

## **THE ROLE OF E-CUSTOMS IN PROMOTION OF LORESTAN-IRAN CUSTOMS**

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### **Abstract**

This research presents role of e-customs in promotion of Lorestan-Iran customs. Based on the purpose, the study is an applied research; and with respect to the nature as well as the data collection method, it is a descriptive- ex post facto research. Since the researcher studies the effects of e-customs on Lorestan customs one year after implementation of e-customs in this organization, the research is considered as an ex post facto research. The research population consists of managers, experts, exporters, importers, and people active in Lorestan customs that they have being cooperated with this organization at least for 2 years. According to the statistics obtained from Lorestan customs statistics and information department in 2013, the number of research population has been 170 people. The results showed that e-customs enhances the legal exports and imports of goods and makes the process to be performed faster and better, because it provides faster and easier access to information about the various costs and the current rules of exports and imports as well as stronger and more comprehensive communications between the relevant departments involved in customs processes. It is obvious that the e-customs users believe in positive efficacy of it, because they have experienced the beneficial results of such a technology in a complex organization like customs.

**Keywords:** E-customs, Promotion, Customs, Technology, Information Technology

### **Introduction**

Information technology (IT), the youngest but the most influential human technology, has revolutionized the society and economy so that its effects have been spread in all countries, especially developing ones, in the least possible time; also, due to the technological achievements of the revolution, various phenomena such as e-government, e-commercial, e-

learning, e-health, and so forth have emerged in the areas of human activities. Due to the progressive electronic experiences, developed countries have been innovating new functionalities and features in the field of e-commerce over time; as a result, they use its growing and increasing benefits. Developing countries have been also able to benefit from the arising capacities of e-experiences in the case of realizing the importance of information technology, especially e-commerce. However, it is crucial for both groups to be aware of all aspects of the subject (Mozhdehi et al., 2007).

Utilization of information technology is one of the necessary steps to enhance the efficiency of business in the national economy. To achieve the goal of increasing efficiency, it is needed for actions on two main fields including trade information and facilitation. Trade information has increased competition and thereby enhanced productivity through breaking the monopoly of information and is considered as a big step in social justice. Regarding the trade facilitation, it is needed to take advantage of modern methods of commerce such as barcodes, standards of electronic data interchange, and electronic and paperless transactions. One of the important features of e-commerce is to streamline work procedures and reduce the cost of business operations (Babagoli, Khanlarzadeh, 2010).

The commercial exchanges among companies, individuals with each other, and individuals with companies and governments are rapidly reshaping the traditional way (which was mainly based on the exchange of paper documents) into transactions through electronic information systems. E-commerce has created a new arena of competition because of its speed, efficiency, cost reduction, and exploitation of fleeting opportunities so that in the case of falling behind the evolution, isolation in the global economy will be resulted.

E-commerce development brings out great benefits in terms of reducing costs, increasing exports, creating jobs, and increasing production through reducing transaction costs, accelerating transactions, strengthening the competitive position of Iran in the world, taking advantage of fleeting opportunities in export, and timely purchasing goods from overseas (Babagoli, Khanlarzadeh, 2010).

### **Problem Statement**

One of the most important factors in economic development is the economic growth or in other words, having wide foreign trade exchanges. Currently, world trade share of GDP is close to 30 percent that this share is expected to reach 50 percent in 2020. Quick and low-cost commercial transactions are considered as one of the significant factors increasing the volume of trade.

Customs is an organization that considers simultaneously two main goals of facilitating trade and enforcing laws and regulations in its current tasks. One of the major challenges facing customs is to achieve these two goals simultaneously. Utilization of information technology helps customs to achieve the goals (Polanski, 2002). In fact, e-commerce as the most important yield of this modern technology can provide appropriate opportunities for countries in their international and domestic transactions; among the opportunities, it is possible to cite the trade facilitation and increase in global competition. Today in business, it has been started to move from the traditional trade into new ones due to increasing development and growth of modern communication tools and technologies, and replacing many traditional activities (Dezh Pasand, 2005).

On the other hand, considering the economic situation in Iran, strategies such as export mutation (which balances Iran's relative share of world population with its relative share of

global trade) have been proposed. In this regard, e-commerce is one of the tools that can help the companies of this country. According to the above mentioned, e-commerce should be viewed seriously by companies in the country.

