

**Investigate the Electronic payment barriers of revenues  
of Ports and Maritime Organization and providing  
solutions  
(Case Study of the Directorate General of Ports and Maritime of  
Sistan and Baluchestan)**

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**ABSTRACT** — Today in e-commerce, banking affairs is done in the simplest form. Organizations are obliged to use e-banking services tread to enhance the quality of service to people. Hence is needed that to be studied the barriers to electronic payments of revenue of Ports and Maritime Organization. The aim of study is to investigate barriers for using the electronic payment in receiving revenues of Ports and Maritime General directorate in Sistan and Baluchistan. The present study has been conducted with survey and field method. The Statistical population consisted of 380 people of all employees, experts and managers of the General Directorate of Ports and Maritime province of Sistan and Baluchistan to people. The sample size was determined based on table sampling Morgan based on 200 questionnaires by simple random method was distributed among employees, experts and managers that ultimately the 186 fully completed questionnaires and were analyzed . In order to collect data was used a questionnaire. To analyze the data obtained were used the SPSS software and chi-square and Friedman statistical tests. Research findings showed that barriers to the use of electronic payment in receiving Ports and Maritime Organization revenues are as follows: Technical characteristics of the network, shortage of skilled manpower, characteristics of electronic payment system, financial regulatory features and characteristics of the Ports and Maritime Organization financial system.

**KEY WORDS:** E-Commerce, E-Banking, E-Payment, Ports and Maritime Organization.

**Introduction**

Always and ancient times, issue of administrative bureaucracy had been one of the factors annoying of organizations clients, the (Yarahmadi Khorasani, 7, 2009). With the arrival of computer the organizations performance has been changed as fundamental. The organizations that are immediately noticed of consequences of these changes, for effective use of this device have put on their priority the growth and development of IT systems in accordance with electronic standards. Nowadays administrative connections and correspondence has been changed in organizations and institutions generally, so that the administrative slow and time-consuming processes are unacceptable. (Yarahmadi Khorasani, 11, 2009). Today, organizations are continuously to invest in the IT field that is one of the important sources and innovative of organizations, and they hope to maintain their position in today's competitive world. Meanwhile, the banking industry due to the nature of their activities of IT has used entitled electronic banking and their products in form of electronic payment. Electronic banking is as a prerequisite for Electronic Trade and Electronic Trade also will grow further by spread of electronic banking. By using the electronic payment systems can be transmitted money and credit resources electronically without the need for physical displacement. Electronic banking has several levels and to proportion of each of these levels can provide a specific definition of it. But what can be seen at all levels, the use of computer software systems as well as banking information is process able digitally that is available for computers, and as we move towards the higher levels, Less manual operations, more centralized computer systems, more extensive accessible network and will be less limitations of time and place. (Goudarzi and Zobeidi: 2008). Electronic Trade is expanding worldwide and is considered one of the models and trading methods. Using this new innovation by companies large and small has been caused to create multiple benefits, and these benefits have been caused of strengthening the incentives of small companies to this effect. Thus, identifying the barriers and facilitators in this regard can be better help to the managers in planning and decision-making.

