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Evaluation of the relationship between competitive advantage and export performance (Case study: Iranian firms exporting biotech products)

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ABSTRACT

Nowadays, there is nobody in the scientific community to the importance of biotechnology and nanotechnology and its impact on various fields of knowledge is not. Knowledge that has driven the development of many countries and cause immense upheaval in the department of medicine, pharmacy, agriculture, industry, mining, etc., is. The world population is growing with incredible speed, which is estimated by 2013 the world population will reach 7 billion people. Certainly one of the most important problems in the future human needs executive officers will be in developing countries. The four dimensions of competitive advantage (quality, performance, innovation, responsiveness to customers) will be discussed. Using a conceptual model, the relationship between the tense competitive advantage in these companies and their export performance is investigated.

Keywords: competitive dimensions, Export Performance of Biotechnology Products

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INTRODUCTION

Global biotechnology market value of income for the year 2013 with a growth rate of 7/2 percent, and the rate of 7/305 billion is expected. Currently, biotechnology products and services with a share of about 38 percent, second only to the U.S. market, all products and services are available. Hope to solve the problem is most acute is the twenty-first century human. Biotechnology can grow in many branches of science in order to help us become better academic growth. Web-based or statistically valid SCI MAGO, which deals with the classification of countries and academic journals, in 2011, Iran ranked 14th among the 111 countries ranked in the biotechnology field. Development of biotechnology in the country to compete with foreign products, grow jobs, increase production and export will be supported by private and cooperative sectors. In the first study to evaluate firms exporting biotech products in terms of four dimensions of competitive advantage (quality, efficiency, innovation and responsiveness to customers) will be discussed. The conceptual model, the relationship between the levels of competitive advantage in the export performance of companies and have them tested. The results showed that: 1) although biotechnology

companies in the quality of products have good quality, but in other aspects of competitive advantage (in terms of efficiency, innovation and responsiveness to customers) are located on the lower level and 2) the competitive advantage and export performance of firms exporting biotech products, there is a positive meaningful relationship.

Research literature

New theory of competitive advantage Theories discussed in the competition will be divided into two categories: 1 - The Theory of Industrial Organization (IO) 2 - source circuit theory (RBV)

The theory of industrial organization Industrial organization theory for the first time by the (1968) suggested, the external environment of the firm view that the industry's attention. But theorist Michael Porter, the group is known. According to Porter's model, the basic unit of analysis is the industry. He said the firm's profitability depends on two factors, including the attractiveness of the industry and the firm's relative position in the industry. Accordingly, Porter provides a framework in which activities are the source of competitive advantage and perform any action necessary to tangible assets (including physical and financial assets) and intangible (including human resources, and technology) are. So that these assets or through external achievements or learning by doing (work function) are obtained. The purpose of the specific assets which are activities that are decisive competitive advantages, are doing.Rchntyn (2004) states that the firm's strategy must also be given to the needs of our customers. Porter in 1990, but the causes of success in business, relationships and the nature of the industries and fields of business forms as effective. In other words, Porter for the question "Why do some countries succeed in the international competition and not others?" Diamond model with a new model called "four factors 1) internal factors, 2) domestic demand conditions, 3) firm strategy, structure and competition, and 4) to determine the status of the related industries and supporting competitive firms knows. These four factors interact with each other and are affected by unforeseen events and the government. His diamond model to determine which industries and firms' competitive advantage has been used. Not Porter shows how each of these factors can lead to the loss of national advantage. Approach based on industrial organization, competitive advantage, environmental attitudes are known to have limitations in this regard has been criticized in the past decade.

