



AENSI Journals

Journal of Applied Science and Agriculture

ISSN 1816-9112

Journal home page: www.aensiweb.com/jasa/index.html



## Barriers to E-Commerce in SMEs of Iran

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### ARTICLE INFO

Article history:

Received 21 March 2014

Received in revised form 20

April 2014

Accepted 18 May 2014

Available online 1 June 2014

Keywords:

E-commerce, Trade Barrier, Small and Medium Enterprises, SME, Iran

### ABSTRACT

**Background:** Many barriers of e-commerce in SMEs are cited according to literature. By selecting e-banking and e-commerce experts and interviewing them, different aspects of barriers of acceptance and development of e-commerce in SME's were identified. A set of barriers were identified and a questionnaire designed and distributed among 89 e-payment company managers. Data was analyzed statistically. **Objective:** Studying different aspects of barriers of acceptance and development of e-commerce in SME's, and leading to identification of the most important e-commerce barriers in Iran. **Results:** According to the results, four factors of "the absence of enough information and skills of personnel", "e-commerce incompatibility with structures and processes of company", "high investment costs for start of e-commerce" and "reluctance to organizational change and to keep status quo" are the most important barriers of implementing e-commerce in small and medium enterprises of Iran respectively. In other words, intra-organizational barriers are more important barriers in implementing e-commerce in SMEs of Iran. Moreover, four factors of "reluctance of the customers and suppliers to use e-commerce", "lack of enough law in e-commerce", "absence of enough information and skills of personnel" and "international sanctions of e-payments in foreign e-commerce" are the most important barriers after implementing e-commerce in SMEs in Iran respectively. **Conclusions:** Extra-organizational barriers after implementation of e-commerce are more restrictive than the other barriers.

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**To Cite This Article:** Mahshid Sherafati, Roohollah Mohammadi, Bijan Bidabad, Barriers to E-Commerce in SMEs of Iran. *J. Appl. Sci. & Agric.*, 9(6): 2591-2599, 2014

## INTRODUCTION

Based on the model of Robin Lawson and Kaporaba, barriers of e-commerce are divided into two general groups of intra-organizational barriers (internal) and extra-organizational barriers (infrastructural and external). Internal barriers are the ones which are caused by structural and content nature of organizations, and managers and owners of company can remove them. Lack of skill of personnel, lack of return on investment, ambiguity of the provided services and products, customers and supporters' failure to use e-commerce, security concerns with e-payment are of internal barriers in e-commerce. Moreover, education and human resources management, production scheduling, communicational systems, financial management are included as important internal barriers (Amiri and Salarzahi, 2010). External or extra-organizational barriers are those that their removals are not in hands of managers and owners of company. Cultural, political, social, and legal barriers are of this kind. For example, lack of governmental policies to provide free-commerce infrastructure facilities causes SMEs not to be enthusiastic enough to adopt e-commerce (Solaymani *et al.*, 2012).

Chitura and colleagues (2008) review the literature since 1990 and reached a list of e-commerce major barriers of small and medium enterprises. In his research, barriers are divided into two general classes of "no internet connection—very high expense of access to internet and fear of the society with new e-commerce technology etc." and e-commerce barriers in 21<sup>st</sup> century such as "transportation problems, tax ambiguities, security problems and bank services limitations etc."

In the present world and particularly in developed countries, many studies have been done for identification of major barriers of acceptance of e-commerce; some of which are referred to Chitura research. Love *et al* (2001) divide barriers of e-commerce in small and medium sizes construction enterprises in four organizational, financial, technical and behavioral dimensions as shown by the following table (1).