So applying an integrated approach along with a computer system which helps to fast and accurate determination of goods value is inevitable. Iran's customs has been equipped to advanced computer systems such as ASYCUDA world and web- foundation value system which is designed as a 3-tier application. These systems will help to effectively realize the e-customs plans in Iran.

Utilization of information technology in customs has many advantages; in fact, it helps to facilitate all customs operations, calculations, and supervisions as well as increases the efficiency of goods clearance; as a result, it increases the quality of customs services and enhances the information analysis (Bodegraven, 1998).

So according to the mentioned cases, the main issue of this research is to study the impact of e-customs on improving the efficiency and efficacy of Lorestan-Iran customs.

### **The necessity and importance of the research**

The necessity of this research can be discussed in the following fields:

**A)** In terms of application, the results of this study can be used by Lorestan customs and other customs offices located in different provinces of Iran.

**B)** Theoretically, The results of this study can be added to the data obtained from previous studies conducted on the advantages of information technology.

Since the development of export is considered as one of the key factors in development of any country, identifying the factors affecting the development of export is very important. Undoubtedly, equipping customs with information technology is one of the strategies considered for developing export. Therefore, to identify the consequences of utilizing information technology in customs is very importance too. In this regard, the promotion of customs services is among effective factors; also, customs automation can be a critical component of any program used to facilitate trade (UNCTAD, 2006).

According to UNCTAD, the most important barriers to export are the lack of capital and sufficient capacity as well as the complexities and difficulties related to providing services in international markets. Various economic and efficient ways are provided by Internet to attract foreign customers and provide services for them; these facilities can help to reduce some costs related to geographical aspect of export and thereby remove the barriers as much as possible.

The global spread of e-commerce causes the increase of exports through Internet. Internet can be an effective marketing tool for exporters and a low-cost way to enter global markets. Teo Thompson believes that Internet can provide opportunities for exporters without sufficient financial and human resources to collect necessary information regarding competitive markets and rivals; as a result, they can use the collected information to efficiently plan for export and create export strategies. This can be used not only as an effective tool for global communication, but also it provides the possibility of low-cost international transactions with customers who are geographically far (Hashemi, 2009).

Due to the high volume of trade and fast-growing commercial transactions as well as accelerating clearance operations, the customs has no choice but to be transformed; hence, customs systems, procedures, and processes are needed to be revised and modernized.

Totally, increase of commodity exchanges in the world has caused many challenges facing customs; if customs are not able to clear goods timely, they will fall behind the global business arena; therefore, utilization of information and communication technology can be helpful, reduce the problems, and provide the context for optimal performance of this organization (Najafi, 2004). Since the customs procedures and processes cannot be performed fluently without utilization of information and communication technology, the present study attempts to investigate the role of e-customs on promotion of customs services. In this research, the customs of Lorestan-Iran is assessed as a case study considering the issue that the full electronic systems (automation) have been implemented in the customs since 2012.

### **The research objectives**

#### **The major goal:**

- To study the impact of e-customs on improving the efficacy and efficiency of Lorestan customs.

#### **The sub-goals:**

- 1- To study the impact of e-customs on improving the efficiency of Lorestan customs.
- 2- To study the impact of e-customs on improving the efficacy of Lorestan customs.
- 3- To study the impact of e-customs on improving the customers' satisfaction in Lorestan customs.
- 4- To study the differences among the views of various clients referring Lorestan customs regarding the e-customs services of this organization.
- 5- To study the views of managers and experts on e-customs activities of Lorestan customs.
- 6- To study the differences among the views of various-age clients referring Lorestan customs regarding the e-customs services of this organization.

#### **The main question of research**

- Has e-customs improved the efficiency and efficacy of procedures and processes in Lorestan customs?

#### **The sub-questions of research**

- 1) To what extent has e-customs influenced the efficiency of Lorestan customs activities?
- 2) To what extent has e-customs influenced the efficacy of Lorestan customs activities?
- 3) To what extent has e-customs influenced the customers' satisfaction in Lorestan customs?
- 4) Is there any significant difference among the views of various clients referring Lorestan customs regarding the e-customs services of this organization?
- 5) To what extent has e-customs improved the managers' and experts' work affairs according to their views?
- 6) To what extent are the views of various-age clients different regarding the e-customs services of this organization?

