

## How e-business influences on time customer delivery: An empirical investigation on insurance industry

Naser Azad, Sheima Tahmasebi Tehrani and Somayeh Hozouri\*

*Department of Management, Islamic Azad University, South Tehran Branch, Tehran, Iran*

### CHRONICLE

#### *Article history:*

Received June 22, 2013  
Received in revised format  
28 August 2013  
Accepted 21 September 2013  
Available online  
September 23 2013

#### *Keywords:*

*E-business*  
*Business activity*  
*Principles of business activity*

### ABSTRACT

During the past few years, e-business has revolutionized insurance industry and it has become as one of the most important techniques to reach global market. This paper presents an empirical investigation to find important factors influencing on time delivery to customers. The proposed study of this paper designs a questionnaire consists of 28 items in Likert scale, which was reduced to 24 and using principle component analysis, the study finds different important factors. Cronbach alpha is calculated as 0.94. In addition, Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Approx. Chi-Square are 0.882 and 2462, respectively. The study determines four important factors including dynamic organization, environment opportunities, flexible structure and customer relationship management.

© 2013 Growing Science Ltd. All rights reserved.

## 1. Introduction

During the past few years, there have been substantial changes on many industries due to recent advances on technology. E-commerce has broken the borders among countries, helping people purchase different services, electronically. Many firms find that their ability to respond to unexpected changes in the market is a key factor in survival and the ability to adjust e-business processes to customer preferences has become an essential thing for online systems (Basu & Myulle, 2011; Phillips & Wright, 2009).

Wu and Zhong (2009) investigated a case study of three large iron and steel manufacturing enterprises in China to identify a mechanism, which enables e-business technology to improve enterprise competitiveness. They developed the concept of application capability of e-business from a process-oriented perspective, and investigated the effect of the application capability of e-business on the relationship between e-business resources and enterprise competitiveness. They explained that e-

\*Corresponding author.

E-mail address: saho84@rocketmail.com (S. Hozouri)

business resources were necessary, rather than sufficient, to help enterprise competitiveness. They also reported that an enterprise could implement e-business technology to enhance its competitiveness only when its e-business resources and application capability of e-business were effectively synthesized.

Hussain et al. (2011) presents a technique, determines the negative consequences of forming e-business associations. Unlike other methods, the proposed model captures various kinds of events and their uncertainties to detect the financial risk by implementing the convolution operator and expressing it as a probabilistic measure rather than as a crisp financial value. E-business plays essential role in modern economic networks because of its shorter cycle time and faster information transactions (Lai & Yang, 2009). Shin and Park (2009) provided a method to detect both, to create potentially competitive variants, and to evaluate them, quantitatively and used it in an e-auction case in Korea to illustrate the empirical application of the proposed method. Johnson et al. (2007) presented some findings from an exploratory study that analyzed the outcomes of e-business technology implementation in the supply chain. They examined how industry context, firm characteristics and firm-level strategic resources, such as purchasing teams, impact the exploitation of e-business technologies and the relationship between e-business technology implementation and firm performance. Wu et al. (2011) tried to understand the capabilities influence a firms' capability to build e-business success and enjoy bigger organizational performance, where firm-level e-business success was measured by e-business service ability and IT-enabled collaborative advantage. Osmonbekov (2010) investigated the impact of social enforcement, technology–relationship fit and the mediating role of reseller benefits. Lai and Chen (2009) measured e-business dependability in terms of employee perspective. Lin and Lin (2008) investigated determinants of e-business diffusion by performing a test of the technology diffusion perspective. Lai and Ong (2010) evaluated and managed employees for embracing change by performing a multiple-item scale to determine employee readiness for e-business. Katsanakis and Kossyva (2012) investigated whether firms could co-operate and compete at the same time (co-opetition), based on a C-Business system, and whether this could lead to a co-beneficial relationship. Cegarra-Navarro et al. (2007) investigated the relative importance and effect of the four learning processes introduced by Huber on different levels of e-business, through an empirical investigation of 130 SMEs in the Spanish telecommunications sector. They suggested that knowledge acquisition is necessary to progress from relational level to internal level. Soto-Acosta and Meroño-Cerdan (2008) analyzed e-business value creation from a resource-based perspective by developing a conceptual model, grounded in the resource-based theory, for assessing e-business value creation. Nurmilaakso (2008) investigated adoption of e-business functions and migration from EDI-based to XML-based e-business frameworks in supply chain integration. Xirogiannis and Glykas (2007) built a reasoning mechanism as a novel supplement to e-business strategy formulation exercises. Voola et al. (2012) investigated the effects of market orientation, technological opportunism, and e-business adoption on performance.

