Research Article

Export Readiness Assessment of Ten Iranian Pharmaceutical Companies and Comparison with their Export Performance

Mehdi Mohammadzadeh[1], Mohammad Poloee[2], Tayebeh Ghari[3*]

[1]*Department of Pharmacoeconomic and Pharmacy Management, School of Pharmacy, Shahid Beheshti University of Medical Sciences, Tehran, Iran.*

[2]*Department of Economic, Accounting and Management, Payame Noor University Karaj Center, Karaj, Iran.*

[3]*Department of Pharmaceutics, School of Pharmacy, Alborz University of Medical Sciences, Karaj, Iran.*

A B S T R A C T

Background: In the area of exporting, in developing countries, including Iran, the concept of export readiness is unknown to many decision makers and field of activity of Iranian pharmaceutical companies have been limited to the domestic market. Therefore, the main objective of this study is to compare the export performance of ten Iranian pharmaceutical companies with their export readiness.

Methods: In order to do this, the top ten of Iranian pharmaceutical companies were selected as the sample. The companies' export readiness was measured, and compared with their export volume as well as their export growth (as two factors for determining the export performance) in five years, to practically check the model and find the strengths and weaknesses of these Iranian pharmaceutical companies in the export factors.

Results: Base on the results of the study, the export readiness of these companies does not have significant correlation with companies' export volume in the current circumstances, but it can predict the export growth in the firm's export rate with 95% certainty.

Conclusion: The most important thing is that according to the data collected in our study, most of these ten Iranian pharmaceutical companies are not ready to attend in exporting and international markets and only two companies were ready to export. It seems that making improvement in some variables like obtaining international standards, marketing and exporting education, having a transparent and documented plan and having the responsible person for export could increase export readiness of pharmaceutical companies.

Introduction

According to the international business history, lots of pharmaceutical companies have an interest or desire to export. Exporting not only helps individual companies to grow but also plays an important role in improving their trade balance. It can increase competition and help the firms to achieve financial and strategic targets.[1] It is commonly recognized that exporting represents an attractive means of tapping foreign market opportunities.[2] Since the exporting is the most common form of international business involvement, researchers have much of their attention on developing a greater understanding of the determinants of export performance.[3,4] Shoham has generally defined export performance as the result of a firm's actions in export markets.[5] Exporting firm's performance

can be measured by its marketing strategies and her ability to apply them. Export marketing strategy is usually considered as result of firms characteristics.[6,7] In fact, exporting is a challenge on the resources of the industries and needs sustained abilities and capabilities to export, referred to as export readiness.[8] The export readiness concept recognizes a firm's potential transition from a purely domestic firm in to an international firm.[9] An exporter firm is one that has, at a minimum, the drive, experience, financial resources, and capacity to successfully meet demand for its product in a foreign market.[10] Although large body knowledge is produced by the earlier researchers in this area, still, in developing countries, including Iran, the concept of export readiness is unknown to many decision makers and field of activity of Iranian

*Corresponding Author: Tayebeh Ghari, E-mail: tayebehghari@gmail.com

pharmaceutical companies have been limited to domestic market. According to FDO (Iran Food and Drug Organization) reports, the Iranian pharmaceutical companies export only 5% of their products.[11] Therefore, a comprehensive framework applicable to the firms in developing countries should be developed. The export performance of companies has been studied widely, and the literature reports factors affecting export performance that are both internal and external to company.