**Table 1:** Barriers of e-commerce in SMEs

Barrier Type	Barriers
Organizational barriers	Inability to measure financial productivity of e-commerce Absence of IT structures Reluctance to organizational change and to keep the status quo Absence of IT knowledge in organization
Financial barriers	Financial risk System maintenance cost Personnel training cost Ambiguity of e-commerce profitability
Technical barriers	Absence of enough information and skills of personnel Absence of required software Security risks Incompatibility of information systems
Behavioral barriers	Fear with technology Unreliability and ambiguity of e-commerce services (by personnel, customers and suppliers)

In this research as the first study that recognizes barriers of e-commerce in Iran. The statistical population is included in acceptance level 3 of e-commerce. All the companies in statistical population have passed acceptance stages, and they are in stage of use of e-commerce. That is all the selected companies have contracted with Saman Electronic Payment Company for receiving e-payment services so they have online payment in their e-commerce activities. This is the unique specification of the research and causes our statistical population to be the companies which are experienced in e-commerce category. This study leads to identification of the most important barriers of e-commerce in Iran. On this basis, we divide e-commerce barriers into two sections: barriers at time of accepting e-commerce, and barriers after accepting e-commerce. The small and medium enterprises in this research have good experiences in both dimensions.

#### Literature Review:

As it can be considered in many developing countries, integration of e-commerce in current business procedures has modified the way business is accomplished (Rajabian, 2008) and e-commerce plays a significant role in modern business performances. Doing electronic transactions, ordering online products, and utilization of electronic after-sale services, etc. are of internet facilities in e-commerce. In addition, small and medium-sized enterprises (SMEs) cannot be ignored in the economy, and they are showing their entrepreneurial power to obtain chances provided by Information Technology (Hourali *et al*, 2008). There is a substantial and direct connection between electronic commerce and small and medium-sized enterprises to achieve economic circumstances. Studies have indicated that electronic commerce has the potential to enhance efficiency and productivity in many areas (Lawrence and A. Tar, 2010). In the Middle East countries there are complicated barriers to implement e-commerce procedures in SMEs, and it is understandable to consider these barriers due to modification in international business circumstances. SMEs are experiencing boosted competition as foreign firms gain connection to the local markets (Ghanatabadi, 2005). Therefore logical solutions to adoption of e-commerce in SMEs should be reconsidered. Several researches related to e-commerce barriers in small and medium-sized enterprises in some countries show different results from country to country:

1. Egypt (H. Zaied, 2012): Technical barrier on top of the list; legal and statutory barriers; due to shortages of internet security and safety; restricted utilization of internet banking and web portals by SMEs.
2. Libya (Hunaiti *et al*, 2009): High internet expenditures; inappropriate online shopping services and Libyan postal system; and Libyans' culture and restricted assurance in online trading systems.
3. Indonesia (Govindaraju and Chandra, 2012): Human Resources; origin of information; and push forces elements.
4. Ghana (Iddris, 2012): Shortage of right technical skills; e-commerce security and safety; primary expenditures; opposition by people and culture; low motivation by management; developed legal and statutory system shortage.

#### Analysis:

Ten e-banking and e-commerce experts in Iran were selected and were interviewed. The experts included top managers of the banks that offer e-banking services and top managers of e-commerce and e-commerce professional authorities. The experts were asked to present their views on different aspects of barriers of acceptance and development of e-commerce in small and medium enterprises in Iran. The given views were collected and analyzed using Nvivo 8 software. Data (interview text with answers of the questionnaires) were coded and finally the software was used for investigating the available codes. After coding and extracting information from interviews, the extracted concepts were classified into two groups of intra-organizational barriers and extra-organizational barriers. Intra-organizational barriers were divided into 4 groups (including financial, organizational, behavioral and technical barriers) and extra-organizational barriers were divided into three groups (political, legal, socio-cultural barriers).