### **Problem Statement**

Electronic Trade Nowadays has been entered in many fields of human life, So that the purchase of daily necessities, banking affairs, education, and work remotely, all in easiest way to done by explore time and space around the globe. (Friedman et al. 2001; Nasiri Mofakham, 2001, Nasiri Mofakham, 2003) The benefits that the use of Electronic Trade makes it inevitable; but before widespread commercial use of the Internet, are important in using the safe payment methods. The idea of electronic payment for goods and services on the Internet as well, with the increasing commercialization of the Internet and the growing number of users and its application, has developed in the past decade. In a complete process of Electronic Trade that includes of marketing, negotiation, contract and adjustment of the agreement, payment, delivery and support, payment systems play an important role as a gateway to connect to the banks to exchange funds in the general model of each commercial cycle (Nasiri Mofakham, 2003). Financial transactions on line to provide the funds electronically, and use of the Internet occur to facilitate and accelerate financial transactions. In this connection it is necessary by providing enough security and reliability to be provided the confidence of customers to conduct electronic financial transactions. Payment systems are a vital part of economic and financial infrastructure of an organization and country. Their good performance in the safe and timely transfer of funds is the most important effect of them on the overall performance of the economic system (Bank of England. 2005). Main objective of this study is to investigate the barriers of electronic payment of revenue of Ports and Maritime Organization of the Case of the General Directorate of Ports and Maritime province of Sistan and Baluchistan. Obviously, each social organization to achieve the objectives that has been designed (Rezaeian, 2001). In modern management theories, according to the principle of customer orientation and their satisfaction and also applicants for service as one of the main orientations efficiency Measurement and development and growth, and components such as ((speed)), ((accuracy)), ((attention)) to perform the clients work, how to behave and deal with clients and appropriate inform, are factors that cause clients satisfaction and the clients of government agencies (or quasi-governmental). (Management organization and planning of the country, the center of technology development and renovation of office, 26, 2001) Ports and Maritime Organization responsible for serving customers receive payment billing in the traditional way, according to the banking systems developments and needs of the new systems and respecting the client it is needed to get the receives in form of electronically. Ports and Maritime Organization on the decisions of the Council of Ministers is obliged to use electronic banking network services (both domestic and international) to improve the quality of services to people and take steps towards the realization of the law of Fifth Development Plan. State is obliged from the first year of the Fifth Plan to act for electronic banking system establishment and implementation of procedures for the exchange money and national and international electronic services and for all customers in all the country's banks "All banks are also obliged to act for issuance variety of electronic, credit money cards, prepaid and installation of related equipment such as automatic devices trading (ATM) and sale terminal (POS) for electronic buying and selling goods and services in the country. Ports and Maritime Organization investigate as part of e-government and towards the deployment and use of those to be offered solutions.

In this study, is answered to following general questions:

Are the reasons for non-use of electronic payment because of barriers such as the characteristics of financial laws and regulations, the technical characteristics of electronic banking the network, expertise of human resources, characteristics of electronic payment systems and financial characteristics of the Ports and Maritime Organization?

### **History of research**

Generally very little researches have been conducted on the identification of barriers of the adoption of Electronic Trade in developing countries, including Iran. Sarmad Saedi in 2002, has been put more on direct and indirect environmental barriers (outside the organization) Electronic Trade in Iran. Effective environmental factors to use Electronic Trade in this study are as follows:

A) Direct environmental barriers, including competitors, merchants, customers, physical distribution units

B) Indirect environmental barriers including cultural and social environment, demographic environment, economic environment, political and legal environment, technological environment.

Finally barriers in order of importance were summarized as follows:

Political and legal factors, economic, social and cultural factors, merchants, customers, competitors, technological factors, physical distribution units, demographic factors .Rita and Alzj and colleagues (Walczuch & et al., 2000) examined the barriers of the adoption and expansion of Electronic Trade in small companies in Netherlands. Their research method had been a little exploratory, and its statistical community had been 1,000 companies with fewer than 50 Dutch employees, and the method of data collection had been a questionnaire. During the research results, the most important barriers of the adoption and expansion of Electronic Trade in small companies in the Netherlands were categorized as follows:

1. The lack of integrity and compatibility of structure and business processes with Electronic Trade

2. The lack of direct and short-term understanding of the benefits of the Internet use (the ambiguity of interests)

Monideepa Tarafdara and colleagues (Monideepa Tarafdara & et al., 2006) examined the effective organizational stimulants in the development of Electronic Trade in India .Their research method had been qualitative- analytic and exploratory, and its statistical population had been 4 Indian companies in the financial services industry domain, and methods of data collection had been face to face interview, industry information, press reports and commercial documents. During the results of this research, effective organizational stimulants in the development of Electronic Trade in order of importance are:

A. The role of company superior manager and leader

B. Organizational characteristics

C. Experts characteristics of information systems (indirect factor)

MaCGREGOR (MaCGREGOR, 2005) divided the barriers of the Electronic Trade adoption. During the research results, division of the barriers of the Electronic Trade adoption includes:

A) Very hard Electronic Trade barriers (barriers which lead to the company fails to act to Electronic Trade adoption.) involve lack of skills and technical knowledge in the organization, complex implementation of Electronic Trade in the organization, requires high investment, not enough time to implement Electronic Trade , the difficulty to select different strategies adoption in Electronic Trade , security cases

B) Inappropriate Electronic Trade barriers (barriers which are inappropriate for the organization and cause damage in organization work in the way of the adoption of Electronic Trade .) including Electronic Trade incompatibility with products and services, Electronic Trade incompatibility with business processes, customers incompatibility with Electronic Trade services, shortage of benefits of Electronic Trade use in company .