One of the dominant issues that are ignored in exporting area is pre-internationalization phase. According to *Alvin's* study in 2010, four concepts are proposed as the key components that define the experiential learning process underlying a firm's pre-export phase (Uppsala model): export stimuli, attitudinal/psychological commitment, resources and lateral rigidity. In this study, export readiness assessment is considered as an imperative base for all companies.[12]

Knight and Kim (2009) stated that international orientation, international marketing skills, international innovativeness, and international market orientation are four important factors for the presence of qualified firms in the international business.[13] In a study entitled "An analysis of the relationship between staff qualification and export readiness of pharmaceutical companies: The case of Iran", factors of existence of an export champion, training constantly, proud for working in the company, management turnover staff enthusiasm toward exporting have significant effects on export performance of companies.[14]

The most important research in area of export readiness has been done by Dadfar in 2011. This study attempts to build a comprehensive framework for assessment of export readiness of developing countries' firms, and evaluate export readiness of Iranian firms. In this study PARO model has been purposed and four features including corporate profile, export awareness, export ability, and export operation has been evaluated and finally the degrees of readiness was explored.[8]

According to the above mentioned and in order to evaluate the export readiness of ten Iranian pharmaceutical companies and comparison with their export performance, this study was done. Export volume and export growth were used to measure export performance. Among the Iranian pharmaceutical companies, ten active companies in export were selected as the samples. The companies' export readiness was measured, and compared with their export volume as well as their export growth in five years, to practically check the model and find the strengths and weaknesses of these Iranian pharmaceutical companies in the export factors.

Experimental
Methodology

The aim of our study was to evaluate the export readiness of ten Iranian pharmaceutical companies and comparison with their export performance. For this purpose, the top ten pharmaceutical companies were selected (Table 1). Lots of Iranian pharmaceutical companies do not have the criteria for our research in terms of products diversity, products volume, and export activity. Therefore, we selected ten pharmaceutical companies which have the better export performance with willingness to cooperate and respond to the questionnaire.

The study is a descriptive and analytical analysis to determine export performance of these companies.

Table 1. Name of ten pharmaceutical companies.

No.	Company name
1	CinnaGen Co.
2	Farabi Pharmaceutical Co.
3	Dana Pharmaceutical Co.
4	Kharazmi Pharmaceutical Co.
5	Aburaihan Pharmaceutical Co.
6	Sinadaru Pharmaceutical Co.
7	Exir Pharmaceutical Co.
8	Darou Pakhsh Pharmaceutical Co.
9	Sobhan Darou Pharmaceutical Co.
10	Abidi Pharmaceutical Co.

Based on PARO model, questionnaire which contains 40 questions in four branches containing corporate profile (The company's attributes which contain type of management, products and its scope, business mission, type of industry, and overall strength and weaknesses, …), export awareness (marketing continuing education, awareness of manager from benefits of exporting, …), export ability (the ability to obtain international standards, promotion of GMP level, …) and export operation (study of target market, advertising elements, …) was prepared. At least, ten experts in each of the firms have been interviewed and filled the questionnaire. Content validity of the questionnaire was examined. Experts were asked to evaluate relevance, completeness and clarity and then the scores of each question were defined. The Cronbach's Alpha Coefficient for each one was determined to test the reliability of the questionnaire. Cronbach's Alpha Coefficient more than 0.7 was obtained. Correlation of each question with other questions was higher than medium level and there was no negative correlation (an inverse relationship) between questions.

After answering the Yes/No (1/0) questions, total scores at the end of each branch were calculated. According to 80 % cut-off points, obtaining a quorum of at least three branches indicate primary readiness for exporting.

The only organization that appears to have accurate statistics about export of pharmaceutical companies is Trade Promotion Organization of Iran. Based on information from this organization, 5-years export statistics of pharmaceutical companies (in years 2010 until 2014) including export volume and export growth were used and compared with results of questionnaires about export readiness.

Data analysis
SPSS statistical package, version 21.0 (SPSS, Chicago, IL, USA) was used to analyze the results. In order to determine normality of data, Kolmogorov–Smirnov test was used. Pearson correlation coefficient was applied to show intensity and type of correlation. Pearson correlation coefficient is a measure of the linear correlation between two variables X and Y, giving a value between +1 and −1 inclusive, where 1 is total positive correlation, 0 is no correlation, and −1 is total negative correlation.

