

Uncertain Supply Chain Management

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Identification and ranking the factors influencing the performance of the incentive policies of free trade zones

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ABSTRACT

Free trade zones are important regions for development of business activities and detecting important factors for development of these regions plays essential role for development of economy. This paper presents an empirical investigation to determine the factors influencing the performance of the incentive policies of free trade zones in Iran. The study designs a questionnaire consists of 34 questions. Cronbach alpha is equal to 0.809, which is well above the minimum acceptable level. In addition, Bartlett's Test of Sphericity yields a Chi-Square value of 2392.31 with Sig. = 0.000. Using principal component analysis with rotation, the study has detected six important factors influencing on development of free trade zones including government support, financial capability, development strategy, product competition, infrastructure and consultation services.

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1. Introduction

Free trade zones (Urquidi, 1993) are important regions for development of business activities (Facchini & Willmann, 1999) and detecting important factors for development of these regions plays essential role for development of economy (Krugman, 1991; Miyagiwa, 1993; Rasiah, 1993; Zacharias Ma, 2015). There have been several studies on detecting barriers on development of free zones in the world. Azad and Rostamnya (2012a), for instance, studied the effect of information technology (IT) on development of businesses located mainly on free zones or in the borders of countries using analytical hierarchy process. The results of their survey have indicated that management was the most important factor, followed by cultural and social items. In addition, the other factors including technical, investment and organization items were in lower degree of importance. Azad and Rostamnya (2012b) investigated the effect of IT on developing businesses located mainly on free zones or in the borders of countries. They grouped factors in five different items including management, social and cultural, organizational, technical and investment factors. Tajzadeh-Namin (2012) presented a study for ranking various barriers on developing e-business in one of the Iranian free zones called Kish Island, which is

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located in south part of Iran and it is one of the most beautiful free zones of this country with tremendous opportunities for tourism industry. They gathered important factors in five different groups of economic, social and cultural, political, technology and software packages. In each group, decision makers determined different influencing factors and reported that the lack of a good infrastructure (0.206), the lack of good culture among ordinary people to use e-businesses (0.205), the lack of good knowledge on internet services among ordinary people (0.204) were some of the most important factors preventing e-business in this region. Nikfarjam and Zarifi (2015) explored the effects of entrepreneurial marketing factors on SMEs. They determined five factors including innovative approach, flexible marketing, customer, product strategy and resources, which are influencing the most on entrepreneurial marketing factors. Jafari (2013) aimed at developing a framework for the assessment of the performance of Iranian free trade zones by applying EFQM and VIKORE methods. They reported that the Strategy and policy had the highest weight. Feltenstein and Plassmann (2008) analyzed trade reform among the ASEAN countries. The standard method to prevent complete specialization in traded commodities was to distinguish goods both by physical type and place of origin by developing a computational approach in the context of a non-Armington dynamic general equilibrium model. They reported that trade liberalization was generally welfare improving for the ASEAN countries.

2. The proposed study

Free trade zones are important regions for development of business activities and detecting important factors for development of these regions plays essential role for development of economy. This paper presents an empirical investigation to determine the factors influencing the performance of the incentive polities of free trade zones in Iran. The study designs a questionnaire consists of 34 questions. Cronbach alpha is equal to 0.809, which is well above the minimum acceptable level. In addition, Bartlett's Test of Sphericity yields a Chi-Square value of 2392.31 with Sig. = 0.000. Table 1 demonstrates the summary of some basic statistics associated with the data. As we can observe from the results of Table 1, all data are within desirable levels and we can therefore proceed the next step. Table 2 shows the results of Total variance for all components. Moreover Fig. 1 shows the results of Scree plot.

