

*Full Length Research Paper*

# **Studying the role of using electronic commerce in development of handy-woven carpet exports compared to using the traditional methods**

**Shirzad Farhikhteh and Fatemeh Farhikhteh\***

Department of Business Management, Lorestan University, Iran.

Accepted 21 February 2012

---

This study examined the effect of using electronic commerce on development of Iran`s hand-woven carpet exports, compared to using the traditional methods. The study is a field study and the population consists of all of the Iranian hand woven carpet exporters. A simple random sampling technique was used to select the respondents surveyed for this study, a total of 65 questionnaires were administered to respondents chosen from all 400 exporters of the country`s hand-woven carpet; statistical tools were used to test the hypothesis such as: T student (to determine whether there was a significant difference between the average of the population and that of the sample) and Chi square (to review the lack of significant differences between the observed frequency and expected frequency of tests) as well as Pearson correlation and multiple regression analysis. To gather information, library resources, questionnaires and interviews were used. To test research questions, six hypotheses with a conceptual model were designed to examine the relationship between the e-commerce, especially Internet, and the exports of the hand-woven carpet. Assumptions in the study, all with 95% confidence were accepted. The findings indicated that there was a significant positive relationship between using the electronic commerce and development of hand-woven exports compared to using the traditional methods from the sample viewpoints both economically and strategically. The study also showed that the use of e-commerce in activities related to distribution channels and buyer`s ordering of carpets through electronic methods, was more effective than using the traditional methods, except for exhibitions and traditional in person forms of carpet orderings. Also, the use of electronic methods in activities associated with hand-woven carpet marketing research, both in terms of growth and profitability of the exports and strategically, was more effective than traditional systems.

**Key words:** Internet, electronic commerce, electronic business, export, hand-woven carpet.

---

## **INTRODUCTION**

The past decade witnessed considerable progress in access to information and communication speed. Convenience and lack of the time and place are the factors that are changing traditional marketing. Internet is a device that companies can achieve these goals quickly

by using it and customers by having only a reference page and connection to the global network at any time and any places can purchase their favorite goods and receive them in any places they want. This could be also true for the Iran`s non-oil products such as handy-woven

---

\*Corresponding author. E-mail: [shirzad1357farhikhteh@yahoo.com](mailto:shirzad1357farhikhteh@yahoo.com).

carpet. Iran's handy-woven carpet as one of the most important sources of getting foreign currency for the country, as its economy has shown, has failed in its dignity name in the world markets in recent years for many different reasons. So it seems that Iran's exporters should look at the issue from a new angle and it is nothing but applying modern marketing techniques in the handy-woven carpet industry, which by using them timely and effectively, positive changes can be met in the Iranian carpet exports (Sanaye'i, 2007). On the other hand, because the crafts, especially handmade carpet, is a combination of art and creativity and reflects the historical, social and cultural characteristics of countries, it is an important factor in order to introduce cultures and civilizations too. Hence, it's exporting can attract tourists from near and far countries and thrive their tourism industry (Iran's Ministry of Commerce, 2010).

## RESEARCH BACKGROUND

Some of the studies related to handy-woven carpet export have been presented here. The subject entitled "The effect of foreign exchange policies of the Iran's Central Bank on the carpet exports over 1991 to 1995", researched by Afsharpoor (1998) concludes:

Statistical research community is: All currency experts of the Central Bank, the Export Development Center's experts, and all those who are the manufacturer and exporter of the handy-woven carpet or somehow linked to the carpet activities. The sample is of cluster and classified type in which each province is a cluster and the study has been conducted through distributing 200 questionnaires among the respondents.

The study ultimately concludes that the Central Bank's foreign exchange policies have not caused increasing in the carpet exports. Also, there is not necessary coordination between the recent central bank's policies and the policies encouraging carpet exports, and continuous changes in central bank policies have created marketing problems for the exporters of the handmade carpet. Although, the Central Bank's policies in recent years have improved the balance of payments, but they have had a negative impact on exports of the carpet and have caused volatilities for it. Another point is that there is no coordination between the currency policies of the Central Bank and those of other organizations which all are based on encouraging exports.

The study entitled: "investigating the position of the handmade carpet in the country's economic development and the reasons for declining in the Iranian global carpet exports", researched by Abadi (2003) concluded:

1. From market demand dimension, the biggest and the most controversial issue is that the export market of the country's handy-woven carpet has been limited to the European society market, especially Germany, so that the European community has always imported more than 65% of Iran's handy-woven carpet and Germany 40% lonely. This implies that the Iranian handy-woven carpet industry is vulnerable in market demand.

