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BARRIERS TO THE APPLICATION OF E-COMMERCE IN STONE EXPORT (CASE STUDY OF LORESTAN PROVINCE)

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Abstract: *This study is aimed understanding the barriers to the application of e-commerce in the field of stone export in Lorestan province. This is a descriptive survey of correlation type. The statistical population is comprised of 365 factory managers active in the stone industry in Lorestan province, 187 of which were selected as sample using Cochran formula. A questionnaire was used to collect the required data.*

The results show that there is a significant relationship between hardware problems, software problems, problems arising from information technology, manpower problems including instructional, cultural and behavioral problems, problems arising from juridical, security and legal infrastructures and also informational infrastructures and customs and commercial problems; and lack of the application of e-commerce in developing stone export in Lorestan province.

Efforts and planning in both micro and macro levels towards development of e-commerce for all the factories and industries of the country and attention to the required infrastructures including hardware, software, legal, juridical and commercial laws infrastructures are among the suggestions proposed based on the findings.

Keywords: *e-commerce, export, stone, Lorestan province.*

INTRODUCTION

One of the ways towards economic development in oil exporting countries like Iran, with a mono-product oil-oriented economy, is fast movement towards diversification and increasing the potential for non-oil exports; and it would not be possible without a comprehensive study of the factors affecting non-oil exports. In doing so, although examining imports and exports is performed within the relative price framein many of the developed countries (most of the analyses have also not stepped beyond this frame in our country), it seems that institutional, scientific, technological and administrative conditions would have a deeper effect on export in Iran's economy.

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Existence of alternative goods, cost of alternative goods, quality of alternative goods and buyer's tendency towards alternative goods are considered as factors affecting the intensity of competition. In new markets that have different conditions from local markets, and with different tastes and preferences of consumers, the product can encounter some alternatives. Alternative products limit potential capabilities of every industry and allow increase in the price of goods to a certain point, unless the quality of the goods is improved or there is some modifications in it in which case growth and increase of income would be possible. Higher attraction of the price of alternative goods often limits the profitability of the main industry. If the relative price of alternative products and the costs of producing such products are decreased, competition would intensify and pressures arising from competition would be increased in a market with alternative products. Alternative goods not only limit profitability in normal conditions, but also may decrease the profit of the relative industry at the time of economic prosperity. Some of the determinants for relative goods include: relative price, performance of alternative goods, buyers' tendency towards alternative goods, etc. (Robinson, 2005)

International Business Machines (IBM) focused most of its efforts and activities on the hardware section of the industry for decades: first on main frame computers and then on personal computers, and parallel with development of internet in mid 1990s, on servers and the related equipment. Target customers of IBM for those hardware were mainly organizations rather than individual consumers and usually large organizations needing a huge power and capacity for data processing and also having the required and sufficient financial power to buy those equipment. However, this company did not forget minor consumers or companies, but relied on independent retailers such as Circuit City and on value-added resellers to focus most of its sales and marketing activities on large organizations while accessing those markets (Walker *et al.*, 2004, p.25).

Compared to traditional market, in internet market for the commercial organization there is the challenge of facing more competitors and less customer loyalty. Therefore, attracting, earning trust, satisfaction and retention of customers in e-commerce is a significant and difficult problem for a commercial organization (Elahi *et al.*, 2009, p. 28).

Nowadays, export is one of the important indicators of development in developed countries. As a developing country, Iran cannot play a significant role in global trade and economy simply relying on mono-product and vulnerable economy of oil; and therefore should coordinate and adjust its economy quickly with global changes in order to succeed in economic development and establishment of a rational and organic relationship with foreign trade and development of non-oil exports.

According to the above, this study is intended to answer this question:What obstacles prevent the use of e-commerce by manufacturers is the stone industry in Lorestan province?