**Table 2(1):** Obtained concepts from interview.

Reference to previous researches	Statement's reference in interview	Barrier Class	Concept
<b>1. Internal Barriers of Implementing E-commerce in Small and Medium Enterprises</b>			
Love <i>et al.</i> (2001) Chia Hua <i>et al.</i> (2008)	A, D, E, F, H, I	1-Financial	1- Financial risk
Hadjimanolis (1999) Lawrence (1997) Purao and Campbell (1998) Love <i>et al.</i> (2001) Rita (2000) Kapurubandara and Lawson (2006)	A, B, C, E, H, I, J		2- Ambiguity in profitability and benefits of e-commerce
Van Akkeren and Cavaye (1999) Lawrence (1997) Hadjimanolis (1999) Poon and Swatman (1997) Abell and Lim (1996) Purao and Campbell (1998) Love <i>et al.</i> (2001) MacGregor and LejlaVrazalic (2005)	D, E, J		3- High investment costs for start of e-commerce
Love <i>et al.</i> (2001)	H		4- Personnel training and learning costs
Khan (2004) Rita (2000) Love <i>et al.</i> (2001) MacGregor and LejlaVrazalic (2005)	A, C, D, E, H, J	2-Organizational	1- E-commerce incompatibility with structures and processes of the company
OECD (1998) Van Akkeren and Cavaye (1999) Hadjimanolis (1999) Lawrence (1997) Abell and Lim (1996) Crawford (1998) Love <i>et al.</i> (2001) MacGregor and LejlaVrazalic (2005) Kapurubandara and Lawson (2006)	C, E, F, I, J		2- Absence of IT knowledge in the organization for implementing e-commerce
Khan (2004) Lawrence (1997) Love <i>et al.</i> (2001)	B, D, G, H, I, J	3- Behavioral barriers	1- Reluctance to organizational change and to keep status quo
Love <i>et al.</i> (2001) Gadwin (2001) MacGregor and LejlaVrazalic (2005) Kapurubandara and Lawson (2006)	A, B, C, D, E, F, G, H, I, J		2- Security concerns with e-payment
OECD (1998) Van Akkeren and Cavaye (1999) Hadjimanolis (1999) Lawrence (1997) Abell and Lim (1996) Crawford (1998) Love <i>et al.</i> (2001) MacGregor and LejlaVrazalic (2005) Kapurubandara and Lawson (2006)	C, E, F, I, J	4-Technical	1- Absence of knowledge and skill in personnel of the company
Lowry <i>et al.</i> (1999) Poon and Swatman (1997) Purao and Campbell (1998) Van Akkeren and Cavaye (1999) OECD (1998) Love <i>et al.</i> (2001) MacGregor and LejlaVrazalic (2005) Kapurubandara and Lawson (2006)	A, B, D, E, F, I, J		2- Security risks
El-Nawawy and Ismail (1999) Lawrence (1997) MacGregor and LejlaVrazalic (2005)	D, E		3- Complexity of implementing e-commerce in the organization
Crawford (1998) Lawrence (1997) Van Akkeren and Cavaye (1999) Mac Gregor and LejlaVrazalic (2005)	H, J		4- Lack of enough time for implementing e-commerce
New finding	E		5- Clarifying affairs of the company (barrier for the companies which use all kinds of rants)

At the end, the barriers identified by different interviews were adjusted to previous researches. The results are given in the following two tables:

**Table 2(2):** Obtained concepts from interview.

Reference to previous researches	Statement's reference in interview	Barrier Class	Concept
2- External Barriers of Implementing E-commerce in small and medium enterprises			
El-Nawawy and Ismail (1999) Ling (1999)	A, B, C, E, H, I	1-Legal	1- Shortage of governmental supports
OECD (1998) El-Nawawy and Ismail (1999) Crawford (1998)	D, E, H, I	2-Socio-cultural	1- Lack of technological awareness in society