Resource-based theory

Resource-based views of the firm’s resources are focused on the external environment. According to this view, the source of competitive advantage and the advantage of resources and how much resource characteristics will determine its sustainability. This view first by Penrose (1959) was introduced. His analysis is based on an understanding of the sources of the firm's product strategy is focused on behavior. But the main study in this field byVrnrflt (1984) has done. Terms of the resources and products are two sides of one coin and resources including tangible and intangible assets that belong to the firm is limited to term. Grant (1991) was the first to distinguish the difference in this regard between the resources and competencies. His sources of data to be used in commercial processes are the basic unit of analysis. According to Amity and Schumacher (1993) includes a group of agents available to controlFirms. Thus, according to this view, the firm's strategic plan includes five steps:

1 - Identify and classify the firm's resources, assess the strengths and weaknesses of competitors and identify opportunities for better use of resources.
2 - Determine the firm's competencies and resources related to each of the competencies
3 - Assessment of potential resources and competencies
4 - Selection strategy so that the best form of the firm's resources and competencies to exploit external opportunities.
5 - Identify resource gaps that need to be filled.

Dimensions of competitive advantage

Quality

The quality of a product or service is what the customer demands. New look at the quality can be said that has hurt the quality of the product entering the market, there are moments. This definition seems incomprehensible at first glance, but when it can add value to a product that meets customer demands Performance.

Efficiency

To measure performance, the costs of inputs required to produce a given output can be calculated. When a company is more efficient, cost of inputs to produce an output that is less clear.

Innovation

Innovation development and application of new ideas in product, process or service that is new to the dynamic growth of the national economy and increase employment is to generate interest in innovative companies. New ideas are needed to understand new customer or new production techniques and the information collected will be developed with an entrepreneurial vision. The application process to get a new idea, a product, process or service, reduce cost and increase productivity should be

Responding to Customers

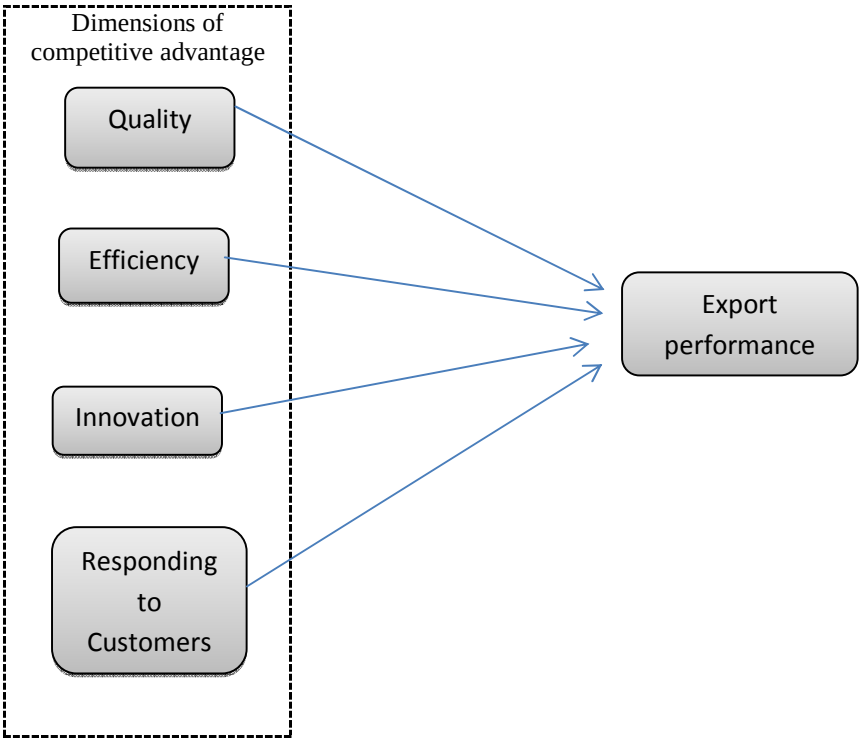
Customers want products at the right time., A company must identify customer needs and to meet them.