## **2. The proposed method**

This paper presents an empirical investigation to find important factors influencing on time delivery to customers. The proposed study of this paper designs a questionnaire consists of 28 items in Likert scale. The factors include Information Quality, Speed-risk fit, Decision Agility, Perceived trust and reliability, knowledge sharing, Pricing Strategies, Consumer Satisfaction, Market Awareness, Work Efficiency and continuous improvement, Flexibility, Internet Utilization, Innovation utilization, Operational Support, Competitive Advantage, Distinguished and decentralized Services, Staff learning, Internal Teams, Reaction to Changes, Market Orientation, Financial performance, Technological opportunism, Structure, Rewards and promotions, Demand Flexibility, Participation and commitment of staff, Information integration infrastructure, Management of information and communications and Use of technology. Cronbach alpha is calculated as 0.94. In addition, Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Approx. Chi-Square are 0.882 and 2462, respectively. Table 1 demonstrates communalities of the factors.

**Table 1**  
Communalities

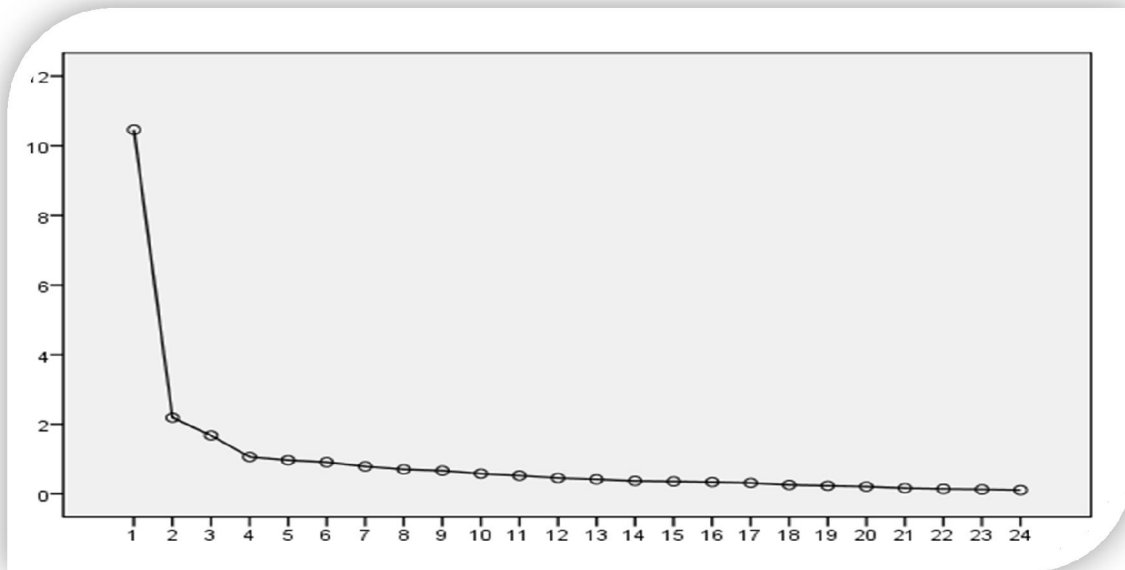
	Initial	Extraction
VAR00001	1.000	.659
VAR00002	1.000	.625
VAR00003	1.000	.580
VAR00004	1.000	.627
VAR00005	1.000	.527
VAR00007	1.000	.742
VAR00008	1.000	.624
VAR00009	1.000	.685
VAR00011	1.000	.511
VAR00012	1.000	.671
VAR00013	1.000	.584
VAR00014	1.000	.645
VAR00015	1.000	.552
VAR00016	1.000	.587
VAR00017	1.000	.682
VAR00018	1.000	.704
VAR00019	1.000	.727
VAR00020	1.000	.779
VAR00023	1.000	.660
VAR00024	1.000	.571
VAR00025	1.000	.717
VAR00026	1.000	.689
VAR00027	1.000	.685
VAR00028	1.000	.562

As we can observe from the results of Table 1, all factors maintain communalities of well above 0.50. In addition, Table 2 summarizes the results of total variance explained for different items.