**Table 2(3):** Obtained concepts from interview.

Reference to previous researches	Statement's reference in interview	Barrier Class	Concept
3- Internal Barriers of After Implementing E-commerce in small and medium enterprises			
Love <i>et al.</i> (2001)	D, E, H, I	1-Financial	1- Lack of return on investment
Love <i>et al.</i> (2001) Chia Hua <i>et al.</i> (2008) ZiadHunaiti <i>et al.</i> (2009)	A, E, J		2- Use and maintenance costs
Love <i>et al.</i> (2001)	H		3- Personnel training and learning costs
Khan (2004) Rita (2000) Love <i>et al.</i> (2001) MacGregor and LejlaVrazalic (2005)	A, C, D, E, H, J	2-Organizational	1- incompatibility of e-commerce with structures and processes of the company
OECD (1998) Van Akkeren and Cavaye (1999) Hadjimanolis (1999) Lawrence (1997) Abell and Lim (1996) Crawford (1998) Love <i>et al.</i> (2001) MacGregor and LejlaVrazalic (2005) Kapurubandara and Lawson (2006)	C, E, F, I, J		2- Organizational barriers –shortage of IT skills in the organization for use of e-commerce
Love <i>et al.</i> (2001) Godwin (2001) MacGregor and LejlaVrazalic (2005) Kapurubandara and Lawson (2006)	A, B, C, D, E, F, G, H, I, J	3- Behavioral	1- Security concerns with e-payment
OECD (1998) Van Akkeren and Cavaye (1999) Hadjimanolis (1999) Lawrence (1997) Abell and Lim (1996) Crawford (1998) Love <i>et al.</i> (2001) MacGregor and LejlaVrazalic (2005) Kapurubandara and Lawson (2006)	C, E, F, I, J	4- Technical	1- Absence of information and skills in the company's personnel
ZiadHunaiti <i>et al.</i> (2009)	E, F, G, I, J		2- Internet speed in the company
Lowry <i>et al.</i> (1999) Poon and Swatman (1997) Purao and Campbell (1998) Van Akkeren and Cavaye (1999) OECD (1998) Love <i>et al.</i> (2001) MacGregor and LejlaVrazalic (2005) Kapurubandara and Lawson (2006)	A, B, D, E, F, I, J		3- Security risks
El-Nawawy and Ismail (1999) Lawrence (1997) MacGregor and LejlaVrazalic (2005)	D, I, J		4- Work complexity with e-commerce in organization

Considering the obtained results, total 20 barriers based on the previous studies and 5 new barriers based on realities in Iran were identified among 25 identified barriers.

In order to analyze the identified barriers in previous section (interview results), the barriers were divided into two classes (before implementation and after implementation of e-commerce) and on this basis, a questionnaire was prepared and distributed among the experts.

A part of research is quantitative and another part is qualitative:

A- In qualitative part: The experts of e-banking and e-commerce were selected and 10 experts were interviewed. These experts include top managers of banks that offer e-banking (top managers of the companies which perform e-commerce) and professional authorities in e-commerce.

B- In quantitative part: 50 small and medium enterprises contracted with SamanBank E-payment Company during 2006 to 2011 at least included in level 3 of e-commerce were selected.

**Table 2(4):** Obtained concepts from interview.

Reference to previous researches	Statement's reference in interview	Barrier Class	Concept
4. Internal Barriers of After Implementing E-commerce			
Kapurubandara and Lawson (2006)	D, G, H	1-Legal	1- Continual changes in governmental changes
El-Nawawy and Ismail (1999) Abell and Lim(1996) Kapurubandara and Lawson (2006)	A, D, G, H, I		2- Lack of enough laws in e-commerce such as lack of digital signature
El-Nawawy and Ismail (1999) Ling (1999)	A, B, H, I	2-Political	1- Lack of governmental support
New finding	A, E, G, H		2- International sanctions of e-payments in foreign e-commerce
Kapurubandara and Lawson (2006) AziziSharyar <i>et al.</i> (2006) Lowry <i>et al.</i> (1999) Hadjimanolis (1999) Abell and Lim (1996) Pracy and Cooper (2000) Looi (2003)	E, F, G, I, J	3-Socio-cultural	1- Reluctance of the customers and suppliers to use e-commerce
New finding	A, B	4-Technical	1- No connection of banks' networks to each other and dependence of all on Shetab banking system