METHODOLOGY

This is a descriptive survey study of correlation type and practical in terms of target. Both library and field methods were used to perform the study; that is to explain the theoretical foundations and literature review, both printed and non-printed library resources (Internet, databases) were used and on the other hand, the questionnaire is used to collect the required data. Descriptive statistics such as tables and diagrams is used for descriptive expression of the information, and t-test statistical tests are used for inferential statistics in this research.

RESEARCH HYPOTHESES

1. There is a relationship between hardware problems and lack of application of e-commerce in stone industry.
2. There is a relationship between software problems and lack of application of e-commerce in stone industry.
3. There is a relationship between customs and commercial problems and lack of application of e-commerce in stone industry.
4. There is a relationship between problems arising from internet technology and lack of application of e-commerce in stone industry.
5. There is a relationship between manpower problems including instructional, cultural and behavioral problems and lack of application of e-commerce in stone industry.
6. There is a relationship between problems arising from juridical, legal and security infrastructures and lack of application of e-commerce in stone industry.
7. There is a relationship between problems arising from informational infrastructures and lack of application of e-commerce in stone industry.

THEORETICAL FOUNDATIONS

E-commerce

In the late 1940s, organizations were seeking a way to manage their internal processes. They wanted to find a better way to serve the customer and to enhance the effectiveness, and fortheir internal control.The result of these researches led to the design of a general theory, today known as marketing. In this level, management fully accepts the integrated marketing management concept and is driven towards the dual goals of customer-orientation and profitable sales volume, and all the relevant obligations are performed centralized as marketing management (Ranjbarian, 1999, pp. 9-10).

Marketing deals with the daily lives of all.Marketing is a tool with which standard of living is created and delivered to the people. Many people confuse marketing with sales, but it should be noted that marketing exists both before and after the event of sale. In fact, marketing combines activities such as marketing research, production, distribution, pricing, promotion, personal selling and etc. together, aiming at understanding, serve and meet the needs of consumers and at the same time meet the organization's objectives (Kotler, 1998, p. 57).

In fact, a large part of e-commerce requires more knowledge than capital; in addition, much of the technological knowledge and related to the Internet, is available via websites or books at no cost. In terms ofcommerce,no company in the world can claim having long experience in e-commerce.In other words, all are novice in this field.

Since human resources is one of the major costs of an internet strategy, developing countries with cheap manpower have more advantages in this field (Fanai Najaf Abadi, 2006, p. 84).

Nowadays, development of export as one of the challenges for the managers of manufacturing and commercial organizations, demands new solutions and methods.In this regard, the importance ofinternet ande-commerceto reachpotential customersin international marketsis undeniable. Chaffi, one of the experts in the field of e-commerce, defines it as: "E-commerce is the purchase andsale of products, services and information through the internet network" (Chaffi, 2002, p. 22).

In a business environment constantly getting more complex and more competitive, gaining satisfaction from the consumers of goods and services is turning into the main purpose of the companies. Satisfaction of consumers of goods and services is more than just a price effect on efforts made at the company. This not only makes employees work, but also is considered a source of revenue for the company (Webster, 1993, p. 54).

In the early twentieth century, before anybody having any comment on marketing, some of the leading companies detected the necessity of gaining accurate and objective market information for decision-making.At that time, managers used to obtain their limited information through vendors andpersonal contact with the customers.In the absence of ongoing contact with the customers, inevitably required information were obtained from other sources, including vendors.As a result, most of the information was incomplete and lacked sufficient accuracy since each vendor considered the issue differently and management attention on consumer goods was drawn towards the feelings and reactions of employees, families and friends (Ranjbarian, 1999, p. 85).

Market analysis is usually performed based on customer, competitors and their analysis to achieve strategic judgments about a market (and sub-market) and its dynamism. One of the primary purposes of market analysis to determine the

attractiveness of a market (or sub-market)compared to current and potential competitors. Attractiveness of the market means the potential profit of the market calculated by the company through long-term investment returns and provides important data for decision-making in product - market investment. All competitors are present in this main framework. Suitability or lack of suitability of market for a particular company is a different but related question. This is not only related to attractiveness but also to how to adapt to the strengths and weaknesses of the company and competitors (Achor, 2005, p. 105).