2. From market supply dimension, the emergence of new competitors and their success in increasing their share in the world's exports of handy-woven carpet and the reduced share of Iran are considered as the most important issues. Most of these countries have been able to achieve this success by relying on copying of the Iranian carpet design, marketing and export planning, and using cheap and abundant labor force.

3. Besides, manufacturing sector of the handy-woven carpet is suffered from many problems in various stages of production: in the field of sourcing raw materials problems like deficiency of needed raw materials for production, in the field of carpet production problems like using inferior materials, and in the field of carpet exports problems like frequent changing in existing laws and regulations related to the importing and exporting, are the most important issues.

The subject entitled "New methods in marketing carpet exports", researched by Abdolshah (2003) concludes:

The objective of the research is to find the best ways of achieving success. To access export markets of handy-woven carpet, the official's duties in exchanging marketing gets start from two sections, domestically and abroad.

A. Domestic duties: it is related to dividing the country into independent segments based on carpet weaving regions, establishing carpet museums, advertising in museums, grading carpets, establishing festivals in any areas of the country, drawings, public exhibitions, using the advertising equipments and tools, establishment of Carpet centers, creating a World Website for the country's handy-woven carpet, utilizing other export commodities such as putting photographs and posters of the carpets in pistachio's packages and other export foods, sports competitions and exporting carpets with ID.

B. Foreign tasks: It is related to creating a permanent exhibitions, conducting International sports competitions namely Carpet cup, establishing banks for the carpet, carpet sales along with other resources, using renting carpet plans, using the principles of maintaining and increasing customers, producing small handmade carpets as gifts, presenting the old and antique carpets in exhibitions, emphasizing on Iranian culture.

The results of an article entitled "applying new methods of electronic commerce in the handy-woven carpet industry",

presented by Mehdi Zare, show that: the research purpose is to overview IT and how to implement it, to exploit the advantages of the systems that it is based on including e-commerce, Web and electronic marketing in general. In this research, applying information technology-based strategies, especially electronic commerce in the hand-woven carpet industry has been generally divided into two distinct parts including giving information to customers and sales systems.

Moreover, the research has presented the advantages and disadvantages of applying electronic stores for the hand-woven carpet industry, the benefits include: Accessibility at any time and any places, personnel needless, no need to set up different branches, large volume storage needless, physical location needless, using the automation of sectors, using statistical analysis and information.

The study entitled: "Export Function Estimates for the Pakistan Carpet Industry", researched by Cameron and Khair-Uz-Zaman (2004) concluded:

The paper accounts for the fact that main rival Iran was disadvantaged in the sense that exports from the country were subjected varying degree of rationing by the main importer—United States.

To estimate the export function of exotic carpets for Pakistan the paper besides focusing on traditional variables viz; relative prices and exchange rate also investigates the influence of exchange rate volatility on exports. The authors find that the rationing of imports from Iran had positive impact upon exports of carpets from Pakistan. Moreover, the study finds that exchange rate volatility also casts a positive influence on exports when the export function is estimated accounting for impact of sanctions on Iran.

The study entitled: "Handmade Carpets: The Potential for Socio-economic Growth", researched by Srivastava, and Goswami (2007) concluded: The potential for socio-economic growth for the handmade carpet sector can be tapped. To do so, the International Monetary Fund, Asian Development Bank, World Bank, United Nation forum or similar relevant agencies need to be brought into picture to implement above mentioned suggested views. The impact expected from implementing the suggestions presented here would be manifold: improved growth in GDP, life expectancy, literacy, levels of employment, etc.

## LITERATURE REVIEW

### Definition of electronic commerce

A variety of definitions has been presented for electronic commerce. In the simplest form, it can be defined as:

"doing business transactions by using an electronic process" (Sanaye`i, 2008).

Despite a verity of definitions, all of them are sharing with in at least two fields: (1) They are related to buying and selling or exchanging. (2) They concentrate on using a kind of electronic device. But there is no consensus on the electronic devices used, because some definitions concentrate only on the Internet as the device and others concentrate on networks, and even the others concentrate on all other electronic devices such as fax, telephone and telegraph as the electronic components used in electronic commerce (Ghosh, 1998).

In this research, we concentrate on the Internet because of our objectives.

