

E-Business Barriers in Iran's Free Trade Zones

Mohammad Ali Sarlak, Asghar Abolhasani Hastiani
Payame Noor University, Iran

Abstract: Currently there are 24 free trade and special economic zones in Iran. **Problem Statement:** of these zones is lack of e-business and this is in spite of managements' desire to have proper infrastructure for e-business in these zones. The goal of this study is to determine and explain e-business barriers in free trade and special economic zones in Iran. **Approach:** Our approach in this study is based-on Delphi method. We used Delphi method to conduct our study and chose 25 members for our Delphi panel, who were given the outcomes of literature review. We asked the panel group to rank the barriers by importance and provide any other problems or issues they found during their studies. **Results:** The result of four rounds of Delphi panels declared five main barriers for implementing e-business in the regions including: Infrastructural barriers, Property rights issues, Mistrust in E- payments, financial barriers and Shortage of IT skills. **Conclusions/Recommendations:** We concluded that to implement e-business in the Iranian free zones and special economical districts, there are some infrastructure requirements such as high speed internet, wide internet band, proper laws and regulations; so that small and medium size enterprises (SMEs) could utilize e-business.

Key words: E-business, E-commerce, free trade zones, special economic zones, Delphi method

INTRODUCTION

At the present time, most countries with similar goals have acted to establish free trade and special economic zones. Islamic republic of Iran too, understanding the importance of establishment of free trade zones has initiated remarkable efforts in providing the necessary infrastructures for the activities relating to free trade zones. The results of these efforts, up to the time of writing this essay had been designing of 6 free trade zones and 20 special economic zones in Iran (Table 1).

The nature of free zone and special economic zones are almost the same. The only difference is that retail trade is allowed in the free zones and it is not allowed in the special economic zone. Special economic zones are also for more of a larger activity for trade and industry A key challenge that has arisen within Iran's Free trade and special economic zones is encouraging Small and Medium sized Enterprises (SMEs) to adopt more advanced E-business applications and for these to integrate better with business processes and applications. With the emergence of Internet, companies are facing new challenges such as intensive global competition, more demanding customers, rapidly shrinking product Life cycles and short response time. As a result, companies are racing against time to achieve the competitive advantage by offering a wider range customer of product and service portfolio.

MATERIALS AND METHODS

Definition of E-business: E-business can be described as the new business logic that operates in a world without boundaries. It refers to a broader definition of Electronic Commerce, not just buying and selling but also servicing customers, providing an integrated business environment and offering added value services^[1].

E- Business, as an area of research, is still evolving with many researchers disagreeing to the Benefits or boundaries. Many benefits from the utilization of ecommerce for SMEs are suggested^[2]. Figure 1 explains Categories of E- business.

There is an extensive literature that discusses the potential benefits of E-business^[3,4,5]. However, organizations need to consider a range of challenges presented by E-business adoption^[6]. It is observed that most of the E-business studies are largely based upon the experience of E-business implementation in the developed countries^[7].

The current research tries to identify the key barriers to adoption E-business in Iran's free trade and special economic zones using Delphi Method.

Delphi method: Delphi method is a group decision-making process that involves circulating questionnaires on a specific problem until a consensus regarding the problem is reached^[8]. In current research 25 experts were selected as Delphi panel members

Table 1: Iran's free trade and special economic zones

Iran's free Zones	Type	Websites
Kish	Free Trade Zone	www.kishfreezone.org
Qeshm	Free Trade Zone	www.qeshm.ir
Chabahar Free Zone	Free Trade Zone	(www.chabaharfz.com)
Anzali Free Zone	Free Trade Zone	http://www.iftiz.org.ir
Aras Free Zone	Free Trade Zone	www.jolfa.org
Arvand Free Zone	Free Trade Zone	www.arvandfreezone.ir
Sirjan	Special Economic Zone	www.kdo.ir info@kdo.ir
Sarakhs	Special Economic Zone	Astan-e Ghods Razavi
Payam	Special Economic Zone	www.payamaviation.ir
Khuzistan	Special Economic Zone	http://www.iftiz.org.ir
Salafchegan	Special Economic Zone	www.qssez.com
Khorramshahr	Special Economic Zone	www.khorramshahrport.com
Persian gulf ship building	Special Economic Zone	Persian Gulf Ship Building S.E.Z
Arg-E-jadid	Special Economic Zone	www.arg-jadid.com
Petrochemical	Special Economic Zone	www.nipc.com
Bandar bushehr	Special Economic Zone	www.pso-bushehr.ir
Bushehr	Special Economic Zone	www.bsez.ir
Bandar amirabad behshahr	Special Economic Zone	http://www.iftiz.org.ir
Bandar shahid raja'ee	Special Economic Zone	www.shahidrajaeport.ir
Mines and metals	Special Economic Zone	Mines and Metals S.E.Z
Pars	Special Economic Zone	Mines and Metals S.E.Z
Sang-e-lorestan	Special Economic Zone	http://www.iftiz.org.ir
Shiraz electric and electronics	Special Economic Zone	www.seez.ir
Yazd textile industries	Special Economic Zone	www.yazdec.ir