Results
Descriptive statistics is the discipline of quantitatively describing the main features of a collection of information or the quantitative description itself. It can provide an overview of data for researchers and cannot be extended to the general cases. In the present study, results have been discussed descriptively. Total score and number of questions with this score have been shown in Table 2. It can be used to assess strengths and weaknesses of the companies. Questions, in which the score is 8 or more than 8, can be considered as the strength of the pharmaceutical companies. In the same way, questions, in which the score is 4 or less than 4, can be considered as the weakness of the pharmaceutical companies. The average scores of the companies in each branch indicate overall strengths and weaknesses of the companies. It has been shown in Figure 1. As can be seen in Table 3, companies have the highest and lowest export volume in years 2014 and 2010 respectively. Characteristics of selected

Pharmaceutical Corporations included total export in Rial, percentage share of each company were summarized in Table 4.

Table 2. Total score and number of questions.

| Total score	Number of questions
10	7
9	8
8	7
7	4
6	4
5	2
4	3
3	3
2	0
1	1
0	1

Figure 1. The average scores of the firms in each branch.

Table 3. Descriptive statistics of companies in terms of export volume.

No.	Year	Export volume (Mean $\pm$ SD)
1	2010	4804042.7 $\pm$ 7690806.8
2	2011	5101702.2 $\pm$ 8596853.3
3	2012	6155660.7 $\pm$ 9124915.8
4	2013	5710195.2 $\pm$ 8256894.9
5	2014	6699358.9 $\pm$ 7543443.3

Table 4. Characteristics of selected pharmaceutical companies.

No.	Company name	Total export in Rials	Percentage share of each company in export
1	CinnaGen Co.	670603000000	28.8
2	Farabi Pharmaceutical Co.	328949000000	14.1
3	Dana Pharmaceutical Co.	204709000000	8.8
4	Kharazmi Pharmaceutical Co.	42226748613	1.8
5	Aburaihan Pharmaceutical Co.	39328793973	1.7
6	Sinadaru Pharmaceutical Co.	2193262650	0.1
7	Exir Pharmaceutical Co.	697431000000	30.1
8	Darou Pakhsh Pharmaceutical Co.	255876000000	11.1
9	Sobhan Darou Pharmaceutical Co.	57626265627	2.5
10	Abidi Pharmaceutical Co.	27810744057	1.2
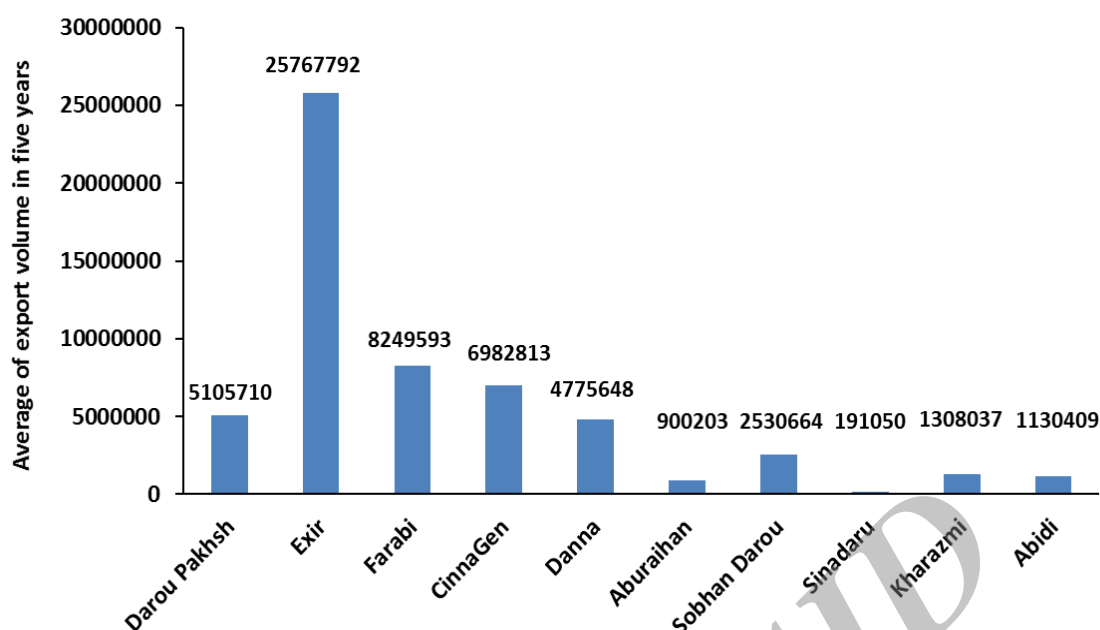
Figure 2. Company average of export volume in five years (in Dollar terms).