### **Research Background**

- Karbasiyan (2004) presented an article as "customs and its role in e-commerce" in International Conference on Customs and IT held in Iran in 2004. In the article, it was indicated that customs plays an essential role in reducing customs violations, improving customers' satisfaction, enhancing the competitive strength of economy in the international trade arena, decreasing the refund time of customs duties, and paying customs duties.
- Dr. Elahi and Dr. Hassanzadeh (2007) studied the impact of e-banking, e-insurance, and e-customs on the facilitation of export. The results of this study showed that e-customs has

caused the clarification of customs affairs relating to exports and the facilitation of exporting goods and services due to using e-customs for customs daily processes related to exports, establishing Internet connection between supervisory departments, and using e-customs for documentation of customs affairs relating to export based on a common structure.

- Kuik, Rob Van (1998) in a study as “simplification of customs procedures” showed that e-customs can provide the fast and accurate pursuit of shipment status and access to different forms of different countries as well as reduce the clearance time.
- The results of a study done by UNESCO (The United Nations Educational, Scientific and Cultural Organization) in 2000 as “trade facilitation and e-commerce as a catalyst for integration” showed that e-customs can provide online access to customs laws and regulations, an electronic documentation using a common structure, opportunities for businesses without borders.
- The results of a study done by Maniego (1999) as “the role of information technology in modern customs” showed that electronic customs include various advantages such as automation of daily processes of customs, improvement of customs services, enhancement of customs risk assessment, acceleration of clearance, and lower latency for trusted merchants.
- Robert Johnson and Polanski (2002) in a study done as “international customs as a source of law for global e-commerce” showed that e-customs causes the reduction of custom affairs costs and tolls collection and acceleration of clearance.
- In a paper as “simple and paperless environment for customs and trade” released by EC (the European Commission) and EU (the European Union) in 2003, it is indicated that e-customs can lead to beneficial results such as making the connection between supervisory departments, increasing the clarification of customs affairs, applying the identical customs laws, and reducing clearance time.
- The results of a study done by Chung Anming (2003) as “electronic technology and simplification of customs rules and procedures in business aviation” showed that e-customs can lead to trade facilitation and export acceleration, the improvement of the access to goods and services across borders, providing and exchanging information with external partners and agencies in transit and business cycles, and increasing the inventory turnover rate of business community.
- The results of a study conducted by Kidwell and Richman (1998) as “preliminary procedures of international customs and a case development for standard electronic communication” showed that e-customs can provide modern control methods such as electronic methods for exchanging manifest data, remote declaration of goods, new methods of deposit insurance, increasing security, and borders control.
- UNCTAD (the United Nations Conference on Trade and Development) conducted a study as “ICT solutions to facilitate trade at borders and ports” in 2006. The results of this study shows that e-customs has many benefits including immediate clearance of goods, providing detailed statistics of trade and customs, and applying risk management techniques.
- Najafi (2004) studied the necessity of applying IT in customs. The results of this study showed that in addition to strengthening customs affairs, it is needed to pay attention to optimal use of human resources.

### **The conceptual model of research**

Figure 1 shows the independent and dependent variables of the research. Totally, it is understood from figure 1 that e-customs can lead to clarification of customs activities, timely informing exporters, and export development. Also, e-customs can significantly streamline the daily affairs of customs.