### Research Methodology

A survey method was used to collect information, in this study, so it can be used as a field research. The statistical population of this research including all employees, experts and managers of the General Administration of Ports and Maritime in Sistan and Baluchistan province on 380 people. In order to ensure that enough number of questionnaires was collected, 200 questionnaires were distributed among employees, experts and managers, and finally, 186 questionnaires were fully completed and were analyzed by them. The statistical sample size was selected based on Morgan sampling table and samples were randomly selected. Due to the lack of access to the entire statistical population, sample members have been selected simple randomly from a list presented by the office. The library and field methods (questionnaire) have been used in order to collect information. In this study, the researcher made questionnaire has been used in this research that includes:

1) General information and personal characteristics

2) Questions related to the investigate barriers to use electronic payment in the General Administration of Ports and Maritime in Sistan and Baluchistan province.

Content validity research tool has been confirmed by using experts and university professors' opinion, and Cronbach's alpha coefficient used to determine the reliability of questionnaire which was calculated 0.93, that regarding to this value that is higher than 0.7, therefore, research tool has a high reliability. Chi-square statistical tests and Friedman analysis have been used in order to analyze the data from the statistical software spss.

### Research Findings

To test the hypotheses, initially Kolmogorov-Smirnov test was used for normality of data and then Friedman and chi-square test was used to test the hypotheses.

#### - Normality Test

**Table1. Descriptive statistics for review on normality of the data**

	Technical characteristics	human resource	Electronic Payment	Ports and Maritime Organization financial system	Financial rules and regulations
Number	186	186	186	186	186
Mean	3.72	3.60	3.53	3.43	3.34
The standard deviation	0.765	0.756	0.729	0.689	0.734
Kolmogorov-Smirnov (z)	1.90	2.80	2.37	1.76	1.49
Significance level	0.001	0.000	0.000	0.004	0.023

Amount of z calculated for all variables amount of z is significant in the alpha level of 5% means that amount of p-value is smaller than 0.05 and the null hypothesis is rejected based on the data normality as a result, can be said scores related to variables have not normal distribution on this basis nonparametric test of chi-square and Friedman be used to answer questions.

#### - Test of main question of research

**Table 2: Test Friedman related to barriers to the use of electronic payment in receiving revenues of Ports and Maritime Organization**

Barriers to the use of electronic payment	Average of ranks
The technical characteristics of the network	3.29
The lack of skilled manpower	3.02
Characteristics of electronic payment systems	3.00
Details of the financial system of Ports and Maritime Organization	2.83
Characteristics financial rules and regulations	2.90

What issues could that be the barriers to the use of electronic payment in receipt of revenues of Ports and Maritime Organization?

**Chi-square = 12.94, DF = 4, Significance level 0.012**

Friedman test results show that the amount of chi-square (12.94) is significant at the alpha level of 0.05 and the null hypothesis is rejected in other words, there is deference between the barriers that leads to the use of electronic payment in the receiving revenues of Ports and Maritime Organization and according to the average rank of barriers is estimated in such way that the technical characteristics of the network have the top ranking and then there are shortage of skilled manpower.