Table 5. Export readiness and average of export growth.

No.	Company name	Export readiness	Average of export growth
1	CinnaGen Co.	36	676 %
2	Farabi Pharmaceutical Co.	29	190 %
3	Dana Pharmaceutical Co.	29	85 %
4	Kharazmi Pharmaceutical Co.	29	47 %
5	Aburaihan Pharmaceutical Co.	29	53 %
6	Sinadaru Pharmaceutical Co.	28	2 %
7	Exir Pharmaceutical Co.	27	-0.5 %
8	Darou Pakhsh Pharmaceutical Co.	26	47 %
9	Sobhan Darou Pharmaceutical Co.	26	6 %
10	Abidi Pharmaceutical Co.	23	6 %
11	Average	28.6	111 %

According to Figure 2, the minimum and maximum export volume in five years was for Aburaihan Pharmaceutical Co. and Exir Pharmaceutical Co. respectively.

In order to evaluate export performance of pharmaceutical company, company export growth was also evaluated. As it can be seen in Figure 2, Exir Pharmaceutical Co has maximum export volume, but average of export growth shown that this company has negative growth and CinnaGen Co. has 676% growth in these years (Table 5).

Kolmogorov–Smirnov test was used to evaluate normality of model components. The statistical hypothesis was defined as following:

H_0: Data are normal
H_1: Data are not normal

Data have been summarized in Table 6. As can be seen, P-value is more than the significance level (0.05). Therefore, the null hypothesis was accepted.

It means that all variables have normal distribution. In order to show intensity and type of correlation between research variables, Pearson correlation coefficient was applied (Table 7). As can be seen, corporate profile, export awareness, export ability, export operation and export readiness can predict 26%, 0.2%, 9%, 5% and 40% of changes in export volume respectively and there is no significant correlation between all mentioned variables and export volume ($P < 0.05$).

Table 6. Kolmogorov–Smirnov test results.

Branch Name	Z value	Sig
Corporate profile	0.784	0.57
Export awareness	0.55	0.923
Export ability	0.679	0.746
Export operation	0.568	0.904
Export volume	0.847	0.47

Table 7. Pearson correlation coefficient for evaluation of correlation between export volume and export readiness and all branches.

Independent variable	Dependent variable	Pearson correlation coefficient	Coefficient of determination (R^2)	Significance level
Corporate profile	Export volume	0.049	0.002	0.892
Export awareness	Export volume	0.3	0.09	0.4
Export ability	Export volume	0.219	0.05	0.543
Export operation	Export volume	0.629	0.4	0.051
Export readiness	Export volume	0.511	0.26	0.13

Table 8. Pearson correlation coefficient for evaluation of correlation between growth of company exports and export readiness and all branches.

Independent variable	Dependent variable	Pearson correlation coefficient	Coefficient of determination (R^2)	Significance level
Corporate profile	Export growth	0.46	0.21	0.181
Export awareness	Export growth	0.68	0.46	0.03
Export ability	Export growth	0.452	0.2	0.189
Export operation	Export growth	0.617	0.38	0.057
Export readiness	Export growth	0.869	0.76	0.001

According to the results obtained from the export readiness and since there is no significant relationship between export readiness and export volume, export growth as a second factor for evaluating of export performance was selected. In order to do this, correlation between average of export growth and export readiness and all branches was evaluated using Pearson correlation coefficient. Data are summarized in Table 8. It shows that there is a significant correlation between export readiness and export growth ($P < 0.05$) and it can predict 76% of changes in export volume. It seems that this correlation can be useful for prediction.