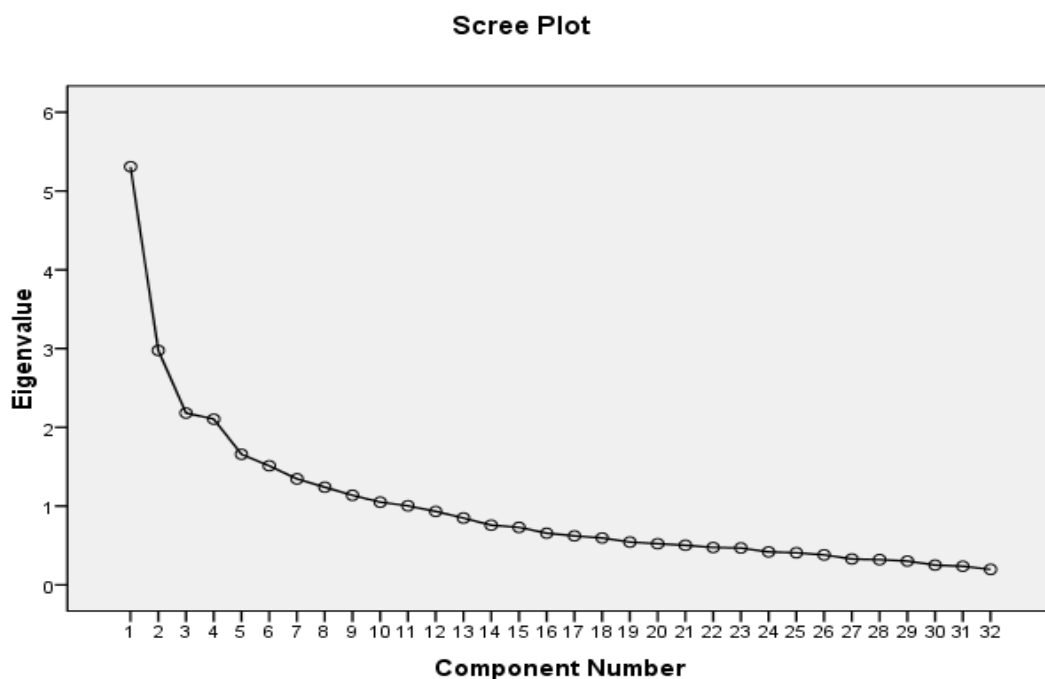


Fig. 1. The results of Scree plot

Table 1
The summary of some basic statistics

Variable	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Development of small and medium enterprises	-0.509	0.162	-0.462	0.322
Created supportive services	-0.464	0.162	-0.493	0.322
Disputes	-0.338	0.162	-0.64	0.322
Improve product competitive advantage	-0.378	0.162	-0.385	0.322
Establishment facilities	-0.217	0.162	-1.084	0.322
Helping local exhibition	-0.619	0.162	-0.609	0.322
R & D investment	-0.24	0.162	-1.383	0.322
Administrative procedures to facilitate exports	-0.204	0.162	-1.185	0.322
Providing assistance to newly established	-0.784	0.162	0.286	0.322
Customs Exemptions	-0.538	0.162	-0.665	0.322
Currency supply	-0.695	0.162	0.287	0.322
Subsidies on inputs	-0.654	0.162	0.01	0.322
Promotion of products in foreign countries	-0.044	0.162	-0.869	0.322
Direct and strategic advice to help	-0.597	0.162	-0.027	0.322
Participation in international exhibitions	-0.362	0.162	-0.701	0.322
Technical assistance program	-0.752	0.162	0.024	0.322
Trade negotiations	-0.465	0.162	-0.064	0.322
Provide Discounts	0.052	0.162	-0.904	0.322
Creating databases	-0.811	0.162	0.139	0.322
Insurance export	-0.421	0.162	-0.567	0.322
Support the development of industry	-0.291	0.162	0.541	0.322
Special Deals	-0.528	0.162	-0.948	0.322
Development of export infrastructure	-0.5	0.162	1.12	0.322
Training courses	-0.435	0.162	0.606	0.322
Package Development	0.022	0.162	-1.129	0.322
Granting preferential credit rates	-0.199	0.162	-0.914	0.322
Tariff protection policy	-0.711	0.162	-0.004	0.322
Export guarantee	-0.369	0.162	-0.566	0.322
Globalization	-0.452	0.162	0.006	0.322
International advertising programs	-0.441	0.162	-0.818	0.322
Sending trade delegations	-0.596	0.162	-0.282	0.322
Marketing donations	-0.844	0.162	0.538	0.322
Repayment of customs duties	-0.768	0.162	0.225	0.322
Export income tax cuts	-0.758	0.162	0.194	0.322