**Internet:** There are many definitions for the Internet. As a whole it can be considered as a valuable tool for meeting customer needs and wants. This has led to the appearance of a completely new advertising industry on the web network (Sanaye`i, 2008). Two main ways of advertising on the Internet are:

1. E-mail: This kind of advertising can be the same as graphic forms.
2. Web sites: These ads may be compact as the size of a line from a text. This type of advertising can be conducted through search engines, advertising in similar stores, and advertising on sites with a large number of customers. Increasing growth of Internet shopping has created changes even in how to order needed goods and services and how to make a payment (Hosseini, 2006).

As a high percentage of financial transactions between companies around the world in all areas of the world trade including hand-woven carpet trade, especially in less developed and developing countries, is exchanged in traditional methods such as L/C system, open accounts or even barter, it seems very useful for organizations to use electronic methods such as credit cards because of their convenience, reliability and many other advantages for both the buyers and sellers. As this especial problem stressed by a high rate of respondents in their interviews as a vital barrier to sell the carpets abroad, it could be inferred that they suffered from the issue intensively.

### Types of electronic commerce

1. Business to Business trading (B2B). An example of this kind of business is a company uses a network to order its needed materials to manufacturers, gets its buying pre-factor and invoice as well as makes a payment for the costs of its bought goods (Heshmati,

1999). B2B is very lucrative because by using it the lists of inventory, time cycle of production, and manufacturing and overhead costs are being reduced (Zare, 2003).

2. Business to Consumer trading (B2C). Trading between the seller and the buyer is now becoming the most common transaction in the area of electronic commerce on the Internet. B2C started with launching sites like *Amazon and CD Now* (Zare, 2003).

3. Business to Government Trading (B2G). This kind of business includes all business/finance transactions between companies and governmental organizations. This type of electronic commerce is now passing its childhood (Zare, 2003).

There are some other types of e-commerce, of course, that we have not regarded them here. In exporting the Iran's handy-woven carpet, the first two types are used but almost over 90% of Iran's handy-woven carpet is exported by B2B trading. It means that an importer in a foreign country, either a dealer or a company, orders the carpets to an Iranian exporter and the exporter delivers them to the buyers based on the good relationship between them.

Although B2C trading is also used by exporters, but its percentage is such low that it must seriously be considered to improve. According to the statistics, there is a similar trend among other main producers of the world such as India, Pakistan, Nepal and China (Iran's Ministry of Commerce, 2010).

### **Barriers, advantages and disadvantages of electronic commerce**

The most barriers for electronic commerce are related to security and reliability of transactions, credibility of suppliers, trust in their abilities and their capabilities to implement contracts legally (Skyrme, 2001). Kotler (2000) shows that the key barriers facing the growth of electronic commerce are the followings: (1) Consumers are set on buying limitedly, (2) Security, (3) Privacy, (4) Consumer backlash, (5) Ethical concerns about cookies. Other obstacles facing e-commerce include: poor organized sites, slow downloads and information access issues (Lin, 2006)

According to Kotler (2000) and Skyrme (2001), some of the benefits of electronic commerce for customers include: convenience, availability of information, less trouble, low cost, efficient process, secret shopping, and immediately access to transactions.

Electronic commerce has at least five disadvantages:

1. The biggest problem is the lack of physical communication (human interaction), which limits the physical

access to products and face to face interactions.

2. Internet communication is different from other communications because the interaction between Web site and a customer often comes through a single way by which the web site provides information for the customer unilaterally.

3. Attracting the Internet visitors is difficult because it will provide millions of sites.

4. Staggering of information imposes some pressure on customers.

5. Online users are upscale individuals and have higher living standards and they are more technically-oriented individuals, so they are more ideal for electronic and financial computer services than physical products (Sanaye'i, 2008).

### **The necessity of Iran's non-oil exports**

Undoubtedly, high growth of the country's population, less reserves and rising mining costs, uncertainty to the future world oil market and ..., will increase the country needs to foreign exchange resources. If this prediction is correct: "by continuing the growth of the current domestic consumption of the oil products, oil exports will reach to zero during the next 12 years", policy maker and planner responsibilities for developing the country's non-oil exports will be much heavier than that of now (Heshmati, 1999).

Facts and information about non-oil exports and per capita figures for the country, is very alarming for Iranian authorities. These figures compared to those of many developing countries that have similar positions, are relatively lower figures. Iran with 1.4% of the world population has only 0.3% of the world exports. If Iran wants to have even one percent of the world exports, it must export goods and services by 70 billion dollars annually (Heshmati, 1999).