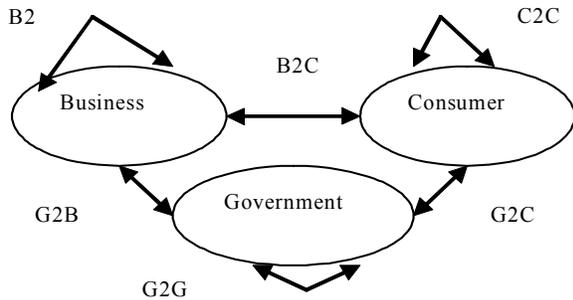


Fig. 1: Categories of E- business

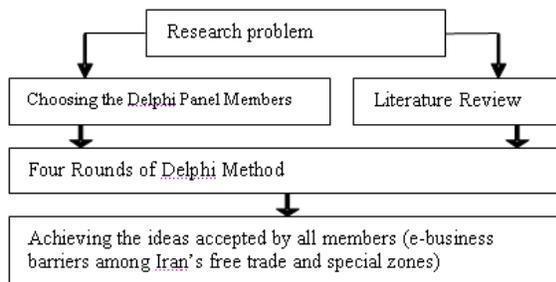


Fig. 2: Research methodology

Research methodology: The present research methodology is shown in Fig. 2.

Research problem: What are the key barriers to adoption E-business in Iran's Free trade and special economic zones.

Literature review: Table 2 The results of literature review on barriers of E-business adoption is shown^[9].

The first round results: In the first round of Delphi method, 24 experts from 25 members of panel did participate. In first round, the ideas of panelist about importance of E-business old barriers that mentioned in pervious studies and as well E-business new barriers that not mentioned in pervious studies were collected. In Table 3, the panelist ideas regarding importance of barriers to adoption E-business Based on pervious studies after classifying is shown the panelist's new ideas regarding the barriers of E-business adoption are as follow: Structural barriers, Financial barriers, Infrastructural barriers, Behavioral barriers, Experimental barriers, Environmental barriers, bureaucratic barriers, Technological barriers, Employee attitudes, Political barriers, Short term goals, No credit cards, Cultural barriers, Economical barriers, Managerial barriers.

The second round results: In the second round, 23 experts from 25 members of panel did participate. In Table 4, the panelist's new ideas regarding importance of E-business barriers in Iran's free trade and special economic zones is shown.

The Third Round Results: In round three, 22 experts from 25 members of panel did participate. In the first part of the questionnaire of the third round of Delphi

Table 2: The results of literature review on barriers of E-business adoption

Barriers	B2B	B2C	C2C	G2B	G2G	G2C
Cross border legal issues	✓	✓	✓	✓	✓	✓
Cultural differences	✓	✓	✓	✓	✓	✓
Language	✓	✓	✓	✓	✓	✓
Lack of Payment vehicles e.g. Paypal	✓	✓	✓	✓	✓	✓
Cost of telecommunications	✓	✓	✓	✓	✓	✓
Currency risks	✓	✓	✓			
Feasibility hard to justify	✓	✓				✓
Lack of resources	✓	✓	✓	✓	✓	✓
TCO too high.	✓	✓	✓	✓	✓	✓
IT illiteracy among decision maker	✓	✓	✓	✓	✓	✓
Shortage of IT skills	✓	✓	✓	✓	✓	✓
Unable to recognize benefits of E-business	✓	✓	✓	✓	✓	✓
Intellectual Property rights	✓	✓	✓	✓	✓	✓
Taxation	✓	✓	✓			
Distribution network unavailable or inadequate	✓	✓				✓
Fear of Channel Conflict	✓	✓		✓		✓
Resistance to change	✓	✓	✓	✓	✓	✓
Fear of fraud, identity theft etc.	✓	✓	✓	✓	✓	✓
Mistrust of electronic payments	✓	✓		✓		✓
High Illiteracy rate	✓	✓	✓	✓	✓	✓
Digital divide	✓	✓	✓	✓	✓	✓
Local Customer base too small	✓	✓	✓	✓		✓
Low credit card culture	✓	✓	✓			✓
Warranty issues and After- sales	✓	✓	✓			