**Table 3:** New identified barriers based on interviews (new findings).

References	Barriers	Obtained Concepts from Interview (Barriers)
A, E	Organizational	No clear affairs in online processes
A, D, G	Behavioral	Limitation of SMEs customers (no need of customers for e-commerce)
A, B, D, E	Technical	Lack of communication between banks (dependence on Shetab banking system)
A, C, D, E, F, G, I, J	Political	International sanctions in foreign e-payments
A, B, C, E, F, G, I	Socio-cultural	No concurrence of holidays inside the country with those outside the country

#### Validity and Reliability of Interviews:

In order to ensure authenticity and reliability of the collected data from the interviews, four criteria were used: Authenticity, Validity, Confirmability, and Transitivity. For this purpose, researcher communicated with the target places for a long time to attract the trust of the participants and understand the studied environment. The participants' review was used for authenticating data and codes. Interview text was returned to participant for coding to ensure authenticity of codes and interpretations. The codes which were thought by the participant not to indicate their attitude were corrected. Sampling strategy which included people in broad spectrum such as work experience, gender and position caused increase of data validity. The interviews text was reviewed by the supervisor, and the extracted codes and classes were considered by supervisor. To confirm transitivity, findings were given to two experts who didn't participate in the interviews and they confirmed fitness of the findings.

**Table 4:** CronbachAlpha Coefficient for the questions relating to e-commerce implementation time.

Cronbach'sAlpha Coefficient	Question no.	Cronbach'sAlpha Coefficient	Question no.
0.849	12	0.809	1
0.823	13	0.813	2
0.923	14	0.912	3
0.702	15	0.722	4
0.823	16	0.723	5
0.755	17	0.725	6
0.801	18	0.891	7
0.849	19	0.729	8
0.798	20	0.777	9
0.943	21	0.822	10
0.788	22	0.732	11

#### Validity and Reliability of Questionnaires:

The questionnaire should have been confirmed in terms of validity before distribution. For this purpose, pretest method was used. In this stage, first, the questionnaire was distributed among 20 experts and validity of

questionnaire was checked and confirmed. Then, the confirmed questionnaires were distributed among 53 nominated enterprises. Among these 53 enterprises, 82 managers and experts relating to the subject were selected and the final questionnaires were distributed among them. About 75 out of 82 distributed questionnaires were completed and collected. They were used for analysis of research information. Cronbach's Alpha Coefficient was used to testing the validity of questions. Results of Cronbach's Alpha Coefficient are given in table (4) for the questions related to each section. According to the above table, Cronbach's Alpha Coefficient was more than 0.7 for all questions that confirm the reliability of the research.

#### Interpretation of Results:

Chi Square and Friedman tests were used for interpretation purpose. Friedman test is the nonparametric equivalence of ANOVA (Analysis of Variance) withingroups. Friedman test was applied to tank the barriers of e-commerce implementation. Ranking of each of components according to Friedman test is entered in table (5).