**Table 2**  
The summary of total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.460	43.585	43.585	10.460	43.585	43.585	5.676	23.652	23.652
2	2.193	9.139	52.725	2.193	9.139	52.725	4.993	20.802	44.454
3	1.679	6.994	59.719	1.679	6.994	59.719	2.607	10.863	55.317
4	1.061	4.420	64.140	1.061	4.420	64.140	2.117	8.823	64.140
5	.967	4.031	68.171						
6	.909	3.786	71.957						
7	.787	3.280	75.237						
8	.704	2.933	78.170						
9	.665	2.772	80.942						
10	.580	2.415	83.357						
11	.523	2.178	85.536						
12	.456	1.900	87.436						
13	.416	1.735	89.171						
14	.372	1.548	90.719						
15	.354	1.477	92.196						
16	.338	1.406	93.603						
17	.312	1.299	94.901						
18	.254	1.058	95.959						
19	.231	.961	96.920						
20	.206	.858	97.777						
21	.163	.677	98.455						
22	.139	.581	99.036						
23	.125	.521	99.557						
24	.106	.443	100.000						

In addition, Fig. 1 shows Scree plot of different factors and the results indicate that we can extract four important factors.



**Fig. 1.** The results of Scree plot

### 3. The results

In this section, we present details of the findings of the implementation of factor analysis. The study determines four important factors including dynamic organization, environment opportunities, flexible structure and customer relationship management.

#### 3.1. The first factor: Dynamic organization

Dynamic organization includes eight sub-factors, which are summarized in Table 3 as follows,

**Table 3**  
The summary of factors associated with dynamic organization

Option	Factor weight	Eigenvalues	% of variance	Accumulated
Knowledge sharing	0.746			
Decision Agility	0.785			
Reaction to Changes	0.854	3.474	57.908	57.908
Speed-risk fit	0.631			
Work Efficiency and continuous improvement	0.550			
Flexibility	0.708			
Pricing Strategies	0.652			
Information Quality	0.602			

Cronbach alpha = 0.85

The information of Table 3 indicates that reaction to changes plays the most important role followed by decision agility and knowledge sharing.

#### 3.2. The second factor: Environment opportunities

Environment opportunities are considered as the second most important factors influencing e-business with seven sub-factors summarized in Table 4. In terms of different important factors, Internet utilization is the most influential factor followed by competitive advantage, internal teams, innovation utilization.

**Table 4**

The summary of factors associated with environment opportunities

option	Factor weight	eigenvalues	% of variance	Accumulated
Competitive Advantage	0.652			
Internet Utilization	0.727	2.856	57.114	57.114
Management of information and communications and Use of technology	0.577			
Innovation utilization	0.578			
Internal Teams	0.612			
Market Awareness	0.511			
Distinguished and decentralized Services	0.501			

Cronbach alpha = 0.81

### 3.3. The third factor: Flexible structure

The third factor is associated with flexibility of organizational structure, which includes five factors presented in Table 5 as follows,

**Table 5**

The summary of factors associated with flexible structure

option	Factor weight	eigenvalues	% of variance	Accumulated
Market Orientation	0.749	2.522	63.051	63.051
Taking advantage of information technology	0.743			
Flexibility	0.511			
Organizational structure	0.691			
Financial performance	0.501			

Cronbach alpha = 0.80

As we can observe from the results of Table 5, market orientation is the most important factor followed by taking advantage of information technology, operational structure, flexibility and financial performance.

### 3.4. The fourth item: Customer relationship management

Customer relationship management is the last influential item, which influences on our e-business success. This item includes four factors, which are summarized in Table 6 as follows,

**Table 6**

The summary of factors associated with customer relationship management

Option	Factor weight	eigenvalues	% of variance	Accumulated
Staff learning	0.729			
Rewards and promotions	<b>0.502</b>			
Perceived trust and reliability	0.806	1.574	52.469	52.469
Customer satisfaction	<b>0.602</b>			

Cronbach alpha = 0.55

The results of Table 6 indicate that perceived trust and reliability is the most important item followed by staff learning, customer satisfaction and rewards and promotions.

