

A STUDY ON THE IMPACTS OF ACTIVITY IN BUSINESSES RELATED TO E-COMMERCE

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ABSTRACT

E-business, as a subset of information and communication technology has experienced a great growth in the last decade. Generally, the policy approach of the majority of the commercial institutions is to accept and apply E-business in order to enter global market and attract new, effective and functional customers in this regard. According to Zuas, E-business includes information exchange through the Internet in any of the units of supply chain, either in a company or between companies, between company and customer or between private and public sectors of economy, either money is paid or there is no money involved. This research is applied based on its objective and based on data collection, it is of descriptive-survey type. The statistical population in this research included 35 senior managers and experts of information technology in Bank Sepah Headquarters. Considering the small size of the statistical population survey method of sampling was used. The results suggested that the influential factors in failure of E-businesses is the lack of the fundamental knowledge of E-business, uninfluential advertisement, inability to meet the customers' needs, improper use of financial resources and emergence of change in the behavior of the customers. And on the other hand, successful business are often a combination real and virtual that have benefited from a strong supply change and also a range of available customers. In this research, it is tried to study the impact of activity rates in businesses related to E-commerce.

Keywords: E-Business, Information Technology, E-Commerce, Supply Chain, Global Markets.

INTRODUCTION

Statement of Problem

In his 2008 book “the Third Wave”, Alvin Toffler introduced E-business as: an instrument that paves the way for the businesses to reach the markets and it is a path that helps the users to reach the effective and efficient customers. According to Turian in 2004, E-business has a broader field comparing to E-commerce, which also includes customer services (customer relation management) and processes between commercial partners (supply chain management). Sarlak also believes that E-business is a set of activities related to the business issues such as marketing, financial, sell and buy, customer relation, after-sales service, cooperation with investors, which are carried out on the Internet. Results indicate that presence of an Internet address, communication systems being up in the organization, managing physical and financial resources, preparation for production, size and level of goods production, consumer protection, presence of custom tariffs, transportation system, credit cards development and organizational culture are among the main influential components in implementing E-business. (Shahrivar, 2015) Accepting E-business technology depends on several factors: international considerations

including export and import and technology have a boosting impact on each other in E-business interaction. Presence of strong communication network that entails a high confidence, since a high volume of information could be provided rapidly. The skill of human resources in businesses and the volume of invests in research and development and salary rate are among the factors influencing E-business (Akbari, 2002; Celik et al., 2009).

ank Sepah Headquarters is one of the most powerful banks in Iran, which retains a strong IT system. In addition to the E-banking services, this organization is always trying to attract more customers and it has been trying to attract customers and carry out various processes of advertisement, online buy and sell, attracting and maintaining customer, etc. through the Internet. However, subsequent to management changes this process was halted for a long time. However, after some years, this organization is seriously pursuing E-business activities and success in this regard has been defined as one of the long-term objectives of the organization. Hence, the main question of this research could be proposed as:

How is the ranking of these factors in applying fuzzy TOPSIS technique?

Research Objectives

1. Identifying factors impacting E-business
2. Ranking the factors influencing success in E-business
3. Evaluating the current condition of the variables

Research Hypotheses

1. E-business efficiency influences E-business success.
2. E-business innovation does not influences E-business success.
3. The potentiality to provide value by the partners influences E-business success.
4. Strengthening customer relation influences E-business success.

Research Theoretical Framework

The following conceptual model is based on Sambamurthy et al. (2013). Hence, in this research, the efficiency, innovation, potentiality to provide value by the partners and strengthening customer relation are considered as the independent variables and E-business success including efficiency, innovation, potentiality to provide value by the partners and strengthening customer relation are considered as the dependent variable.