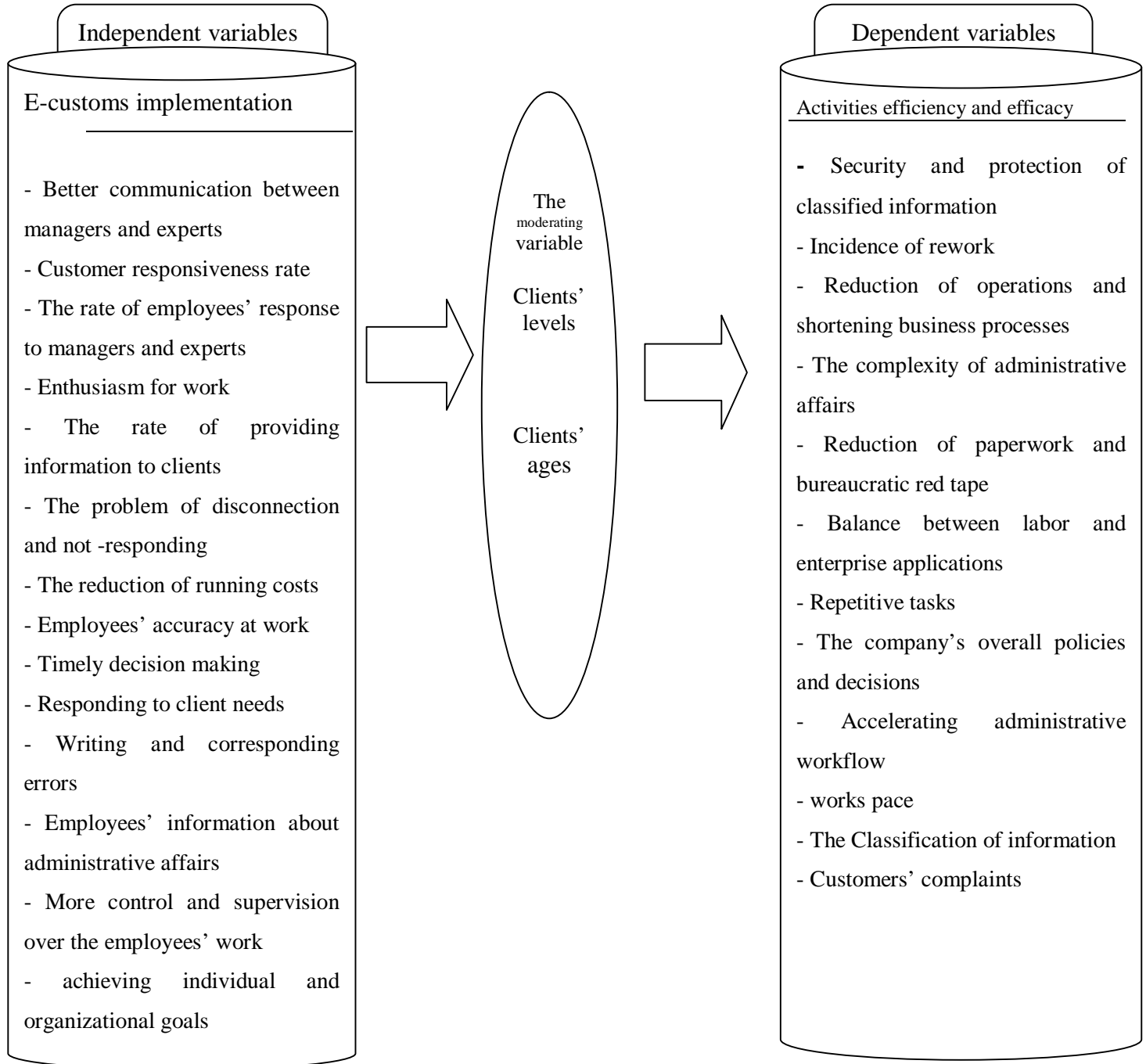


Figure 1: the conceptual model of research (Sarafizadeh and Alvani, 2010)

### **Research Methodology**

Based on the purpose, the study is an applied research; and with respect to the nature as well as the data collection method, it is a descriptive- ex post facto research. Since the researcher studies the effects of e-customs on Lorestan customs one year after implementation of e-customs in this organization, the research is considered as an ex post facto research.

### **The research population**

The research population consists of managers, experts, exporters, importers, and people active in Lorestan customs that they have being cooperated with this organization at least for 2 years. According to the statistics obtained from Lorestan customs statistics and information department in 2013, the number of research population has been 170 people.

### **The sample size and sampling method**

The sample size was determined equal to 118 people using Krejcie and Morgan's table. The number of distributed questionnaires is equal to 120 that the statistical analysis was conducted based on this number of questionnaires. The random sampling method was used to select the people who were going to receive the questionnaires through their emails. In other words, a list of people who make up the population was firstly provided, and then 120 of them were randomly selected and the questionnaire was emailed to them. According to the data collection method, the questionnaires were answered and collected in less than a week.