Table 3: First round results: panelist ideas regarding importance E-business barriers

Description	No. of Answers	Average of answers	Order of Importance
Shortage of IT skills	24	4.88	1
Intellectual Property rights	24	4.58	2
Mistrust of electronic payments	23	4.11	3
Language	24	3.90	4
Currency risks	23	3.83	5
Feasibility hard to justify	23	3.78	6
Lack of resources	23	3.78	7
Cultural differences	22	3.77	8
Unable to recognize benefits of e- business	23	3.74	9
Lack of Payment vehicles e.g. Paypal	24	3.21	10
Cost of telecommunications	21	2.52	11
Low credit card culture	21	2.43	12

method, ensemble of factors were introduced which participants in the first and the second rounds did recognize those as a key barriers of E-business adoption

Table 4: Second round results

Description	No. of Answers	Average of answers	Standard deviation	Order of importance
Structural barriers	23	3.43	0.73	1
Financial barriers	22	4.23	0.92	3
Infrastructural barriers	23	4.17	0.65	5
Behavioral barriers	23	3.96	0.71	10
Experimental barriers	23	3.91	1.20	11
Environmental barriers	23	3.87	0.92	12
bureaucratic barriers	23	3.87	0.97	13
Technological barriers	23	3.74	0.81	14
Employee attitudes	22	3.73	0.88	15
Political barriers	22	3.64	0.95	16
Short term goals	23	3.52	0.95	17
No credit cards	21	3.48	1.03	18
Cultural barriers	22	3.32	0.78	19
Economical barriers	23	2.96	0.77	20
Managerial barriers	21	2.90	1.04	21

Table 5: Third round results

Description	No. of answers	Average of answers	Standard deviation	Order of importance
Shortage of IT skills	22	4.86	0.35	1
Intellectual Property rights	22	4.69	0.48	2
Mistrust of e-payments	21	4.50	0.91	3
Financial barriers	22	4.23	0.69	4
Infrastructural barriers	22	4.18	0.66	5

Table 6: Fourth round results

Description	No. of answers	Average of answers	S.D of answers	Order of importance
Infrastructural barriers	20	4.88	0.32	1
Intellectual Property rights	20	4.65	0.50	2
Mistrust of e-Payments	19	4.62	0.84	3
Financial barriers	20	4.26	0.73	4
Shortage of IT skills	20	4.20	0.60	5

in Iran's Free trade and special economic zones. Only those responses receiving a median score of 4 or higher remained for the third round^[10]. In Table 5 the results of third round is shown.

In this round, Kendal's Coefficient of Concordance is 0.711.

The fourth round results: In fourth round of Delphi method, only 20 experts from 25 members of panel did participate.

In Table 6 the results of fourth round is shown. The brief results of Delphi fourth round are shown in Table 6. In fourth round, Kendal's Coefficient of Concordance is 0.734, compared to the third round coefficient (0.711) was increased up to 2.3%.

Table 7: the standard deviation of panelist answers

Description	First and second rounds k1 = 24, k2 = 23		Third round k3 = 22		Forth round k4 = 20	
	Average	S. Deviation	Average	S. Deviation	Average	S. Deviation
Infrastructural barriers	4.88	0.330	4.86	0.350	4.88	0.320
Intellectual Property rights	4.58	0.700	4.50	0.910	4.52	0.840
Mistrust of E- payments	4.43	0.730	4.69	0.480	4.65	0.500
Financial barriers	4.23	0.920	4.18	0.660	4.26	0.730
Shortage of IT skills	4.17	0.650	4.23	0.690	4.20	0.600
Standard deviation		0.666		0.618		0.598

RESULTS AND DISCUSSION

The results of four rounds of Delphi shown that according to the following reasons, consensus amongst the panel members was obtained and can terminate the repetition of rounds:

- According to Table 7, More than 50 Percentage of members have determined the arrangement of factors like the arrangement of group
- According to the Table 7, the standard deviation of panelist answers regarding the importance of barriers has decreased from 0.666 in the first and second round to 0.598 in the fourth round
- The Kendal's Coefficient of Concordance for the panelist answers regarding the arrangement and importance of barriers to E-business adoption in the fourth round is 0.734. With attention to the number of panelist, which is more than 10 people, this level of Kendal's Coefficient is significantly meaningful ^[11]. The Kendal's Coefficient of Concordance for the arrangement of success factors in the fourth round (0.734) in comparison to the third round (0.711) is just 0. increased up to 0.23

CONCLUSION

E-business has significantly transformed the way in which firms conduct business, allowing them to gain more business opportunities and competitive advantage. However, results from the study revealed a lack of or slow uptake of E-business strategy among the SMEs in Iran's free trade and special economic zones. Among the different variables studied, Infrastructural barriers, Property rights issues, Mistrust in E- payments, Financial barriers and Shortage of IT skills were reported to have significant influence in the context of e-business development among the SMEs in these zones.. It was found that infrastructural barriers played a key role in explaining non-adoption of e-business by firms. The study can have an implication for free zones

and government authorities engaged in promoting e-business development. Given the unique context of SMEs, such an understanding could be useful for government in drawing guidelines, approaches, and developing more practical and effective framework to promote SME-e-business development.

The study findings indicate that Barriers to Adoption of E-business in Iran's Free trade and special economic zones are Infrastructural barriers, Intellectual Property rights, financial barriers, Shortage of IT skills and Infrastructural barriers. The implication for free trade and special economic zones is that the E-business adoption in these zones requires overcoming factors impeding E-business adoption.

REFERENCES

1. Turban, E., J. Lee, D. King, M.H. Chung, 2006, *Electronic Commerce: A Managerial Perspective*, 4th Edn., Prentice-Hall, Upper Saddle River Hall, NJ, ISBN: 0131976672.
2. Currie, W., 2000. *The Global Information Society*, Wiley, New York, pp: 270. ISBN: 0-471-89507-5.
3. De Ruyter, K., M. Wetzels and M. Kleijnen, 2001. Customer adoption of e-services: An Experimental Study. *Int. J. Service Industry Manage.*, 12:184-207.
<http://www.emeraldinsight.com/Insight/viewContent.do?containerType=Journal&containerId=10861>
4. Gefen, D., 2003. Managing user trust in B2C E-Services. *E-Service J.*, 2: 7-24. <http://www.e-sj.org/JouConVol22.html>
5. Huang, *et al.*, 2004. An E-readiness assessment framework and two field studies. *Communicat. Associat. Informat. Sys.*, 14: 364-386. <http://web.njit.edu/~bieber/CIS677F04/huang-cais2004.pdf>.
6. Keoy, K.H. *et al.*, 2006. An empirical study of the key drivers and inhibitors towards E-business adoption: A multi-country comparison. *IADIS Int. J. WWW/Internet*, 5: 113-128. http://www.iadis.org/ijwi/files/vol5_issue1/2007510108.pdf.

7. Linston, Harold A. and Murray Turoff, 1975. Introduction to the Delphi Method. In: *Techniques and Applications*, Harold A.L. and M. Turoff, (Eds.). Addison-Wesley, London, pp: 3-13.
8. Richard, L. Daft., 2006. *The New Area of Management*, second edition. Thomson-South, Western. USA., ISBN-13:978-0-324-53777-2
9. Bharadwaj, Prashanth Nagendra and Soni, Ramesh G., 2007. E-Commerce Usage and Perception of E-Commerce Issues among Small Firms: Results and Implications from an Empirical Study. *J. Small Business Manage.*, 45: 501-521. DOI: 10.1111/j.1540-627X.2007.00225.x.
10. Stansfield, M. and Grant, K. 2003. An investigation into issues influencing the use of the Internet and E-commerce among small-medium sized enterprises. *J. Electr. Commerce Res.*, 4: 15-33. http://www.csulb.edu/journals/jecr/p_i.htm
11. Schmidt, Roy C., 1997. Managing Delphi surveys using nonparametric statistical techniques. *Decision Sci.*, 28: 763-773. DOI: 10.1111/j.1540-5915.1997.tb01330.x