Taking advantage of the commercial operating strategy, revolution in information and communications technology and removal of trade barriers at national and international levels,global business has had a growing trendin recent decades.At the present time, more and more countriesare encouragedfor participationand presence in global markets so that theworld trade share of some countries has surpassed their world production share.Today, the necessity for active participation in global trade needs not to be justified, and as the world is turning into a global village, it has become an obvious principle.

One obvious way to create growth, is to move along market segments that have the potential power of new growth, but these segments have been overlooked or are not in favorable.For example, Texas Instruments designed a calculator specifically for women; in fact, a segment of the marketthat was neglected in developed-products categorization, 60% of buyers of which were women. The new calculator called Nuance, which is similar to a compact keyboard with buttons purple or beige, was released.

Its soft buttons were designed in such a way that when working with long nails no problem is arisen because their designprevents contact with the two buttons simultaneously.Some of the industries sought their growth in the international arena.For example, Barbie found new markets in Europe and Japan for itself (Achor, 2005, p. 330).

Importance of E-commerce

E-commerce can be useful for so many different reasons.For example, it provideseasy access to products that may not be available without internet.In addition, e-commerce is an easy way to do the transactions, although it is sometimes more vulnerable than its traditional form, but it can meet the needs and requirements of consumers to a high degree (Svantesson, 2010).

"E-commerce" is a means for the exchange of information, goods and services between businesses and their customers electronically.This trade is used without the use of paper documents and computer technology, telecommunications and internet to exchange goods, advertise products and provide services to global markets (Kiggundu, 2002).

It is predicted that the value of e-commerce would increase from 354 billion dollars in 2001 to over 100 trillion dollars in 2005. Besides, according to the published statistics, e-commerce in US has been over 1.6 trillion dollars, which is expected to reach7.1 trillion dollars in 2006.E-commerce in Malaysia was 13.7 billion dollars in 2002, which is predicted to be more than 158 billion dollars in 2006. It is obvious that reaching such high volumes of dollar in e-commerce will be possible based on the planning and use of business opportunities. Companies such as Yahoo, E-bay, Amazon and others could gain a great value in a short period of time. The statistics show that during the last 5 years of the last century, the value of some of these companies is increased more than 200 times (Feasibility Report and e-commerce policy of the Islamic Republic of Iran, *www.irtp.com*).

The more customers have access to the internet, the more important role internet plays for companies. A company can perform the following activitiesthrough the Internet:

1. After the presence in the internet, a company can use it as a tool for advertisement and thus create a good image for the company as well as its goods and services.
2. The company can provide information about its products and services, their prices, location and access, how to order, for the customers and also make it possible for them to connect to other useful sites.
3. The company can connect with customers via the internet and interact with them, receive customer inquiries, respond to their complaints and have feedback.
4. Providingafter-sales services is another activity that the company can do over the internet.
5. The most important aspect of the internet for the company is sales to the customer and this happens when the transaction is done on the internet and customer's payment is received by the company (Esmaeilpour, 2010, p. 391).

HYPOTHESES TESTING

Testing the First Research Hypothesis

There is a relationship between hardware problems and lack of application of e-commerce in stone industry.

According to what can be seen in Table 1, the significance level is close to 0.000 that is less than 0.05 (sig<0.05). As t-statistic is not between 1.96 and -1.96 (that is more than 1.96), it is concluded that the median of hardware problems dimension

Table 1
One-sampleT-test for the hardware problems dimension in the lack of application of e-commerce

T-Test						
Confidence Interval of 95%		Mean Difference	Significance Level	Degree of Freedom	t-statistic	Dimension
Upper Limit	Lower Limit					
9.5525	8.5364	9.04444	0.000	134	35.208	Hardware Problems

has a significantdifference with 3. According to the values in two high and low columns, both of which are positive, we can say that the hardware problems dimension in the lack of application of e-commerce is at a high level and therefore the hypothesis is confirmed.