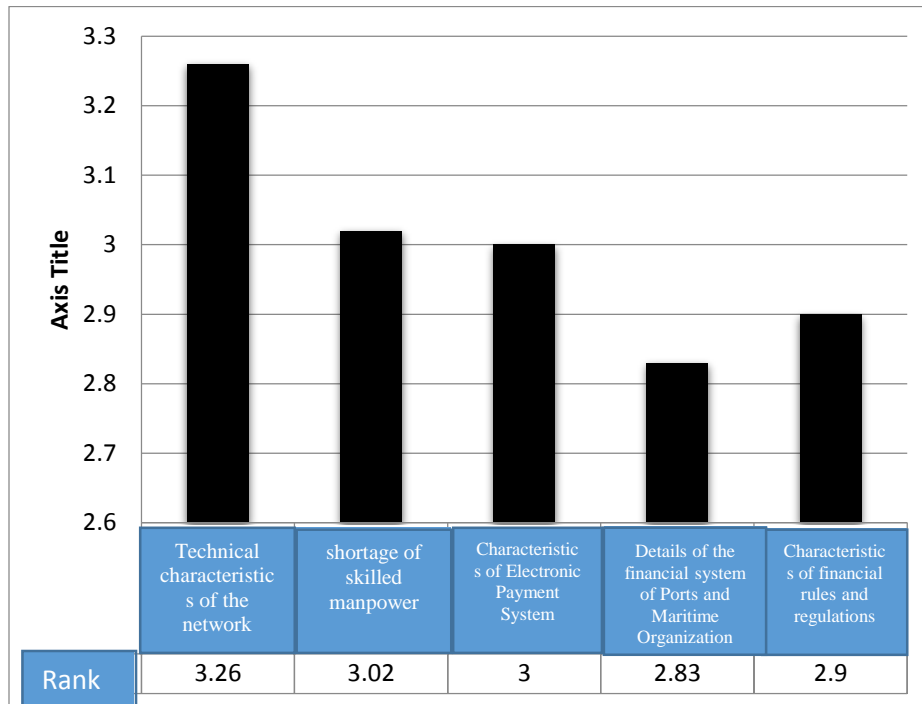


Figure 1: Ranking barriers for using the electronic payment in receive income

- Test of secondary questions

**First secondary question:** Are the Characteristics of financial rules and regulations the barrier to using the electronic payment in the General Directorate of Ports and Maritime of Sistan and Baluchestan?

Table 3: the barrier financial rules and regulations to using the electronic payment

remainders	Expected frequency	Observed frequency	Percentage	
-40.5	46.5	6	3.2	Low
11.5	46.5	58	31.2	Somewhat
48.5	46.5	95	51.1	High
-19.5	46.5	27	14.5	Very high
		186	100.0	Total

Table 5: chi-square test related to financial rules and regulations

Barriers to rules and regulations	amount of chi-square
96.88	Degrees of freedom
3	Significance level
0.000	

The results of the chi-square test show that the observed chi-square ( $\chi^2 = 96.88$ ) is significant at the alpha level of 0.05 and the null hypothesis is rejected. In other words is observed no significant difference between observed frequencies and expected. As a result, the characteristics of financial rules and regulations are barriers to using the electronic payment in the General Directorate of Ports and Maritime of Sistan and Baluchestan.

**Second secondary:** whether technical Characteristics of the electronic banking network are barriers to using the electronic payment in the General Directorate of Ports and Maritime of Sistan and Baluchestan?

**Table 6: Technical characteristics of the barrier electronic banking network to using the electronic payment**

remainders	Expected frequency	Observed frequency	Percentage	
-39.5	46.5	7	3.8	Low
-11.5	46.5	35	18.8	Somewhat
45.5	46.5	92	49.5	High
5.5	46.5	52	28.0	Very high
		186	100.0	Total

**Table 7: Chi-square test related to technical characteristics of electronic banking network**

Barriers to rules and regulations	
81.57	amount of chi-square
3	Degrees of freedom
0.000	Significance level

The results of the chi-square test show that the observed chi-square ( $x^2 = 81.57$ ) is significant at the alpha level of 0.05 and the null hypothesis is rejected. In other words is observed no significant difference between observed frequencies and expected. As a result, is estimated in such a way that the characteristics of electronic banking network are barriers to using the electronic payment in the General Directorate of Ports and Maritime of Sistan and Baluchestan.

**Third secondary question:** Does the shortage of skilled manpower are barrier to using the electronic payment in the General Directorate of Ports and Maritime Sistan and Baluchestan?

**Table 8: shortage of barrier skilled manpower to using the electronic payment**

remainders	Expected frequency	Observed frequency	Percentage	
-39.5	46.5	7	3.8	Low
-11.5	46.5	48	25.8	Somewhat
45.5	46.5	89	47.8	High
5.5	46.5	42	22.0	Very high
		186	100.0	Total

**Table 9: chi-square test related to shortage of skilled manpower**

Barriers to rules and regulations	
72.88	amount of chi-square
3	Degrees of freedom
0.000	Significance level

The results of the chi-square test show that the observed chi-square ( $x^2 = 72.88$ ) is significant at the alpha level of 0.05 and the null hypothesis is rejected. In other words is observed no significant difference between observed frequencies and expected. As a result, is estimated in such a way that the shortage of skilled manpower are barriers to using the electronic payment in the General Directorate of Ports and Maritime of Sistan and Baluchestan.

**Fourth secondary question:** Does the electronic payment System Characteristics of electronic banking are barrier to using the electronic payment in the General Directorate of Ports and Maritime Sistan and Baluchestan?