**Table 5:** Prioritizing 22 barriers of e-commerce at time of implementation based on Friedman test.

Row	Factors	Point based on Friedman test
1	Lack of enough skills of the company's employees	13.81
2	E-commerce incompatibility with structures and processes of the company	12.79
3	High investment costs for start of e-commerce	12.73
4	Reluctance to organizational change and to keep the status quo	12.65
5	High cost of outsourcing implementation of e-commerce	12.53
6	Concern with disclosure of commercial information in internet	12.44
7	Creating new security risks by implementing e-commerce	12.19
8	Complexity of implementing e-commerce in the enterprise	12.03
9	Lack of enough time for implementing e-commerce	11.95
10	Excessive clarification of commercial affairs of the company by implementing e-commerce	11.47
11	Lack of governmental financial support for implementing e-commerce	11.41
12	Application of governmental laws for implementing e-commerce	11.31
13	Concern with reluctance of customers to e-commerce	11.21
14	Suppliers and partners' failure to welcome e-commerce	11.17
15	Not ensuing return on investment in implementation	11.01
16	Inability to predict benefit and profit of implementation	10.95
17	Reluctance of owners and investors of the enterprise to give necessary credit for implementing e-commerce due to unknown gained benefits	10.81
18	Lack of enough experience and knowledge of the enterprise's personnel and managers	10.73
19	High expense of recruiting specialists in implementation of e-commerce	10.42
20	High training expense for the personnel of the enterprise for introduction to e-commerce procedures	10.15
21	Spending time and expense for replacing traditional structures and processes of the enterprise toward e-commerce	10.07
22	Resistance of suppliers against changes in implementation of e-commerce	9.16

As the above table shows, four factors: "absence of enough information and skills of personnel", "e-commerce incompatibility with structures and processes of the company", "high investment costs for start of e-commerce" and "reluctance to organizational change and to keep status quo" are the most important barriers of implementing e-commerce in small and medium enterprises in Iran respectively. Based on the obtained results, all the above 4 factors are regarded as organizational factors. In other words, intra-organizational barriers have higher priority in implementing e-commerce in small and medium enterprises of Iran. In table (6), significance of Friedman test was confirmed using Chi Square distribution. Significance of test confirms the model for 95% confidence level (for this level, significance degree of model is below 0.05).

**Table 6:** Results of Chi Square test.

Inferential test	Components
75	Number of sample
53.027	Chi square
21	Degrees of freedom
0.000	Significance

Here, Friedman Test was applied to study the ranking of each of the barriers after implementing e-commerce using Friedman test. This prioritization was done based on Friedman test and the most important factors were ordered and presented.

As table (7) shows, four factors: "reluctance of customers and suppliers to use e-commerce", "lack of enough law for e-commerce", "absence of enough information and skills of the personnel" and "international sanctions of e-payments in foreign e-commerce" are the most important barriers of after-implementing e-commerce in small and medium enterprises of Iran respectively. Based on the obtained results, three out of the above 4 factors are regarded as extra-organizational factors. In other words, extra-organizational barriers after

implementation of e-commerce have higher priorities in small and medium enterprises of Iran. In table (8), significance of Friedman test is confirmed using Chi Square distribution. Based on the obtained results, significance of test confirms the model at 95% confidence level (at this confidence level, significance degree of the model is below 0.05).

**Table 7:** Prioritizing 24 barriers of e-commerce after implementation of e-commerce based on Friedman test.

Row	Factors	Point based on Friedman test
1	Reluctance of customers and suppliers to use e-commerce	14.68
2	Lack of enough law for e-commerce	13.66
3	Absence of enough information and skills of the personnel	13.55
4	International sanctions of e-payments in foreign e-commerce	13.53
5	Suppliers and partners' failure to welcome e-commerce in relations with the enterprise	13.42
6	Low speed of internet in country	13.15
7	Instability of governmental laws in e-commerce	13.11
8	Lack of legal laws in digital signature section	12.95
9	Absence of IT knowledge and skills (hardware and software) in personnel of the enterprise	12.93
10	Complexity of applying e-commerce procedures in the enterprise	12.91
11	High expense of research and development and continual update of e-commerce systems	12.74
12	Personnel training and learning costs	12.70
13	High expense of e-payment processes compared with traditional payment methods	12.41
14	Incompatibility of commercial processes of the enterprise with e-commerce	12.35
15	Incompatibility of financial processes of the enterprise with e-commerce	12.28
16	Incompatibility of information systems of the enterprise with e-commerce	12.06
17	Absence of culture of using internet in society	12.02
18	Iranian banks' failure to provide e-payment services	11.79
19	Complexity of planning and management in the enterprise	11.59
20	High security risk of monetary exchanges in e-payment process	11.53
21	Failure to increase number of customers by implementing e-commerce	11.48
22	Failure to increase sale volume by implementing e-commerce	11.37
23	Failure to obtain profit and expected return by implementing e-commerce	10.97
24	High cost of maintenance and support of e-commerce systems in the enterprise	10.81

