

An empirical investigation on factors influencing on exporting medicinal plants

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ABSTRACT

During the past few years, there have been growing interests on developing medicinal plant industry. This paper presents an empirical study on important factors influencing medicinal plant for developing exports in Iran. The proposed study of this paper designs a questionnaire and distributes it among 310 regular customers who are involved in this industry in city of Tehran, Iran. Cronbach alpha has been calculated as 0.802. In addition, Kaiser-Meyer-Olkin Measure of Sampling =KMO test was also computed and it was about 0.66, which is above the minimum acceptable limit of 0.5. The study uses Scree plot to determine important factors and there are eight factors including environmental issues, export supportive issues, potentials for export, business plan, export plan, structural barriers, competition capability and strategy.

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1. Introduction

Exports in Iran are made up of two parts: oil exports and non-oil exports and oil based products are functions of oil prices determined by global economy. Many people believe selling natural resources does not necessarily improve the economy of developing countries since this would become a barrier on having more innovative ideas. Therefore, many people believe that developing countries must concentrate on more knowledge based products and do not depend on their natural resources (Krugman, 1997).

Expectedly, the role of exports in economic performance of developing countries has become one of the most intensive areas of research in recent years. The major impetus for most studies on this relationship is the export-led growth (ELG) hypothesis, which interestingly represents a dominant explanation in this context. The ELG hypothesis states that the growth of exports has a favorable effect on economic growth. However, the empirical evidence on the causal relationship between exports and growth is mixed. In particular, available time series studies fail to provide uniform

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support for the ELG hypothesis while most cross-sectional studies provide empirical evidences in support of the hypothesis (Leonidou, 2004). Pinho and Martins (2010) identified some of the major barriers that may hinder potential exporters and non-exporters from exporting their products. They used both parametric and semi-parametric binary choice models to study the data to assess important barriers for SME's exports. They reported that lack of knowledge of potential markets, lack of qualified export personnel, lack of technical suitability, degree of competition in the sector, lack of financial assistance (governmental and financial institutions), and lack of qualified human resources were the main export barriers. As Panagariya et al. (1995) stated, we may learn from export attempts accomplished from other countries and build necessary infrastructures.

According to Kumar and Janagam (2011) significant amount of foreign exchange can be earned by exporting medicinal plants to other countries. For instance, in India there are 880 medicinal plants species involved in all India. The Ministry of Environment and Forests, Government of India, revealed that there were over 8000 species of medicinal plants grown in the country. About 70 percent of these plants could be detected in the tropical forest; spread across the Western and Eastern Ghats. Export marketing is an essential economic development tool, because marketing activities are usually detected with economics of abundance associated with the function of guiding production purposefully toward maximum consumer satisfaction and value for money. When a nation generates far above the subsistence requirements, it has the task of encouraging the consumption of the output of commodities and services from its economy across its national frontier. The essential role of optimizing economic growth process can therefore, be credited to export marketing and or marketing. This is because marketing was instrumental in laying the groundwork necessary for rapid development of most developed nations.

A medicinal plant is any kind of plant, which contains substance implemented for therapeutic purposes, or it is used for synthesis of useful drugs. Medicinal plant has created new dimension in the field of Agriculture since it can create value added products. The medicinal plant industry puts together different aspects of this multidisciplinary industry and its global interest (Kumar & Janagam, 2011). They play substantial role in providing primary health care services to rural people and serve as therapeutic agents as well as important raw materials for the manufacture of traditional and modern medicine. Substantial amount of foreign exchange can be earned by exporting medicinal plants to other countries. In this way, indigenous medicinal plants play significant role on an economy as well.

Julian and Ali (2009) examined the effect that different incentives to export have on the export marketing performance of Australian export market ventures and reported that Australian export market ventures would positively be influenced by the export incentive of the chance to diversify into new markets.

According to Babakhani and Haji (2011), exporting commodities and services play essential role on economy of developing countries. There are many countries in the world whose economy depends on exporting raw materials such as oil and gas. Many believe that countries cannot develop their economy as long as they rely on exporting one single group of raw materials. Therefore, there is a need to help other sectors of industries build good infrastructure for exporting diversified products. Babakhani and Haji (2011) performed an empirical analysis to determine the critical success factors on exporting different goods.