Discussion

In order to gain presence in other countries, an organization tries to diagnose and use opportunities in target markets on the basis of realistic evaluation of internal strengths and weaknesses.[15] Internationalization involves the firm making marketing mix decisions in one or more targets across national boundaries and involves establishing, manufacturing and processing the facilities worldwide and coordinating marketing strategies across the globe.[16] Earlier researchers have explained internationalization in many theories and models.[5,17,18] In fact, exporting is one of the significant preliminary steps of an enterprising organization towards expanding its international business activities. A comprehensive survey of the literature by Katsikeas, et al revealed that export intensity, export sales, export growth, and export profitability are the four most used measures of economic export performance.[19] Based on previous study, export volume and export growth are considered as two determining factors of export performance. Therefore, our study was focused on these two factors as representing factors for export performance. Our data were based on information collected from Trade Promotion Organization of Iran. As mentioned before, data obtained from this organization about ten active Iranian pharmaceutical companies in export regarding export volume and export growth were compared with export readiness. 5-years export statistics of pharmaceutical companies including export volume and export growth were used and compared with results of questionnaires about export readiness. Corporate profile, export awareness, export ability and export operation was selected as four factors determining export readiness. Our results showed that there is no significant correlation between all variables representing export readiness and export volume, but there was a significant correlation between export readiness in branch of export awareness and export growth. In confirmation of previous studies, our results shown that export volume and export growth are two different concepts in exports so that Exir Pharmaceutical Co has maximum export volume, but average of export growth shown that this company has negative growth and CinnaGen Co. has 676% growth in five years. As the results showed export awareness is the most effective factor determining export growth. Indeed, having well educated, efficient and motivated staffs are the most important requirements in order to establish a successful marketing program. Other researchers have also shown that the knowledgeable, qualified, and well-motivated staffs are required for successful implementation of export marketing plans.[14] Another study discussed that management and leadership style, qualified staff, efficient resources, and effective strategies in different areas are prerequisite for initiating of export marketing.[20]

As the final consumers of the pharmaceutical products are people, and they may expect products similar to consumer products and core marketing principles applicable to them. However,

pharmaceutical marketing has specific unique characteristics, because the decision makers for buying are not the consumers. Definitely other individuals or organizations such as physicians, hospitals, governors, etc have been involved. Thus, one of the most important success key factors is the presence of qualified staff for creating an effective relationship.[21]

Our results also showed that export readiness status of these ten Iranian pharmaceutical companies is not desirable. Average score for export readiness of these ten companies were 28.6 out of 40. In other words, export readiness average of top pharmaceutical companies was 70 %. Except for corporate profile which contains a series of features and basic requirements, major weaknesses have been seen in other branches including export awareness, export ability and export operation. Excluding CinnaGen Co. that could bring score 8 in four branches of export readiness and Farabi Pharmaceutical Co. which had less than 8 score in only one variable, remaining companies could not provide the requirements. These results showed that these ten Iranian pharmaceutical companies are not ready to attend in exporting and international markets. It seems that the main weaknesses of these Iranian pharmaceutical companies are inability to obtain international standards such as WHO, FDA, etc, lack of marketing and exporting education, declining of profit in order to penetrate in some markets, lack of transparent and documented plan, absence of responsible person for export, lack of financial and human resources, Lack of funding in the export sector and lack of international marketing plan. Making improvement in each of mentioned items is an appropriate solution to increase export readiness of pharmaceutical companies.

Conclusion

As the results showed export awareness is the most effective factor determining export growth. Indeed, having well educated, efficient and motivated staffs are the most important requirements in order to establish a successful marketing program. The most important thing is that according to the data collected in our study, most of these ten Iranian pharmaceutical companies are not ready to attend in exporting and international markets and making improvement in some variables could increase export readiness of pharmaceutical companies.

Conflict of interests

The authors claim that there is no conflict of interest.

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