**Table10. Characteristics of electronic payment System e-banking the barrier to using the electronic payment**

remainders	Expected frequency	Observed frequency	Percentage	
-35.5	46.5	11	5.9	Low
-10.5	46.5	36	19.4	Somewhat
62.5	46.5	109	58.6	High
-16.5	46.5	30	16.1	Very high
		186	100.0	Total

**Table 11: Chi-square test related to the characteristics of the electronic payment system**

Barriers to rules and regulations	
119.33	amount of chi-square
3	Degrees of freedom
0.000	Significance level

The results of the chi-square test show that the observed chi-square ( $\chi^2 = 119.33$ ) is significant at the alpha level of 0.05 and the null hypothesis is rejected. In other words is observed no significant difference between observed frequencies and expected. As a result, is estimated in such a way that characteristics of the electronic payment system are barrier to using the electronic payment in the General Directorate of Ports and Maritime of Sistan and Baluchestan.

**Fifth secondary question:** Does the use of electronic payment is due to the characteristics of the financial system of Ports and Maritime Organization?

**Table 12: financial System Characteristics of Ports and Maritime Organization barrier to using the electronic payment**

remainders	Expected frequency	Observed frequency	Percentage	
-36.5	46.5	10	5.4	Low
16.5	46.5	63	33.9	Somewhat
29.5	46.5	76	40.9	High
-9.5	46.5	37	19.9	Very high
		186	100.0	Total

**Table 13: Chi-square test related to characteristics of the financial system of organizations  
Barriers to rules and regulations**

55.16	amount of chi-square
3	Degrees of freedom
0.000	Significance level

The results of the chi-square test show that the observed chi-square ( $\chi^2 = 55.16$ ) is significant at the alpha level of 0.05 and the null hypothesis is rejected. In other words is observed no significant difference between observed frequencies and expected. As a result, is estimated in such a way that characteristics of the electronic payment system are barrier to using the electronic payment in the General Directorate of Ports and Maritime of Sistan and Baluchestan.

### Conclusion

The aim of this study has been to examine barriers of electronic payment of revenues of Ports and Maritime Organization's Sistan-Baluchistan province. Research results showed that there is a difference between the barriers that leads to the use of electronic payment in receiving revenues of Ports and Maritime Organization and due to average number of barriers, is estimated in such a way that the technical features of the network has the highest rank, and the shortage of skilled manpower, characteristics of electronic payment system, Characteristics of financial rules and regulations and financial characteristics of the Ports and Maritime Organization are in the next ranks. Based on the results of present study is needed The General Directorate of Ports and Maritime to provide the creating hardware and software infrastructures and ease of using the Internet lines for stakeholders. Including research done in this regard can be noted the first International Conference on Information and Knowledge by efforts of Department of Computer Engineering and Information Technology at Amirkabir University. The results of this study showed that "in our country due to lack of legal grounds necessary to use of the electronic trade and electronic signature, such as documents, lack of electronic funds transfer, The lack of electronic trade main network in the country and hardware and software related to those, Lack of adequate large and small institutions of electronic trade Finally, lack of knowledge and culture of electronic trade and the Internet network are of the barriers of electronic payment. Also other investigations line with this result can be pointed out to findings of McGregor (2005). Therefore it is necessary the General Directorate of Ports and Maritime to take steps to remove technical barriers to electronic banking network Such as hardware and software infrastructure and also to speed up the Internet and virtual networks. Improvement and development of hardware equipment and infrastructural of this technology so that users feel more ease in using the Web site, will be more helped in the technology. Reduce system's errors and increase the speed up doing transactions, will be the results of this strategy that will be increased the acceptance of this technology. In addition, it offers a simple guide to use the website as well as text in the form of moving images (animation), thereby increasing the ease of using the website. As well as organizations and companies that are committed to the use of electronic banking methods they should be enhance its human resources in this regard, Because if for example in electronic banking model even all employees and banking agents do as well as the specific issues in the use and application of this model, in the event of failure of users' power (organizations, public, commercial), will remain incomplete the electronic banking activity. In addition, it is essential that the General Administration of Ports and Maritime in Sistan and Baluchistan province to act in improving the security level of electronic payment systems to prevent electronic stealing. Problems such as insufficient convertibility features of electronic payment systems, low development in the use of the benefit of electronic payment systems among the majority of citizens and organizations and consumers, the problems related to the safety and effectiveness amount of electronic payment systems in organization income are barriers to the use of electronic payment in General administration of Ports and Maritime in Sistan and Baluchestan Province. The results show that the features of financial rules and regulations are also as a barrier in electronic payment of the General Administration of Ports and Maritime incomes. The development of electronic commerce needs a legal appropriate framework to ensure companies and individuals about their

enough protection during financial transactions. While designing legal and legislative infrastructures for electronic commerce of organizations, they should be aware that it will leave major impacts on commercial performance and leads to high efficiency of the organization.

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