According to the statistics of World Trade Organization (WTO), now the share of the handy-woven carpet trade of the global trade is decreasing gradually. As in 1970, it's trading volume was U.S. \$ 6 billion, while now it has reached to \$ 4 billion. Certainly, this can play a significant role in Iranian carpet trade (Pagheh, 1995).

In recent years, the global trade of handy-woven carpet has been increased with some oscillations. Although during these years, Iran's carpet exports have reached to the highest percentage among other countries of the world, about 30% of the world's exports, but it has had a decreasing trend totally. India has a closed competition with Iran, and it has allocated about 20% of the world's carpet trade to itself. The third country with a rate of 17% in recent decades is China. This is why the exporters must take into account new methods of trading (Hosseini, 2009).

### **The main goals of the country`s exporting**

The most important purposes of non-oil exporting are described as follows:

1. Selling surplus production: One of the issues that help enterprises to be more profitable at a micro level is utilizing economies of scale that results in surplus production in domestic markets at a macro level. Surpluses in domestic markets will force manufacturers to find new foreign markets (Heshmati, 1999).
2. Collecting currency: Since importing different goods to the country may need abundant foreign currencies, thus collecting foreign exchange resources needs exporting the country`s goods (Heshmati, 1999).
3. Promoting quality and technology: In fact, expanding exports will be followed by competition and improvements in technologies and the quality of export products (Heshmati, 1999).
4. Economic growth: The development of exports is the driving force of economic growth that needs requirements such as professional and efficient manpower, proper economic infrastructure etc. If these conditions are provided, the country's economic growth rate will be increased spontaneously (Heshmati, 1999).

### **Iran`s carpet barriers in recent decade (decade 2000)**

1. FX outsourcing: Outsourcing mainly caused reducing the non-oil exports, especially carpet`s exports, because exporters have to exchange their gained currencies of their exports to stabilized prices of the Central Bank that the government has determined (Hosseini, 2009).
2. Increase the free exchange rate: whenever the exchange rate is increased, the Rial revenue for the exporters is increased too and they tend to participate in expanding their exports. But due to outsourcing in an exchange rate established by the government, the exporters tend to export carpets illegally and there is not an incentive for them to export legally (Hosseini, 2009).
3. The luxurious nature of the carpet: Carpet is seen as a luxury and unnecessary good among importing countries and its demand depends on the economic prosperity of the importing countries. Therefore, when the importing countries suffering from economic crisis, they impose some restrictions on importing carpets and their people strongly avoid buying luxury goods such as carpet (Hosseini, 2009).
4. Domestic inflation: Rising domestic prices (inflation) affects on exports by two ways; first, it increases the foreign price of the domestic goods that must be exported, thus the demand for them is reduced. Second, the real income of the exporters will be decreased because they have to exchange their currencies gained from exports to a fixed rate that the Central Bank has

determined. Therefore, it reduces the incentives for exporting (Hosseini, 2009).

5. Production management: The involvement of various institutions and organizations in manufacturing the carpet including the Ministry of Agriculture, Handicrafts Organization, Iran Carpet Company, Welfare Organization, Imam Khomeini Relief Committee, and other parts in the carpet manufacturing sector ,on the one hand, and the lack of organized coordination and communication between these organizations ,on the other hand, have caused problems for policy making on carpet production and its exports and supervising (Hosseini, 2009).

6. Poor marketing of Iran`s exported carpet: Now traditional markets for Iran's handy-woven carpet have been saturated and demand for carpet has decreased. For this reason, high rate watched television networks and the Internet should be aimed for introducing Iranian handy-woven carpet to the global markets, and market boards must be sent to potential new markets for marketing and advertising (Hosseini, 2009).

### **The appearance of new producers and exporters**

In the past, the countries like India, Turkey, Nepal and China sold their Carpets by one third of the Iran`s carpet price, but now by exerting changes in production methods and creating facilities for facilitating their export, they can sell their carpets with a higher and in cash price than Iranian carpets (Hosseini, 2009).

### **“Exporting for importing” law**

In fact, by being passed the law in 1994, there has been created an opportunity for the importer jobbers to exploit and export carpets with a low quality in order to achieve the necessary foreign exchange for importing, so Iran`s carpet export market encountered to recession (Hosseini, 2009).