Table 1: A Summary of Researches about Measuring the Export Performance

Related researches	***Measuring the export performance***
Albaum, Strandskov&Duerr (1998), Cavusgil&Zou (1994), Julian (2003), Kirpalani (1989), Lages&Lages (2004); Morgan, Kaleka&Katsikeas (2004) Ogunmokun& Wong (2004).	*Growth of export selling and its intensity*
Castaldi, Sengupta& Silverman (2001), Cavusgil&Zou (1994), Cuyvers& Dumont (2000), Diamantopoulos &Schegelmilch (1994), Lages&Lages (2004), Ogunmokun& Wong (2004)	*Export profitability*
Cavusgil&Zou (1994), Kirpalani (1989), Das (1994), Ogunmokun& Wong (2004)	*Achieving the export strategic goals*
Cadogan, Diamantopoulos &Siguaw (1999), Cavusgil&Zou (1994), Evangelist (1994), Katsikeas, Piercy & Ioannidis (1996), Ogunmokun& Wong (2004)	*Management of perceptions and export success*
Cavusgil&Zou (1994), Lages& Jap (2002), Ogunmokun& Wong (2004)	*Satisfaction with successful export*
Das (1994), Kirpalani (1989), Solberg (2002)	*Increasing the market shares*

Table 4: a summary of related researches toward the export performance and some variables

Findings	***Dependant variable***	***Independent variable***	***Industry***	***Researcher***
Competitive environment affects the export performance, considerably.	export performance	Competition	Combinational	[9]
Considerable margin	export performance	Technology	Combinational	[9]
Insignificant	export performance	Company size	Combinational	[9]
Export commitment affects the export performance, positively and considerably.	export performance	Commitment to the export	Combinational	[10]
There is a negative relationship between company size and export velocity.	Export velocity	Company size	Combinational	[17]
There is a positive relationship between all variables and export behavior.	Export behavior	Ownership, age, learning, technology	Combinational	[21]
There is a positive relationship between culture and export strategy.	Export strategy	Culture	Combinational	[21]
There is a positive relationship between experience and export performance.	export performance	Experience	Combinational	[28]
Competition affects the adaptation rate, positively.	Adaptation level	Competition	Combinational	[29]
Commitment affects the company for adapting with the marketing strategies.	Adaptation level	Commitment	Combinational	[29]
Mixed and varied results	Export success	Company size	Combinational	[30]
There is a positive relationship between export attractiveness and export success.	Export success	Export attractiveness	Productive	[31]
There is a positive relationship between size and profitability.	Export profitability	Company size	Extract from mines, foodstuff, woods and …	[31]
The tendency of large companies is toward the export more than before.	Export level	Company size	Food	[8]
A negative relationship between export performance and competition.	export performance	Intensity of competition	Combinational	[36]
Relationship between export infrastructures and export velocity.	Export velocity	Export infrastructures (such as roads, telecommunication, …)	Combinational	[36]
There is a positive and significant relationship between export velocity and commitment.	Export velocity	Company commitment	Combinational	[36]



Hypotheses

H 1: firms exporting biotech products in terms of competitive advantage are low.
Sub-hypothesis 1-1: firms exporting biotech products are of low quality.
H 1-2: firms exporting biotech products in terms of performance are low.
H 1-3: firms exporting biotech products in terms of product innovation are low.
H 1-4: firms exporting biotech products to meet the customers are low.
H 2: The dimensions of competitive advantage and export performance of firms exporting biotech products, there is a significant positive relationship.
H 2.1: The exporter companies, biotech products between the product quality and export performance is positive and significant.
H 2.2: The exporter companies, biotech products between the export performances are positive and significant.
H 2-3: The next biotech products in the company's product innovation and export performance are positive and significant.
H 2-4: The next biotech companies exporting products to meet customers' export performance is positive and significant.