2. The proposed study

This paper presents a study to find important factors influencing on development of medical plant for developing exports. The study is performed among medical plants' producers and exporters in Iran. The sample size for the questionnaire has been determined as follows,

$$N = Z_{\alpha/2}^2 \frac{p \times q}{e^2}, \quad (1)$$

where N is the sample size, $p=1-q$ represents the probability, $z_{\alpha/2}$ is CDF of normal distribution and finally ε is the error term. For our study we assume $p=0.5$, $z_{\alpha/2}=1.96$ and $e=0.99$, the number of sample size is calculated as $N=310$. We have designed a questionnaire to verify the over performance of the questionnaire and Cronbach alpha was calculated as 0.802, which is well above the minimum acceptable limit. In addition, Kaiser-Meyer-Olkin Measure of Sampling =KMO test was also computed and it was about 0.66, which is above the minimum acceptable limit of 0.5. Table 1 demonstrates details of the questionnaire and some basic statistics. As we can observe from the results, there is no need to reduce any question from the survey.

Table 1

The results of some basic statistics

	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Weak transportation facilities	5.722	-.517	.138	-.564	.276
High value of price	4.240	-.357	.138	-.131	.276
Lack of reliable dealer	5.485	-.370	.138	-.581	.276
Embargo and political issues	5.262	-.119	.138	-.517	.276
Weak packaging	4.901	-.108	.138	-.604	.276
Government policy	5.301	-.120	.138	-.660	.276
Weak infrastructure in export	5.939	-.174	.138	-.781	.276
Weak management commitment	5.506	-.126	.138	-.850	.276
Devaluation on currency	5.703	-.187	.138	-.749	.276
Weak coordination among governmental organizations	4.982	-.101	.138	-.520	.276
Weak marketing	4.969	-.094	.138	-.568	.276
Weak information	5.536	-.081	.138	-.776	.276
Low quality	6.108	.007	.138	-.882	.276
Lack of sufficient attention to demand	6.123	.002	.138	-.932	.276
Lack of support from financial institutions	6.083	-.056	.138	-.887	.276
Lack of attention to cultural issues	6.332	.000	.138	-.909	.276
Inappropriate working areas	5.964	.059	.138	-.816	.276
Weak support on behalf of government	5.650	.056	.138	-.745	.276
Traditional production techniques	5.497	-.125	.138	-.672	.276
Lack of international marketing	6.688	-.009	.138	-.983	.276
Weakness in marketing research	6.768	-.275	.138	-.985	.276
Inappropriate knowledge about the destination country	6.043	-.174	.138	-.796	.276
Weak advertisement	5.948	-.370	.138	-.647	.276
Weak technology	5.694	-.169	.138	-.731	.276
Insufficient production	5.880	-.222	.138	-.782	.276
Weak investment in R & D	6.569	-.281	.138	-.890	.276
Weak processing of materials	5.848	-.339	.138	-.698	.276
Bureaucratic issues in export	5.832	-.156	.138	-.827	.276
Lack of export plan	5.347	-.272	.138	-.590	.276
Weak investment in production	5.840	-.033	.138	-.824	.276
Weak motivation	6.152	-.254	.138	-.776	.276
Valid N (listwise)					

3. The results

Before, we perform factor analysis, we need to find out about the number of clusters. Fig. 1 demonstrates the summary of our scree plot.

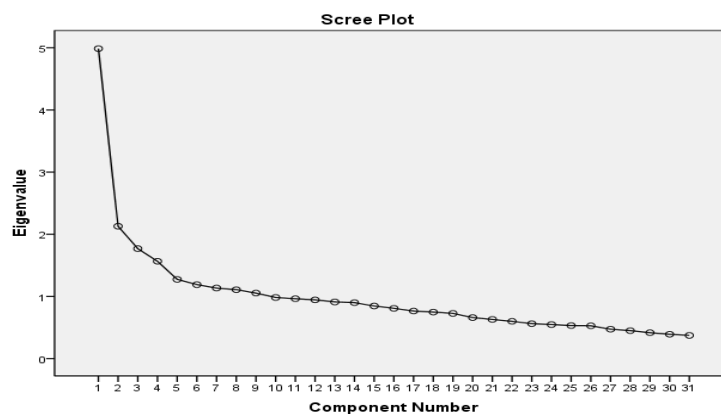


Fig. 1. The results of Scree plot

According to the results of Fig. 1, we can extract nine factors and Table 2 summarizes the results of our factor analysis investigation.