### **Strategies for development non-oil exports**

Because of all issues stated previously, new strategies must be considered for improving the status of one the most important sources of Iran exports. Becoming more active of the private sector, training needed professionals in the fields such as international banking, insurance, transportation and brokerage, and marketing and financial management are essential tools for increasing non-oil exports. Also, using effective advertising and proper ways for introducing the non-oil goods and services to global markets, reducing administrative bureaucracy and removing red tapes, strengthening

foreign trade diplomacy, creating monetary and fiscal policies consistent with trade and export policy, proper use of the currency systems and the appropriate foreign exchange policy, creating dynamic and modern information systems for exporters, proper and better insurance cashes, export guarantees, and creating quick and convenient transportation systems, are other essential tools that can help the country to develop its non-oil exports (Heshmati, 1999).

There is a long term relationship between technology and business. Electronic commerce is not a new concept, but in recent years, it has grown remarkably and unpredictably. Only one reason for such a growth can be provided: Internet. Moreover, always there has been an inverted balance between craft and industry in terms of production, meaning that wherever the production rate and the quantity has been increased, to the same level, the artistic quality has decreased and vice versa. In the handy-woven carpet industry, in addition to its becoming a common phenomenon in all towns of the country, non-normative involving of the villages and other different parts of the country in developing the industry caused irrecoverable damages to the statue of this art/industry.

Lack of proper control of the markets and lack of coordination between producers have caused the undercuts and dumping and, in some cases, producers have decreased the quality to produce cheaper carpets. Thus, by taking a transparent policy, using electronic trading systems based on B2B strategy for wholesaling to the selected representatives in the specified areas of the world, and creating a database for using a B2C strategy for retailing, can be of the best and most practical ways for applying the electronic commerce in handy-woven carpet industry (Afshar Poor, 1997).

Using the inefficient and very old techniques for marketing and informing customers, lack of accurate and comprehensive information, not familiarity of vendors with customer-based systems and so on, are the biggest problems to develop this industry.

Generally, because the handy-woven industry is a very traditional one, and manufacturing sector custodians do not feel the need to use further research and application of modern methods and management systems based on IT, the best starting point for modernization and deployment of these systems are sales, marketing and after sales service sectors and generally, contact points between the buyer and seller (Abadi, 2003).

### **The operational modal**

A set of variables for electronic marketing (independent variable) has been considered and included in the modal including applying the Internet in activities related to

customer attraction, distribution channels and marketing research.

Also, export performance (dependent variable) has been measured by using some subjective criteria and measurements including financial/economic results and strategic results. The financial/economic dimension includes both export growth and export profitability. As measuring such criteria by using objective methods is intensively difficult because companies do not give important information about their export activities, we used subjective methods such as Likret spectrum.

The strategic dimension includes entering to new and vital markets, improving the export market share, and creating a positive image for corporate products/services and its brand. These criteria have also been measured by Likret spectrum. As modal shows, the E-marketing dimensions have been extracted from the Prasad modal and the export performance dimensions have been extracted from the Sosa modal. So, it can be inferred that the research modal creates a relationship between the Prasad and Sosa modals.

As modal shows, there are many techniques for E-marketing. The most important methods have been illustrated subsequently:

1. Creating a website or an Internet-based database on the World Wide Web for the organization and introducing the addresses to the main search engines, specialized groups and Internet browsers: Web site is one of the most important electronic marketing tools, but creating a website on global networks is similar to the foundation of a store in a dead-end street that buyers will refer to it only when they highly need it and when they have complete information about it.
2. E-mail marketing: Companies can send direct emails to current and potential customers to inform them about their brands, products and services, and attract them with the lowest cost.
3. Newsgroups and chat rooms: This method is used for communicating with customers and markets, and informing them about products and brand as well as different data collection ways.
4. Banner advertising exchange and communication Program: In this way, banners are exchanged with other sites and attract many customers and visitors to the website through the Intermediates. Banner advertising is rectangular ads that usually can be seen on the upper of web sites.
5. Online promotions: Promotions, like discounts, attract new customers, maintain old customers, and will increase sales volume. Electronic coupons are of the best and most important electronic promotions.
6. The online catalog and electronic newspapers: With this method, different projects and products are being

exposed to customers to help them in selecting a preferred and better option.

7. FAQ: These are the questions that are frequently being asked. In this context, companies have created the FAQ section in their Web sites initiatively to utilize its responding to their customer's questions.