Export performance

The output of the export activities of a company say. Performance of exports, has been widely studied. Performance results export activities are export company. [28].Although the concept and operational definitions vary in the literature [36]. Export performance of the firm as a source of income, Bavaml Inc. (dependent on exports, embracing innovation, firm size), industry factors (industrial applicability) and compliance strategy and market factors related products[11],[12],[14], [33]. Reasoning adopted RBV (Barney, 1991) and the theory of IO (run, from 1951 to 1956), this study includes strategies to adapt the product as a corporate strategy along with product features, export dependence and openness to innovation as the company's internal features and compliance with industry and have a similar market as the external features (run, 1951). Lee (1995) using revealed comparative advantage index (RCA) has reviewed the status of the industry in South Korea. To achieve this goal, Kalahas revealed comparative advantage in exports during the period (1965-1992) during the five-year period is calculated. The results show that the obvious advantage of increased light industry and user since 1965, but the downward trend is competitive. Have .In addition, the indicators, business plan confirms the results of CMS.

The second Rbkhsh study using time series data over the period 1998-1980 is estimated equations of China's real exports. Seaman and Yvtkylv (2004) model of trade flows from Turkey to EU research competitiveness of Europe in the component level using revealed comparative advantage index during the period 2003-1990 have been analyzed. The results showed that among 63 cases of Turkey for seven product groups have competitive advantages. Sivan and Ser (2008) in an article using criteria revealed comparative advantage (RCA) and a comparative measure of export performance (CEP) to evaluate the competitiveness of industry, olive oil, tomato juice and Turkish markets in Italy, Spain and Greece during pay period 2004-1995.

Theoretical framework for research

In this study, the conceptual model derived from the theory of supply circuit is designed. Dimensions of competitive advantage (quality, performance, innovation, responsiveness to customers) that prohibited the circuit theory of the origin of the company is to create competitive advantage and effect relationship between these variables export performance has been investigated.

MATERIALS AND METHODS

The methods used in this research are descriptive.

Statistical Society and Sampling

Are located Means of data collection in this study is a questionnaire.

Methods of data analysis

According to the first hypothesisSecondary hypotheses related to level of competitive advantage TheCompany is exporting biotech products, and because the sample size is greater than 30 Z-test was used. Pearson correlation analysis was used to test Hypothesis 2. And to generalize the results of the Pearson correlation coefficient was used to test torque.

Data Analysis

Given that the sample size is greater than 30, and the assumption of normality of the Z-test is used. As can be seen in Table 1, Hypothesis 1 was confirmed by 95%. 1-1 and 1-3 to reject the hypothesis of secondary hypotheses and assumptions 1-2 and 1-4 were confirmed.

The 95% confidence level	Achieved average	Optimal range	Hypothesis
Confirmed	2/2	μ<3	1 H
Reject	3/48	μ<3	1-1 H
Confirmed	2/09	μ<3	2-1 H
Reject	3/05	μ<3	3-1 H
Confirmed	2/8	μ<3	4-1 H

To examine Hypothesis 2 test and Pearson correlation coefficient was used to test torque. According to Table 2, Hypothesis 2 was confirmed by 95%., and all sub-hypotheses were confirmed.

The 95% confidence level	R calculated	Appropriate coefficients	Hypothesis
Confirmed	0/815	ρ≠0	2 H
Confirmed	0/726	ρ≠0	1-2 H
Confirmed	0/448	ρ≠0	2-2 H
Confirmed	0/546	ρ≠0	3-2 H
Confirmed	0/673	ρ≠0	4-2 H

RESULTS

According to the analysis of research data using the software end, was the overall level of competitive advantage in Iranian companies producing biotechnological products is low. The results of the secondary hypotheses, firms exporting biotech products in terms of product quality and product innovation have been at a low level. Firms exporting biotech products in terms of efficiency and responsiveness to customers located in the lower level. The company will increase the prices due to the low efficiency and cause companies to fail even with high-quality products and innovation to meet the customers are right. Hypothesis 2 was also determined in a review of the aspects of competitiveness and export performance of firms exporting biotech products, there is significant positive relationship. And also see the results of the second hypothesisFirms exporting biotech products in the domains of

quality, performance, innovation and responsiveness to customers and there is a significant positive relationship between export performance.

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