Testing the Second Research Hypothesis

There is a relationship between software problems and lack of application of e-commerce in stone industry.

Table 2
One-sampleT-test for the software problems dimension in the lack of application of e-commerce

T-Test						
Confidence Interval of 95%		Mean Difference	Significance Level	Degree of Freedom	t-statistic	Dimension
Upper Limit	Lower Limit					
13.5013	12.5728	13.03704	0.000	134	55.538	Software Problems

According to what can be seen in Table 2, the significance level is close to 0.000 that is less than 0.05 (sig<0.05). As t-statistic is not between 1.96 and -1.96 (that is more than 1.96), it is concluded that the median of software problems dimension has a significant difference with 3. According to the values in two high and low columns, both of which are positive, we can say that thesoftware problems dimension in the lack of application of e-commerce is at a high level and therefore the hypothesis is confirmed.

Testing the Third Research Hypothesis

There is a relationship between customs and commercial problems and lack of application of e-commerce in stone industry.

Table 3
One-sampleT-test for the customs and commercialproblemsdimension in the lack of application of e-commerce

T-Test						
Confidence Interval of 95%		Mean Difference	Significance Level	Degree of Freedom	t-statistic	Dimension
Upper Limit	Lower Limit					
16.1184	15.1705	15.64444	0.000	134	65.281	Customs and Commercial Problems

According to what can be seen in Table3, the significance level is close to 0.000 that is less than 0.05 (sig<0.05). As t-statistic is not between 1.96 and -1.96 (that is more than 1.96), it is concluded that the median of customs and commercial problems dimension has a significant difference with 3. According to the values in two high and low columns, both of which are positive, we can say that thecustoms and commercial problems dimension in the lack of application of e-commerce is at a high level and therefore the hypothesis is confirmed.

Testing the Fourth Research Hypothesis

There is a relationship between problems arising from internet technology and lack of application of e-commerce in stone industry.

Table 4
One-sampleT-test for problems arising from internet technology dimension in the lack of application of e-commerce

T-Test						
Confidence Interval of 95%		Mean Difference	Significance Level	Degree of Freedom	t-statistic	Dimension
Upper Limit	Lower Limit					
17.7060	16.5310	17.11852	0.000	134	57.631	Problems arising from Internet Technology

According to what can be seen in Table4, the significance level is close to 0.000 that is less than 0.05 (sig<0.05). As t-statistic is not between 1.96 and -1.96 (that is more than 1.96), it is concluded that the median of problems arising from internet technology dimension has a significant difference with 3. According to the values in two high and low columns, both of which are positive, we can say that theproblems arising from internet technology dimension in the lack of application of e-commerce is at a high level and therefore the hypothesis is confirmed.

Testing the Fifth Research Hypothesis

There is a relationship between manpower problems including instructional, cultural and behavioral problems and lack of application of e-commerce in stone industry.

Table 5
One-sampleT-test for manpower problems including instructional, cultural and behavioral problemsdimension in the lack of application of e-commerce

T-Test						
Confidence Interval of 95%		*Mean Difference*	*Significance Level*	*Degree of Freedom*	*t-statistic*	*Dimension*
Upper Limit	*Lower Limit*					
26.6068	25.1858	25.89630	0.000	134	72.087	Manpower Problems including Instructional, Cultural and Behavioral

According to what can be seen in Table5, the significance level is close to 0.000 that is less than 0.05 (sig<0.05). As t-statistic is not between 1.96 and -1.96 (that is more than 1.96), it is concluded that the median of manpower problems including instructional, cultural and behavioral problems dimension has a significant difference with 3. According to the values in two high and low columns, both of which are positive, we can say that themanpower problems including instructional, cultural and behavioral problems dimension in the lack of application of e-commerce is at a high level and therefore the hypothesis is confirmed.