**Table 8:** results obtained from chi square test confirms.

Inferential test	Components
75	Number of sample
37.149	Chi square
23	Degrees of freedom
0.031	Significance

### Conclusion:

The results obtained from data analysis show that e-commerce barriers for small and medium enterprises in Iran are different at time of accepting e-commerce and after accepting e-commerce. The absence of knowledge and skills of enterprise's personnel is the only barrier at the time of acceptance and after acceptance of e-commerce. In study of barriers of implementing e-commerce, we can conclude that intra-organizational barriers have higher priority in implementation time of e-commerce and extra-organizational barriers have higher priority after implementing e-commerce. The most important barriers of e-commerce at time of acceptance are: absence of enough information and skills of personnel, e-commerce incompatibility with structures and processes of company, high investment costs for start of e-commerce and reluctance to organizational change and to keep status quo. The most important barriers of e-commerce after its acceptance are: cultural factor, reluctance of customers and suppliers to use e-commerce, lack of required laws in e-commerce, absence of enough information and skills of personnel and international sanctions of e-payments in foreign e-commerce.

### REFERENCES

- Abell, L. Wand, Lim, 1996. Business use of the Internet in New Zealand: an exploratory study. (Accessed 25 February 2008).
- Amiri, Y. and H. Salarzahi, 2010. Fuzzy sketch for implementation of E-business plan in Iran SMEs. (case study: Yazd Industrial Town, Iran).
- Chia Hua, S., M. Jashua Rajesh, L. Bee Theng., 2008. Barriers to the adoption of e-commerce among small and medium sized enterprises: A study on the non-adopters in Malaysia. Paper presented at the 2<sup>nd</sup> International Colloquium on Business and Management, Bangkok, Thailand.
- Chitura, T., S. Mupemhi, T. Dube, J. Bolongki Kit., 2008. Barriers to electronic commerce adoption in small and medium enterprises: A critical literature review. Journal of Internet Banking and Commerce, 13(2): 1-13. Retrieved January 13, 2011, from <http://www.arraydev.com/commerce/jibc/>.

Crawford, J., 1998. Networking enterprises web strategy (NEWS): a project to get smaller enterprises on line. Department of industry, Science and Tourism, (Accessed 04/06/09).

Lawrence, E. and U.A. Tar., 2010. Barriers to e-commerce in developing countries. Information, society and justice. Volume 3.

El-Nawawy, M.A. and M.M. Ismail., 1999. Overcoming deterrents and impediments to electronic commerce in light of Globalization. Proceedings of the 9<sup>th</sup> annual conference of the internet society INET 99, San Jose, USA, 22-25 June.

Ghanatabadi, F., 2005. Internationalization of small and medium-sized enterprises in Iran. Lulea university of technology. Department of business administration and social sciences, Division of industrial marketing and e-commerce.

Godwin, J. Udo. 2001. Privacy and Security concerns as major barriers for e-commerce: a survey study. Information Management & Computer Security, 9(4): 165-174.

Govindaraju, R. and D.R. Chandra. 2012. Analysis of level and barriers of e-commerce Adoption by Indonesian Small, Medium, and Micro enterprises (SMMEs), Interworking Indonesia journal.

Ziad, H., A.N., 2012. Barriers of e-commerce adoption in Egyptian SMEs. I. J, Information Engineering and Electronic Business.

Hadjimanolis, A., 1999. Barriers to innovation for SMEs in a small less developed country (Cyprus). Technovation, INET 99, San Jose, USA, 22-25 June.