Table 2

The summary of statistical observations

	Component								
	1	2	3	4	5	6	7	8	9
Lack of attention to cultural issues	.727								
Weak support from financial firms	.691								
Weak support from government	.569								
Unsuitable working facilities	.533								
Lack of attention global market	.526					.394			
Traditional production method	.498		.349						
Lack of good marketing specialist	.492				.492				
Weak quality	.402			.361					
Weak technology		.792							
Poor investment		.625							
Poor advertisement		.579			.344				
Insufficient production		.512	.353						
Lack of a good plan for export			.656						
Bureaucratic issues in export			.615						
Weak investment in R & D			.560						
Poor level of knowledge				.628					
Weak marketing				.605					
Weak management commitment				.476			.460		
Poor research					.772				
Inappropriate knowledge about the destination country					.640				
Weak process planning	.349		.353		-.384				
Weak coordination among Governmental organizations						.685			
Devaluation on currency						.589			
Weak transportation facilities							.656		
Unfair pricing							.619		
Weak infrastructures for export						.385	.424		
Lack of reliable dealer								.634	
Poor packaging								.572	
Embargo and political issues								.533	
Government policy								.343	
Weak motivation									.797

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Based on the results of Table 2, we extract eight clusters as follows,

Table 3

The summary of clustering

Fac1	Fac2	Fac3	Fac4	Fac5	Fac6	Fac7	Fac8
Q16	Q24	Q29	Q12	Q20	Q14	Q1	Q3
Q15	Q30	Q28	Q11	Q21	Q10	Q2	Q5
Q19	Q23	Q26	Q13	Q22	Q9	Q7	Q4
Q18	Q25	Q27				Q8	Q6
Q17							

Now, we are able to describe each category described in Table 3.

3.1. The first factor: Environmental issues

Table 4 summarizes the results of our analysis for the first factor. Based on the survey, “Lack of attention to cultural issues” is the most important factor followed by “Weak support from financial firms”.

Table 4

The summary of extracted items for the first factor

	Wight	Eigenvalue	Variance	Accumulated
Lack of attention to cultural issues	.727	16.088	16.088	4.987
Weak support from financial firms	.691			
Traditional production method	.498			
Weak support from government	.569			
Unsuitable working facilities	.533			

Cronbach alpha = 0.699

3.2. The second factor: Export support issues

Table 5 demonstrates the summary of our investigation on the second factor.

Table 5

The summary of extracted items for the second factor

	Wight	Eigenvalue	Variance	Accumulated
Weak technology	.792	2.130	6.870	22.957
Poor investment	.625			
Poor advertisement	.579			
Insufficient production	.512			

Cronbach alpha = 0.580

According to the results of Table 5, “Weak technology” is number one priority followed by “Poor investment”, “Poor advertisement” and “Insufficient production”.

3.3. The third factor: Potentials for export

Table 6 demonstrates the summary of our investigation on the third factor.

Table 6

The summary of extracted items for the third factor

	Wight	Eigenvalue	Variance	Accumulated
Lack of appropriate plan for export	.656	28.666	5.053	1.770
Bureaucratic issues in export	.615			
Poor investment in R & D	.560			
Weak process	.384			

Cronbach alpha = 0.599

According to the results of Table 6, “Weak technology” is number one priority followed by “Poor investment”, “Poor advertisement” and “Insufficient production”.

3.4. The fourth factor: Business plan

The next issue is associated with business plan related factors and Table 7 demonstrates the summary of our investigation on the fourth factor.

Table 7

The summary of extracted items for the fourth factor

	Wight	Eigenvalue	Variance	Accumulated
Weak knowledge	.628	1.566	5.053	33.719
Poor marketing planning	.605			
Poor quality	.402			

Cronbach alpha = 0.4598

According to the results of Table 6, “Weak technology” is number one priority followed by “Poor investment”, “Poor advertisement” and “Insufficient production”.