Testing the Sixth Research Hypothesis

There is a relationship between problems arising from juridical, legal and security infrastructures and lack of application of e-commerce in stone industry.

Table 6
One-sampleT-test for problems arising from juridical and security infrastructuresdimension in the lack of application of e-commerce

T-Test						
Confidence Interval of 95%		*Mean Difference*	*Significance Level*	*Degree of Freedom*	*t-statistic*	*Dimension*
Upper Limit	*Lower Limit*					
15.0301	13.9625	14.49630	0.000	134	53.711	Problems arising from Juridical, Legal and Security Infrastructures

According to what can be seen in Table 6, the significance level is close to 0.000 that is less than 0.05 (sig<0.05). As t-statistic is not between 1.96 and -1.96 (that is

more than 1.96), it is concluded that the median of problems arising from juridical, legal and security infrastructures dimension has a significant difference with 3. According to the values in two high and low columns, both of which are positive, we can say that theproblems arising from juridical, legal and security infrastructures dimension in the lack of application of e-commerce is at a high level and therefore the hypothesis is confirmed.

Testing the Seventh Research Hypothesis

There is a relationship between problems arising from informational infrastructures and lack of application of e-commerce in stone industry.

Table 7
One-sampleT-test for problems arising from informational infrastructures dimension in the lack of application of e-commerce

T-Test						
Confidence Interval of 95%		*Mean Difference*	*Significance Level*	*Degree of Freedom*	*t-statistic*	*Dimension*
Upper Limit	*Lower Limit*					
10.9679	10.0692	10.51852	0.000	134	46.299	Problems arising from Informational Infrastructures

According to what can be seen in Table7, the significance level is close to 0.000 that is less than 0.05 (sig<0.05). As t-statistic is not between 1.96 and -1.96 (that is more than 1.96), it is concluded that the median of problems arising from informational infrastructures dimension has a significant difference with 3. According to the values in two high and low columns, both of which are positive, we can say that theproblems arising from informational infrastructures dimension in the lack of application of e-commerce is at a high level and therefore the hypothesis is confirmed.

DISCUSSION AND CONCLUSION

The findings show that the experience of managers of stone factories in Lorestan province is in a diverse range from 1 year to 35 years, among which 26 persons (19.3%) with 15 years, 17 persons (12.6%) with 17 years and 15 persons (11.1%) have the highest management experience respectively.

From a total of 135 responses received, 29 companies (21.5%) have no computer, 63 companies (46.7%) have 1 computer, 27 companies (20%) have 2 computers, 3 companies (2.2%) have 3 computers,1 company (0.07%) has 4 computers, 5 companies (3.7%) have 5 computers,6 companies (4.4%) have 6 computers and 1 company (0.07%) has 7 computers.

The first hypothesis examines the relationship between hardware problems and lack of application of e-commerce in stone industry in Lorestan province. Hypothesis testing revealed that the significance level is close to 0.000 that is less than 0.05 (sig<0.05). As t-statistic is not between 1.96 and -1.96 (that is more than 1.96), it is concluded that the median of hardware problems dimension has a significant difference with 3. According to the values in two high and low columns, both of which are positive, we can say that the hardware problems dimension in the lack of application of e-commerce is at a high level and therefore the hypothesis is confirmed; that is if hardware problems increases in companies, application of e-commerce will be in trouble at the same degree. The findings of this study is consistent with the findings of Yati et al. (2005), Apiodi et al. (2004), Hashemi (2009), and SabbaghKermani, Majid, Esfidani, Mohammad Rahim (2006).