## 4. Conclusion

In this paper, we have presented a survey on detecting important factors influencing insurance industry on implementation of e-business. The survey has used principal component analysis and extracted four important factors. Dynamic structure has been the first important factor with eight sub-components, where reaction to changes plays the most important role followed by decision agility and knowledge sharing. In our survey, environment opportunities were the second factor influencing e-business with seven sub-factors where internet utilization was considered as the most influential factor followed by competitive advantage, internal teams, innovation utilization. The third factor is associated with flexibility of organizational structure, which includes five factors and finally,

customer relationship management is the last important factor where perceived trust and reliability has been the most important item followed by staff learning, customer satisfaction and rewards and promotions.

## References

- Basu, A., & Muylle, S. (2011). Assessing and enhancing e-business processes. *Electronic Commerce Research and Applications*, 10(4), 437-499.
- Cegarra-Navarro, J. G., Jiménez, D. J., & Martínez-Conesa, E. Á. (2007). Implementing e-business through organizational learning: an empirical investigation in SMEs. *International Journal of Information Management*, 27(3), 173-186.
- Hussain, O., Dillon, T., Hussain, F. K., & Chang, E. (2011). Probabilistic assessment of financial risk in e-business associations. *Simulation Modelling Practice and Theory*, 19(2), 704-717.
- Johnson, P. F., Klassen, R. D., Leenders, M. R., & Awaysheh, A. (2007). Utilizing e-business technologies in supply chains: the impact of firm characteristics and teams. *Journal of Operations Management*, 25(6), 1255-1274.
- Katsanakis, I., & Kossyva, D. (2012). C-Business: A theoretical framework for the implementation of co-opetition strategy in e-business. *Procedia-Social and Behavioral Sciences*, 58, 259-268.
- Lai, J. Y., & Chen, W. H. (2009). Measuring e-business dependability: The employee perspective. *Journal of Systems and Software*, 82(6), 1046-1055.
- Lai, J. Y., & Yang, C. C. (2009). Effects of employees' perceived dependability on success of enterprise applications in e-business. *Industrial Marketing Management*, 38(3), 263-274.
- Lai, J. Y., & Ong, C. S. (2010). Assessing and managing employees for embracing change: A multiple-item scale to measure employee readiness for e-business. *Technovation*, 30(1), 76-85.
- Lin, H. F., & Lin, S. M. (2008). Determinants of e-business diffusion: a test of the technology diffusion perspective. *Technovation*, 28(3), 135-145.
- Osmonbekov, T. (2010). Reseller adoption of manufacturers'e-business tools: The impact of social enforcement, technology–relationship fit and the mediating role of reseller benefits. *Journal of Business Research*, 63(3), 217-223.
- Nurmilaakso, J. M. (2008). Adoption of e-business functions and migration from EDI-based to XML-based e-business frameworks in supply chain integration. *International Journal of Production Economics*, 113(2), 721-733.
- Phillips, P. A., & Wright, C. (2009). E-business's impact on organizational flexibility. *Journal of Business Research*, 62(11), 1071-1080.
- Shin, J., & Park, Y. (2009). On the creation and evaluation of e-business model variants: The case of auction. *Industrial Marketing Management*, 38(3), 324-337.
- Soto-Acosta, P., & Meroño-Cerdan, A. L. (2008). Analyzing e-business value creation from a resource-based perspective. *International Journal of Information Management*, 28(1), 49-60.
- Voola, R., Casimir, G., Carlson, J., & Anushree Agnihotri, M. (2012). The effects of market orientation, technological opportunism, and e-business adoption on performance: A moderated mediation analysis. *Australasian Marketing Journal (AMJ)*, 20(2), 136-146.
- Wu, J. N., & Zhong, W. J. (2009). Application capability of e-business and enterprise competitiveness: A case study of the iron and steel industry in China. *Technology in Society*, 31(3), 198-206.
- Wu, J. N., Zhong, W. J., & Mei, S. E. (2011). Application capability of e-business, e-business success, and organizational performance: Empirical evidence from China. *Technological Forecasting and Social Change*, 78(8), 1412-1425.
- Xirogiannis, G., & Glykas, M. (2007). Intelligent modeling of e-business maturity. *Expert Systems with Applications*, 32(2), 687-702.