### **The data collection method and tools**

The following methods were used to collect data:

- **Library studies:** in this section, library resources, articles, books, and Internet were used to gather information on the theoretical foundations and research literature.
- **The field method:** in this research, the measurement tool is a questionnaire which was developed according to the conceptual model of figure 1. The questions are developed in four forms based on closed format in which multiple choices are given as answers and the respondents are restricted to choose among them. The questionnaire included 46 questions and the quintuple Likert scale (as very high, high, medium, low, and very low) was used to answer the questions.
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### **The methods of data analysis**

To analyze the statistical data and assess the research hypotheses, the SPSS software, descriptive statistics and inferential tests depending on the type of data and variables have been used as follows:

- 1- Descriptive statistics: including the mean, standard deviation, frequency tables, and corresponding graphs.
- 2- Inferential statistics: including one-sample t-test (comparing the average of a group with a fixed value), independent t-test (comparing the means of two independent groups), the one-way analysis of variance (comparing the means of more than two independent groups), Post hoc Tukey's test (the pairwise comparisons).

### **The findings of descriptive and inferential statistics**

In this research, 120 respondents participated in the survey that 90% and 10% of them were respectively male and female. Also, about 79% and 21% of respondents respectively had a

bachelor's and master's degree. Regarding the history of respondents' activities, about 13%, 57%, 28%, and 2% of them have been respectively active in Lorestan customs for less than 10 years, 10-19 years, 20-30 years, and more than 30 years. Therefore, the highest and lowest frequencies are respectively related to 10-19 years and more than 30 years. In terms of frequency distribution based on the respondents' age, about 17%, 73%, and 10% of respondents are respectively 30-39 years old, 40-49 years old, and older than 50 years old. Therefore, the highest and lowest frequencies are respectively related to 40-49 years old and older than 50 years old. In addition, 10%, about 15%, and 73% of respondents were respectively exporters, importers, and clearing agents or brokers.

In terms of e-customs efficiency, the minimum and maximum scores obtained regarding the efficiency in 2012 (before implementation of e-customs) are respectively equal to 52 and 88, but the minimum and maximum scores obtained regarding the efficiency in 2013 (one year after implementation of e-customs) are respectively equal to 75 and 90; also, the values of mean and standard deviation in 2013 are respectively equal to 85.42 and 3.63. The scores show significant increase in efficiency variable in 2013.

In terms of e-customs efficacy, the minimum and maximum scores obtained regarding the efficacy in 2012 (before implementation of e-customs) are respectively equal to 53 and 85; also, the values of mean and standard deviation in 2012 are respectively equal to 74.13 and 6.40, but the minimum and maximum scores obtained regarding the efficacy in 2013 (one year after implementation of e-customs) are respectively equal to 74 and 91. The scores show significant increase in efficacy variable in 2013.

In terms of e-customs impact on customers' satisfaction, the scores show significant increase in customers' satisfaction in 2013, because the minimum and maximum scores obtained regarding the customers' satisfaction in 2013 are respectively equal to 76 and 92 which are higher than the scores obtained regarding the customers' satisfaction in 2012.

### **The research findings**

According to the data obtained from the above table, the P-value of Levene's test (25.292) is significant at the level of  $\alpha = 0.01$ ; therefore, it is concluded that the variances of two situations are not homogeneous. On the other hand, since the value of t-test is significant at the level of  $\alpha = 0.01$ , it is concluded that there is a significant difference between the means of efficiency in 2012 and 2013. Hence, the null hypothesis ( $H_0$ ) is rejected and the researchers' hypothesis ( $H_1$ ) is confirmed.

According to the data obtained from the above table, the P-value of Levene's test (2.652) is not significant; therefore, it is concluded that the variances of two variables are homogeneous. On the other hand, since the value of t-test is significant at the level of  $\alpha = 0.01$ , it is concluded that there is a significant difference between the means of efficacy in 2012 and 2013. Hence, the null hypothesis ( $H_0$ ) is rejected and the researchers' hypothesis ( $H_1$ ) is confirmed.

According to the data obtained from the above table, the P-value of Levene's test (3.335) is not significant; therefore, it is concluded that the variances of two variables are homogeneous. On the other hand, since the value of t-test is significant at the level of  $\alpha = 0.01$ , it is concluded that there is a significant difference between the means of clients' satisfaction with Lorestan customs in 2012 and 2013. Hence, the null hypothesis ( $H_0$ ) is rejected and the researchers' hypothesis ( $H_1$ ) is confirmed.