3.5. The fifth factor: Export plan

The next issue is associated with export plan related factors and Table 8 demonstrates the summary of our investigation on this factor.

Table 7

The summary of extracted items for the export plan

	Wight	Eigenvalue	Variance	Accumulated
Lack of access to an specialist for marketing planning	.522	1.275	4.113	37.832
Poor marketing planning and studies	.478			
Inappropriate image from the country of destination	.426			

Cronbach alpha = 0.505

According to the results of Table 7, “Lack of access to an specialist for marketing planning” is number one priority followed by “Poor marketing planning and studies”, “Poor advertisement” and “Inappropriate image from the country of destination”.

3.6. The sixth factor: Structural barriers

The next issue is associated with structural barriers (Helpman & Krugman, 1985) and Table 8 shows the summary of our investigation on this factor.

Table 8

The summary of extracted items for the structural barriers

	Wight	Eigenvalue	Variance	Accumulated
Lack of knowledge on world’s needs	.526	1.190	3.839	41.671
Insufficient coordination between different ministries	.685			
Uncertainty on currency	.589			

Cronbach alpha = 0.473

According to the results of Table 8, “Insufficient coordination between different ministries” is number one priority followed by “Uncertainty on currency”, “Poor advertisement” and “Lack of knowledge on world’s needs”.

3.7. The seventh factor: Competition capability

Another issue is related to sufficient capability for competition with four factors and Table 9 shows the summary of our investigation on this factor.

Table 9

The summary of extracted items for the competition capability

	Wight	Eigenvalue	Variance	Accumulated
Weak transportation	.656	1.136	3.365	45.336
High price	.619			
Weak infrastructure	.424			
Lack of management commitment	.476			

Cronbach alpha = 0.519

According to the results of Table 9, “Weak transportation” is number one priority followed by “High price”, “Lack of management commitment” and “Weak infrastructure”.

3.8. The seventh factor: Strategy

The last issue is associated with strategy with four factors and Table 10 demonstrates the summary of our investigation on this factor.

Table 9

The summary of extracted items for the competition capability

	Wight	Eigenvalue	Variance	Accumulated
Lack of a reliable dealer	.634	1.110	3.580	48.915
Poor packaging	.572			
Embargo and political sanction	.533			
Government policy	.343			

Cronbach alpha = 0.450

According to the results of Table 9, “Lack of a reliable dealer” is number one priority followed by “Poor packaging”, “Government policy” and “Embargo and political sanction”.

4. Conclusions

In this paper, we have presented an empirical study to find important factors influencing medicinal plants for the purposes of export. The study has implemented factor analysis and determined eight important factors based on scree plot. The factors are environmental issues, export supportive issues, potentials for export, business plan, export plan, structural barriers, competition capability and strategy.

References

- Babakhani, M & Haji, H. (2011). An empirical study to determine the critical success factors of export industry. *Management Science Letters*, 1(1), 23-28.
- Buzzell, R. D. (1968). *Can you standardize multinational marketing?*. Reprint Service, Harvard business review.
- Helpman, E., & Krugman, P. R. (1985). *Market structure and foreign trade: Increasing returns, imperfect competition, and the international economy*. The MIT press.
- Julian, C. C., & Ali, M. Y. (2009). Incentives to export for Australian export market ventures. *Journal of Small Business and Enterprise Development*, 16(3), 418-431.

- Krugman, P. R. (1997). *Age of Diminished Expectations: US Economic Policy in the 1990s*. the MIT press.
- Kumar, M. R., & Janagam, D. (2011). Export and import pattern of medicinal plants in India. *Indian Journal of Science and Technology*, 4(3), 245-248.
- Leonidou, L. C. (2004). An analysis of the barriers hindering small business export development. *Journal of small business management*, 42(3), 279-302.
- Panagariya, A. (1995). What can we learn from China's export strategy?. *Finance and Development*, 32, 32-32.
- Pinho, J. C., & Martins, L. (2010). Exporting barriers: insights from Portuguese small-and medium-sized exporters and non-exporters. *Journal of international Entrepreneurship*, 8(3), 254-272.