this survey, we have built a model to provide more investigation between the supply chain components and export development in regional market using structural equation modeling (SEM) and Fig. 3 demonstrates the results of our survey. In addition, Table 4 shows details of statistical observations on SEM implementation.

Table 4

The summary of statistics on SEM implementation

Chi-square	df	Chi-Square/df	P-value	RMSEA	GFI	PGFI	CFI	NFI
1098.07	474	2.31	P<0.001	0.076	0.92	0.78	0.96	0.93

The results of Table 4 indicate that all statistics were within acceptable levels and we can therefore examine the effects of six variables. Table 5 presents the summary of SEM implementation.

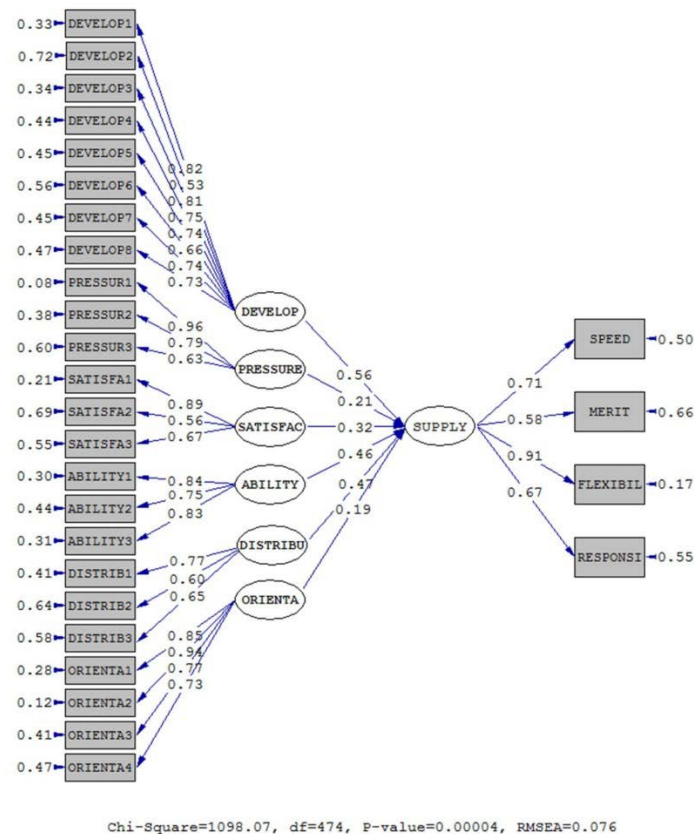


Fig. 3. The results of standard coefficients on SEM implementation

3. Discussion and conclusion

According to the results of Table 5, product development influences the most on SCM effectiveness followed by distribution channels, organizational capabilities, customer satisfaction, competitive pressure and strategic orientation.

Table 5

The summary of the results of SEM implementation

Path	Standard coefficient	t-value	Result
Product development → SCM effectiveness	0.56**	7.41	Confirmed
Competitive pressures → SCM effectiveness	0.21**	2.96	Confirmed
Customer satisfaction → SCM effectiveness	0.32**	3.43	Confirmed
Organizational capabilities → SCM effectiveness	0.46**	5.61	Confirmed
Distribution channels → SCM effectiveness	0.47**	5.62	Confirmed
Strategic orientation → SCM effectiveness	0.19**	2.88	Confirmed

** P < 0.01

In general, the components of the supply chain must have full information about the final product and the process of production and distribution to increase the efficiency of the value chain and supply chain performance with prevailing market conditions and the orientation the market. There is no doubt that customer satisfaction occurs only when there are some good cooperation among the members of supply chain. On the other hand, customer satisfaction can yield long-term influence on supply chain efficiency and effectiveness of its components. Overall, customer satisfaction and supply chain performance relationship is bidirectional. In our survey, different components of organizational capabilities, market research, management's commitment to exporting, human resources, positively influence on supply chain performance.

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