The second research hypothesis was tested about the relationship between software problems and lack of application of e-commerce in stone industry. The results showed that the significance level is close to 0.000 that is less than 0.05 (sig<0.05). As t-statistic is not between 1.96 and -1.96 (that is more than 1.96), it is concluded that the median of software problems dimension has a significant difference with 3. According to the values in two high and low columns, both of which are positive, we can say that thesoftware problems dimension in the lack of application of e-commerce is at a high level and therefore the hypothesis is confirmed; that isif software problems increases in companies, application of e-commerce will be in trouble at the same degree. This result is consistent with the results of Bacchus (1998) studies.

The third research hypothesis was tested about the relationship between customs and commercial problems and lack of application of e-commerce in stone industry. The results showed that the significance level is close to 0.000 that is less than 0.05 (sig<0.05). As t-statistic is not between 1.96 and -1.96 (that is more than 1.96), it is concluded that the median of customs and commercial problemsdimension has a significant difference with 3. According to the values in two high and low columns, both of which are positive, we can say that thecustoms and commercial problemsdimension in the lack of application of e-commerce is at a high level and therefore the hypothesis is confirmed; that isif customs and commercial problems increases in companies, application of e-commerce will be in trouble at the same degree.

The fourth research hypothesis was tested about the relationship between problems arising from internet technologyand lack of application of e-commerce in stone industry. The results showed that the significance level is close to 0.000 that is less than 0.05 (sig<0.05). As t-statistic is not between 1.96 and -1.96 (that is more than 1.96), it is concluded that the median of the problems arising from internet technology dimension has a significant difference with 3. According to the values in two high and low columns, both of which are positive, we can say that

theproblems arising from internet technology dimension in the lack of application of e-commerce is at a high level and therefore the hypothesis is confirmed; that isif problems arising from internet technology increases in companies, application of e-commerce will be in trouble at the same degree. This result is consistent with Botazoni (1997), Fathi and Azizi (2007).

The fifth research hypothesis examines the relationship between manpower problems including instructional, cultural and behavioral problemsand lack of application of e-commerce in stone industry. The results showed that the significance level is close to 0.000 that is less than 0.05 (sig<0.05). As t-statistic is not between 1.96 and -1.96 (that is more than 1.96), it is concluded that the median of manpower problems including instructional, cultural and behavioral problems dimension has a significant difference with 3. According to the values in two high and low columns, both of which are positive, we can say that themanpower problems including instructional, cultural and behavioral problemsdimension in the lack of application of e-commerce is at a high level and therefore the hypothesis is confirmed; that isif manpower problems including instructional, cultural and behavioral problems increases in companies, application of e-commerce will be in trouble at the same degree. The result derived from this study is consistent with Elahi et al, (2005).

The sixth research hypothesis was tested about the relationship between problems arising from juridical, legal and security infrastructuresand lack of application of e-commerce in stone industry. The results showed that the significance level is close to 0.000 that is less than 0.05 (sig<0.05). As t-statistic is not between 1.96 and -1.96 (that is more than 1.96), it is concluded that the median of problems arising from juridical, legal and security infrastructuresdimension has a significant difference with 3. According to the values in two high and low columns, both of which are positive, we can say that theproblems arising from juridical, legal and security infrastructures dimension in the lack of application of e-commerce is at a high level and therefore the hypothesis is confirmed; that isif problems arising from juridical, legal and security infrastructures increases in companies, application of e-commerce will be in trouble at the same degree.

The seventh research hypothesis examines the relationship between problems arising from informational infrastructures and lack of application of e-commerce in stone industry. The results showed that the significance level is close to 0.000 that is less than 0.05 (sig<0.05). As t-statistic is not between 1.96 and -1.96 (that is more than 1.96), it is concluded that the median of problems arising from informational infrastructures dimension has a significant difference with 3. According to the values in two high and low columns, both of which are positive, we can say that theproblems arising from informational infrastructures dimension in the lack of application of e-commerce is at a high level and therefore the hypothesis is confirmed.

That is if problems arising from informational infrastructures increases in companies, application of e-commerce will be in trouble at the same degree. It is consistent with Hosseini *et al.* (2008), and Haj Karimi *et al.* (2009).

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