Table 2

The summary of total variance

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.309	16.591	16.591	5.309	16.591	16.591	3.558	11.118	11.118
2	2.976	9.302	25.893	2.976	9.302	25.893	2.436	7.612	18.731
3	2.181	6.816	32.709	2.181	6.816	32.709	2.286	7.145	25.876
4	2.104	6.574	39.283	2.104	6.574	39.283	2.003	6.26	32.135
5	1.657	5.179	44.462	1.657	5.179	44.462	1.932	6.037	38.173
6	1.511	4.722	49.184	1.511	4.722	49.184	1.9	5.938	44.111
7	1.345	4.204	53.387	1.345	4.204	53.387	1.743	5.447	49.558
8	1.24	3.875	57.262	1.24	3.875	57.262	1.549	4.84	54.399
9	1.137	3.552	60.815	1.137	3.552	60.815	1.466	4.581	58.98
10	1.049	3.279	64.094	1.049	3.279	64.094	1.339	4.183	63.163
11	1.004	3.136	67.23	1.004	3.136	67.23	1.301	4.067	67.23
12	0.932	2.912	70.142						
13	0.848	2.65	72.792						
14	0.757	2.367	75.159						
15	0.73	2.281	77.44						
16	0.656	2.049	79.488						
17	0.621	1.942	81.43						
18	0.595	1.86	83.29						
19	0.543	1.696	84.985						
20	0.522	1.631	86.616						
21	0.502	1.569	88.186						
22	0.474	1.483	89.668						
23	0.467	1.46	91.128						
24	0.418	1.307	92.436						
25	0.407	1.273	93.709						
26	0.38	1.189	94.897						
27	0.329	1.027	95.924						
28	0.32	1	96.924						
29	0.302	0.943	97.867						
30	0.251	0.785	98.652						
31	0.236	0.737	99.389						
32	0.196	0.611	100						

As we can observe from the results of Scree plot, there are six items, which influence the most on the development of free zone regions. Table 3 also presents the results of principle component analysis after rotation.

Table 3
The summary of principle component analysis after rotation

	1	2	3	4	5	6	7	8	9	10	11
Created supportive services	0.856										
Insurance export	0.852										
Customs Exemptions	0.821										
Disputes	0.807										
Subsidies on inputs		0.795									
Export income tax cuts		0.755									
Repayment of customs duties		0.653									
Currency supply		0.527									0.414
International advertising			0.745								
Development of small and medium enterprises			0.687								
Participation in international exhibitions			0.653								
Tariff protection policy			0.483		0.384						
Promotion of products in foreign countries				0.789							
Improve product competitive advantage				0.626							
Provide Discounts			0.362	0.55	0.331						
Helping local exhibition				0.458	0.405						0.359
Trade negotiations		0.336			0.707						
Sending trade delegations					0.691						
Development of export infrastructure						0.767					
Support the development of industry organizations						0.725					
Technical assistance						0.645					
Training courses						0.46		0.419			
Establishment facilities							0.811				
Administrative procedures to facilitate exports							0.755				
Marketing donations								0.68			
Creating databases		0.332						0.475	0.384		
Direct and strategic advice to help		0.355						0.47		0.392	
Special Deals									0.846		
R & D investment							0.354		0.451		
Export guarantee										0.667	
Providing assistance to newly established										0.542	
Granting preferential credit											0.733

3. Discussion and conclusion

According to the results of principal component analysis with rotation, the study has detected four important factors influencing the most on development of free trade zones including government support, financial capability, development strategy and consultation helps. The first and the most important factor in terms of factor loading is associated with government support and it includes four sub-components including Created supportive services, Insurance export, Customs exemptions and Disputes with factor loadings of 0.856, 0.852, 0.821 and 0.807, respectively. The second factor is related to financial support and it includes four sub components including Subsidies on inputs, Export

income tax cuts, Repayment of customs duties and Currency supply with factor loadings of 0.795, 0.755, 0.653 and 0.527 respectively. The third component is associated with development strategy with four components including International advertising programs, Development of small and medium enterprises, Participation in international exhibitions, and Tariff protection policy and the factor loadings of 0.745, 0.687, 0.653 and 0.483, respectively. The fourth factor, product competition, consists of four factors including Promotion of products in foreign countries, Improve product competitive advantage and Discounts and helping local exhibition with factor loadings of 0.789, 0.626, 0.55, 0.458, respectively. The fifth factor, infrastructure, also consists of Development of export infrastructure, Support the development of industry organizations and Technical assistance program and Training courses with factors loading of 0.767, 0.725, 0.645 and 0.46, respectively. Finally, the factor, consultation services, includes Creating databases, Direct and strategic advice to help and Marketing donations with factor loadings of 0.68, 0.475 and 0.47, respectively.

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