8. Cookies: Small packages of information that when you visit a specific web site, are dumped onto your hard drive. The application of cookies in marketing is that by using it, we can review and follow the behavior of a customer, collect the needed information and develop marketing strategies and programs based on the information (Husseini, 2009).

## RESEARCH HYPOTHESES

1. Using the electronic commerce is more effective than using the traditional methods, in terms of growth and profitability of the handy-woven carpet exports.

2. Using the e-commerce is more effective than using the traditional methods in creating strategic results for the Iranian handy-woven carpet.

3. Using the electronic methods is more effective than using the traditional systems in applying activities related to distribution channels to order and to make a payment of the country's handy-woven carpet, in terms of growth and profitability.

4. Using the electronic methods is more strategically effective than using the traditional systems in applying activities related to distribution channels to order and to make a payment of the country's handy-woven carpet (in terms of customer satisfaction).

5. Using the electronic methods is more effective than using the traditional systems in marketing research activities associated with the country's handy-woven carpet, in terms of growth and profitability.

6. Using the electronic methods is more strategically effective than using the traditional systems in marketing research activities associated with the country's handy-woven carpet.

## RESEARCH METHODOLOGY

The survey is a field study that studies Iran's handy-woven carpet exports. The population of the study consists of all the Iranian Carpet Exporters. According to the information obtained from the Carpet Research Center, about 400 firms and institutes are active in the handy-woven carpet exporting. In this study, to determine the sample quantity, first by distributing 10 questionnaires among the members of the population, a pilot study was conducted that by making some calculations by computer, its mean value and variance obtained respectively 3.39 and 1.28 with a 5% maximum error and a 68% estimation error, and because of the limited size of the population, the sample volume was determined 65.

A simple random sampling technique was used to select the

respondents surveyed for this study. Given the statistical population, the Iranian handy-woven carpet exporters, 65 questionnaires were randomly distributed between the handy-woven carpet exporters in Isfahan, Tehran and some other cities of the country.

There are two kinds of variables in this research including dependent and independent variables. Independent variables of the research include the Internet, information technology and electronic commerce. The dimensions of the independent variables include: Customer related activities, activities related to distribution channels as well as activities related to marketing research. The components of each dimension have been mentioned in the operational model. Carpet export performance is the dependent variable.

In this research, according to the literature, export performance criteria measured by the objective and subjective criteria implying on sales, profits, and markets. Between these variables, two dimensions including financial/economic results and strategic results were selected to measure export performance that their variables have been shown in the model.

Secondary data was collected based on the findings of published papers, articles, books, prior studies, and the World Wide Web. The primary data collection was carried out by using observation, structured, deep or non structured interviews, and a self-designed questionnaire that this adopted instrument comprised three sections, the first section covered the demographic information (gender, age, experience, current position).

The second section contained items measuring electronic commerce, and the third section also measured handy-woven carpet through some items. Five Likert-type scales were used to score the responses. For collecting information, we used all.

Statistical tools such as T-student (to determine whether there is a significant difference between the average of the population and that of the sample) and Chi square (to review the lack of significant differences between the observed frequency and expected frequency of tests) as well as Pierson correlation and multiple regression analysis test were used to test the hypothesis. To test research questions, some hypotheses and a conceptual model were designed to examine the relationship between electronic commerce and handy-woven carpet exports. Otherwise, we transformed the research hypotheses to statistical hypotheses to test them.

Statistical Package for Social Sciences (SPSS) and EXCEL were used to analyze the data. Descriptive techniques such as; frequencies, percentages, means, standard deviation (Std.) and coefficient of variation (CV) were used to describe the variables. Pierson correlation and multiple regression analysis were used to test hypothesis of the study.

To ensure the validity of the instrument tool, after designing the questionnaire and conducting a pilot study, it was given to some expert referees from some reputed universities, and appropriate techniques such as Consensus or content and translation validity were used. The reliability of data collected instrument was measured by using Cronbach's alpha coefficient; the reliability test was conducted to check for inter-item correlation in each of the variables in the questionnaire. The test results are as follows: Cronbach alpha for predict variable = 0.82, Cronbach alpha for dependent Variable = 0.83, Cronbach alpha for over all instruments = 85/90% which approached to the acceptable limit. Tables 1 to 4 shows results gained using the computer.