According to the results, since the value of F-test is significant; therefore, it is concluded that at least there is a significant difference between the means of clients' groups. In the

following, the pairwise comparisons test (Post hoc Tukey's test) has been used to determine which pairs of means are significantly different. According to the obtained data, there is a significant difference between the views of exporters and clearing agents, as well as between the views of importers and clearing agents, but there is no significant difference between the views of exporters and importers.

According to the data obtained from the above table, the P-value of Levene's test (2.165) is not significant; therefore, it is concluded that the variances of two variables are homogeneous. On the other hand, since the value of t-test is significant at the level of  $\alpha = 0.01$ , as a result, there is a significant difference between the means of Lorestan customs managers' and experts' views regarding years 2012 and 2013. Hence, the null hypothesis ( $H_0$ ) is rejected and the researchers' hypothesis ( $H_1$ ) is confirmed. Since the average of scores is higher in 2013, it can be concluded that the implementation of e-customs has led to the promotion of Lorestan customs activities.

According to the data obtained from the above table, since the value of F-test is not significant, it is concluded that the clients' ages do not influence their views regarding the promotion of customs activities.

### **Conclusion**

The results showed that e-customs enhances the legal exports and imports of goods and makes the process to be performed faster and better, because it provides faster and easier access to information about the various costs and the current rules of exports and imports as well as stronger and more comprehensive communications between the relevant departments involved in customs processes. It is obvious that the e-customs users believe in positive efficacy of it, because they have experienced the beneficial results of such a technology in a complex organization like customs.

In addition, it can be concluded that the e-customs users usually consists of individuals who expect similar services from this technology; in other words, they expect to apply the content of such a system for carrying out their customs affairs properly and timely. In fact, there is another study done by Jahangiri M. (2011) regarding the impact of e-customs that the results of mentioned study are consistent with the present research. Comparing the results of both studies (the present research and the one conducted by Jahangiri) show the positive efficacy of e-customs, but the order of cases which are affected by e-customs is different. In the former study, the e-customs respectively affects timely informing beneficiaries, communications between the relevant departments, facilitation of exports and imports, and clarification of activities. These findings show the consistency among various customs in Iran, because despite of studying two different customs, the results of both studies (the present research and the one conducted by Jahangiri) are consistent with each other.

The results of Post hoc Tukey's test showed that there is a significant difference between the views of exporters and clearing agents, as well as between the views of importers and clearing agents, but there is no significant difference between the views of exporters and importers.

The results of t-test showed that there is a significant difference between the means of Lorestan customs managers' and experts' views regarding years 2012 and 2013. Hence, the null hypothesis ( $H_0$ ) is rejected and the researchers' hypothesis ( $H_1$ ) is confirmed. Since the average of scores is higher in 2013, it can be concluded that the implementation of e-customs has led to the promotion of Lorestan customs activities.

According to the results obtained from analysis of variance (ANOVA), since the value of F-test is not significant, it is concluded that the clients' ages do not influence their views regarding the promotion of customs activities.

### **Suggestions**

The results of present study show that e-customs can lead to the development of customs affairs. Accordingly, it is recommended to decision makers and officers of Iran customs administration to assess the weaknesses and strengths of this organization and attempt to overcome the weaknesses and reinforce the strengths so that it becomes more efficient and more convenient day by day. As we know, the quality is a relative matter, so to improve the quality of e-customs services, it is needed to identify its strengths and weaknesses, and then improve the system.

It is also recommended to other executive organizations of Iran to implement electronic systems and provide electronic services for their clients. As the results of this study showed, electronic services of customs have led to the promotion of customs activities; therefore, so good that other executive organizations of Iran follow the same path and implement electronic technologies and attempt to convert all or a part of activities related to clients' services into electronic format. It is expected that following the e-government slogan raised in previous years, different executive organization of the country take steps to realize the slogan.

One of the results of this study indicated that e-customs has positively affected informing beneficiaries more than the other aspects of customs affairs. Therefore, it is recommended that the authorities also pay attention to other aspects and overcome the weaknesses. In this case, the comparison of various aspects never leads to significant differences among them and all aspects can benefit identical efficacy.

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