Harindranath, G., R. Dyerson, D. Barnes., 2008. ICT adoption and use in the UK SMEs: a failure of initiatives?" Electronic journal of information systems evaluation, 19(9): 561-570.

Hourali, M., M. Fathian., A. Montazeri, M. Hourali, 2008. A model for E-readiness assessment of Iranian Small and Medium Enterprises. Journal of faculty of engineering, Vol. 41.

Hunaiti, Z., Ra'ed (Moh'd Taisir), Masa'deh, M., Mansour, A., Al-Nawaflesh., 2009. Electronic commerce Adoption Barriers in Small and Medium-sized Enterprises (SMEs) in developing countries: The case of Libya, IBIMA Business Review.

Iddris, F., 2012. Adaption of E-commerce Solution in Small and Medium-sized Enterprises in Ghana. European journal of business and management.

Kapurubandara, R. Mand Lawson, 2006. Barriers to adopting ICT and e-commerce with SMEs in developing countries: an exploratory study in Sri Lanka. COLLECTeR, Adelaide.

Karimi, S. and S. Azizi, 2006. Competitive advantage in e-commerce. Journal of Tadbir. No. 143

Khan, S., 2004. Adoption of electronic commerce in SMEs in Hong Kong.

Lawrence, K.L., 1997. Factors inhibiting the utilization of electronic commerce facilities in Tasmanian small to medium sized enterprises. Proceedings of the 8<sup>th</sup> Australasian conference on information systems. Adelaide, pp: 587-597.

Looi, H.C., 2003. A model of factors influencing electronic commerce adoption among small and medium enterprises in Brunei Darussalam. International Journal of information technology.

Love, P.E.D., Z. Irani, H. Li, E.W.L. Cheng, R.Y.C. Tse., 2001. An empirical analysis of the barriers to implementing e-commerce in small-medium sized construction contractors in the state of Victoria, Australia. Construction Innovation, 1: 31-41

Lowry, G., M. Singh, A. Scollary, 1999. Electronic commerce initiatives in Australia: identifying opportunity, meeting challenges, and measuring success. Proceedings of the 10<sup>th</sup> Australasian conference on information systems, pp. 532-541. Wellington, New Zealand 1-3 December.

MacGregor, R., L. Cand, Vrazalic, 2005. A basic model of electronic commerce adoption barriers: a study of regional businesses in Sweden and Australia. Journal of small business and enterprise development.

Organisation for Economic Cooperation and Development (OECD), 1998. SMEs and electronic commerce", Ministerial conference on electronic commerce, Ottawa, Canada, 7-9 October.

Poon, P.M. Sand, C. Swatman, 1997. Small business use of the internet: findings from Australian case studies, (Accessed 30 May 2007).

Pracy, J. Dand, Cooper, 2000. Internet commerce adoption by small and medium sized enterprises in the Illawarra. (Accessed 18/01/07).

Purao, B. Sand, Campbell, 1998. Critical concerns for small business electronic commerce: some reflections based on interviews of small business owners. Proceedings of the Association for information systems Americas conference. Baltimore, pp: 325-327.

Rajabian, L., 2008. Impact of e-commerce on expert development for small and medium-sized enterprises in developing countries evidence from Iran. Thesis, Lawrence Technological university.

Rita, P., 2000. Internet Marketing Destinations in the Global Tourism Marketplace, Proceedings INET 2000 (<http://www.isoc.org/inet2000/cdproceedings.htm>)

Solaymani, S, K. Sohaili, E. Akhlaghi Yazdinejad, 2012. Adaption and use of e-commerce in SMEs. Electronic commerce research.

Van Akkeren, A. Jand, L.M. Cavaye., 1999. Factors affecting entry-level internet technology adoption by small business in Australia: an empirical study. Proceedings of the 10<sup>th</sup> Australasian conference on information systems. Wellington, New Zealand, 1-3 December.