## TESTING HYPOTHESES AND RESULTS

In this section by using statistical methods and the

**Table 1.** One-sample statistic.

	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Std. error mean</b>
F1	65	3.6825	0.8154	0.1465
F2	65	3.5422	0.8702	0.1563
F3	65	3.4824	0.7907	0.1420
F4	65	3.5372	0.8124	0.1352
F5	65	3.3321	0.7828	0.1523
F6	65	3.2834	0.8232	0.1442

**Table 2.** One-sample test.

<b>Test value = 0</b>						
	<b>T</b>	<b>Df</b>	<b>Sig. (2-tailed)</b>	<b>Mean difference</b>	<b>95% confidence interval of the difference</b>	
					<b>Lower</b>	<b>Upper</b>
F1	25.522	64	0.000	3.6825	3.0221	4.8145
F2	22.262	64	0.000	3.5422	3.2671	3.6384
F3	25.182	64	0.000	3.4824	3.4021	3.8228
F4	24.232	64	0.000	3.5372	3.3544	3.8752
F5	22.151	64	0.000	3.3321	3.2452	3.5821
F6	24.215	64	0.000	3.2834	3.0478	3.6615

**Table 3.** Multiple regression analysis between e-marketing dimensions and economic/ financial results.

<b>Result 95</b>	<b>Sig</b>	<b>B non standard</b>	<b>B standard</b>	<b>Variables</b>
Meaningful	0.002	0.556	0.570	X1
Meaningful	0.02	0.435	0.384	X2
Meaningful	0.03	0.325	0.460	X3

collected data, hypotheses were tested. As shown in Table 1, based on the mean value results for all the hypotheses, the amounts emerged from the results are higher than the expected mean which is 3. The results emerged from T-test for the hypotheses are 3.673, 1.953, 2.523, 3.245, 2.859, and 3.825, respectively that compared to the critical amount (1.645) are high enough. It means that all hypotheses are accepted. The mean value for each question emerged from chi-square test is between 2.104 to 4.880 that, except for using electronic ID, all amounts are higher than expected mean which is 3.

The amount gained for each question which is between 26.48 to 60.33 shows that they are more than the critical amount which is 9.49, both discussion about Chi-square test show that using e-commerce is more effective than using traditional tools for exporting carpet. To answer the question "which of the three dimensions of e-marketing is more effective in gaining the financial/economic and strategic results", multiple regression was used.

As the Table 3 shows, the relationships between "using

the Internet in activities related to attracting customers, distribution channels and marketing research" and "financial/economic results" are meaningful. As the Beta coefficients show, the first variable (using the Internet in activities related to attracting customers) has the most effect on financial/economic results of exporting.

Table 4 shows the multiple regression coefficients between the three dimensions of e-marketing and strategic results. As seen, the relationships between "using the Internet in activities related to attracting customers, distribution channels and marketing research" and "strategic results" are meaningful.

As the Beta coefficients show, the second variable (using the Internet in activities related to distribution channels) has the most effect on strategic results of exporting. As R square gained for the main hypothesis is 78%, by using the Pierson correlation, it means that there is a significant relationship between electronic commerce and carpet exporting.

The R square gained for all sub-hypotheses are 0.79,

**Table 4.** Multiple regression analysis between e-marketing dimensions and strategic results.

Result 95	Sig	B non standard	B standard	Variables
Meaningful	0.102	0.322	0.296	X1
Meaningful	0.011	0.552	0.438	X2
Meaningful	0.02	0.245	0.282	X3

0.70, 0.75, 0.74, 0.35, and 0.41, respectively. It means that the first and the second hypothesis relying on investigating the effect of using electronic trading on increasing handy-woven carpet exports, compared with traditional methods, were confirmed both economically and strategically by 95% reliability.

In other words, it was concluded that using the electronic commerce for exporting is more effective than using traditional methods in increasing growth and profitability of the handy-woven carpet exports. The same conclusion was obtained for strategic purposes too.

The third and fourth hypothesis testing showed that, except for selling handy-woven carpet through traditional exhibition and personal sales, in other cases, the use of electronic commerce for the purposes of growth and profitability as well as strategic goals, is more effective than using traditional methods. In other words, the effect of using electronic channels to build market shares, awareness and an image for the carpet is more effective than using traditional channels.

The fifth and sixth hypothesis testing also showed that the use of electronic commerce in the activities related to marketing research of the handy-woven carpet is more effective than using traditional methods both economically and strategically.

In other words, making marketing research by using advanced electronic systems such as E-mail is more effective than making traditional research, both in decreasing costs of the exports and in building market shares, awareness and an image for the handy-woven carpet.

The results of statistical analysis show that all hypotheses have been accepted by 95% reliability. Therefore, it can be concluded that the use of electronic trading, compared with traditional methods, is more effective in increasing the carpet exports both economically and strategically.

Also, electronic advertising, receiving the ordered carpets through electronic channels, and making payments through electronic tools by customers are more effective than using traditional methods in customer satisfaction, except for buying carpets in traditional exhibitions and ordering the carpets in person.

It can also be concluded that providing carpet ID in traditional markets has no positive effect on increasing its exports.

## RECOMMENDATIONS TO STAKEHOLDERS BASED ON HYPOTHESES

1. Providing proper training and specialized courses for exporters and providing an admission to launch trading with final consumers to attract individual consumers given to the low rate business to consumer trading (B2C) among the carpet exporters (only 6/4%).
2. Using the Internet and electronic advertising to give information and knowledge to the customers in which the theme and the content of the ads firstly, be consistent to traditional ones in terms of color, size, density, material, design, Knots and other characteristics of the handy-woven carpet, secondly, These types of advertising should be available for customers who visit the Internet, by e-mail or by presenting them in high rate visited sites along with the carpet design.
3. More using of the special and permanent exhibitions which concentrate on particular aspects of the Iranian handy-woven carpet. Given to the more positive effect of these exhibitions than electronic advertising, as well as a high rate involving of the carpet exporters in the B2B marketing (more than 87%), using the exhibitions can attract major wholesalers.
4. Removing the traditional carpet ID because of its procedural aspect and causing the costs for exporters, or continuing it as an electronic ID with a low cost for buyers to access and the information would be exactly the same as the characteristics of the carpet.
5. Creating credit card systems in which most of the banks and buyers would have to make a payment through these systems rather than open accounts.

## REFERENCES

- Abadi JHK (2003). Investigating the country's Carpet position in the economic development and reasons for its declined share of global carpet exports. The first seminar of Iran's National Carpet Research.
- Abdolshah M (2003). New methods of marketing in carpet exports. The first national seminar of Carpet Research.
- Afshar Poor F (1997). Investigating the effect of foreign exchange policies of the Iran's Central Bank on the carpet exports over 1991-1995, Master thesis of management. Tehran University.
- aspects. Institute of Commercial Studies and Research. A report presented in an inner magazine.
- Cameron S, Khair-Uz-Zaman (2004). Export Function Estimates for the Pakistan Carpet Industry.
- Ghosh S (1998). Marketing business sense of The Internet. Harvard

- Bus. Rev.J., pp.126-135.
- Heshmati F, Homeira A (1999). E-commerce concepts. An International Conference on Internet and electronic cities. Kish.
- Hosseini KSH, Shahryar A (2006). E-commerce business, a managerial approach. Tehran. The first Printing. Publisher: Samt.
- Husseini SA, Mostafa GH, Hossein A (2009). Investigating the effect of using electronic marketing on the export performance of the excellent exporters in the industry sector over 1989 1995. *Daneshvar J.*, 15: 32.
- Iran`s Ministry of Commerce (2010). Getting overview familiarization with the country's exports and some of its informational-commercial
- Kotler Ph, Gary A (2006). *Marketing principles*. Translation: Bahman Foroozandeh. Isfahan. Publisher: Atropat.
- Mc Quitty S, peter RT (2008). Selling home entertainment on the Internet: an overview of a dynamic market place. *Consumer Marketing J.*, 17(Ahmadi, 2002):233-248.
- Pagheh NM (1995). A new way for the art of weaving carpets. *Salehin Roosta magazine*. 13:116.
- Sanaye`i A (2007). E-commerce in the Third Millennium, The first Printing. Isfahan University. Jihad Press.
- Sanaye`i A (2008). *Marketing and e-commerce*. The third Printing, Isfahan University, Jihad Press.
- Skyrme DJ (2001). *Capitalizing on knowledge from E-commerce to K-Butterworth-Heine Mann*. Oxford.
- Srivastava S, Goswami KK (2007). Handmade Carpets: The Potential for Socio-economic Growth. *Innov. J.: The Public Sector Innovation Journal*, 12(2):5.
- Tapscott D (2007). *Creating value in the Network Economy*. Harvard Business school press. Boston, MA.
- Zare M (2003). Applying new methods of electronic commerce in the handmade carpet industry. The first seminar of Iran`s National Carpet Research.