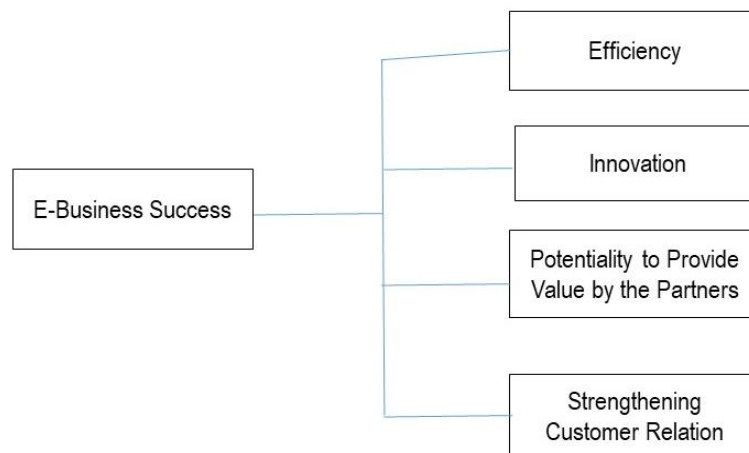


Diagram 1.2. Research Conceptual Model (Lal,2005)

- *E-Commerce*

New digital economy which is the result of the advancements in network technologies leads to emergence of a new set of regulations and values that is determined by the its agents' behavior. These agents could be distinguished in the form of the commercial or non-profit organizations or other players in the market such as individual and group consumers. Digital markets provide new and unlimited opportunities for those who work in it. Realization of these opportunities causes new challenges. Players in digital economy understand that in order to gain benefit, the traditional approaches for business require a redefinition. As a result, traditional concepts of business are abandoned and the concept of organization is substituted with new entities that reflect the intrinsic challenges in the new economic era. During industrial revolution, companies incredibly changed from integrative rural societies into centers of independent urban organizations. By the introduction of information and communication technology and fast emergence of E-business paradigms in 1980s and 1990s, this turned more global and more cooperative. Companies in the digital era are in the form of networks; that is, they are interconnected based on various levels (Kiang, 2001).

- *E-Commerce Types*

1. Business-to-Business Trade Model (B2B): In this model, the purchaser and the seller are both legal entities, either business-to-business or businessperson to businessperson.
2. Business-to- Consumer Trade Model (B2C): In this model, the business or the businessperson is the consumer of the product or service. The main share of E-commerce of this type is retail. This type of trade has increased by the expansion of web and now, any type of goods from sweets to automobile to software could be easily purchased online. The trade between companies and consumers began by the launch of websites such as Amazon and CDNow.
3. Business-to-Government Trade Model (B2G): In this model, the seller is the company and the buyer is the government, such as buying or selling goods or services from companies to the government. Supplying the needs of the government by the companies and paying taxes are among the cases that could be included in this group.
4. Consumer-to-Consumer Trade Model (C2C): In this model, both side of the deal, both the seller and the purchaser, are consumers (Kashani & Saeedi, 2011).

- *Online Sale*

In the past, the needs of the consumers led to formation of new forms of goods retail. Ease of purchase and saving time and costs first took place by the formation of Refah Chain Stores that would provide the customers with a large number of goods in a proper environment with long working hours and without wasting too much time. On the other hand, creating very large sales centers that would offer groceries, cooked foods, general goods and a large number of various goods in one place, took large steps towards creating customer satisfaction (Filos & Banahan, 2000).

- *Online Sale Success Factors*

Online sale is successful when product and service providers can provide higher economic interests for the customers. Displaying products in a fancy website with different and even attractive photos in an online sale per se is not enough. This is reached by considering the



needs of customers, market research, and scientific marketing, which include the following on the Internet:

- Efficient use of search engines on the Internet
- Enough and proper information on the products
- Special offers compatible with the customers' needs in any part of the world
- Updated information on the prices
- Creating a virtual store (Chen, 2005).

In the E-commerce literature, a commercial center includes a set of different booths. These booths are categorized based on different products and services and in addition to providing customers with services and goods, its peripheral attractions are also among the specifications of these booths, so that the purchasers of such centers are satisfied with their real-time purchases and they enjoy what they desire (Ahmadi & Virginiaari, 2002).

• *E-Business*

In today's world, "e" entails the high influence of the Internet on all aspects and parts of the society such as industry, trade and economy. IT has affected the all fields of economy, trade and employment, so that there is an electronic edition for each commercial phenomenon; E-banking, E-cash, E-government, E-economy, E-market, E-business, E-commerce, E-employee and almost anything (Daneshju, 2016; Aghaei, 2002).

REVIEW OF LITERATURE

1. Haji Karimi and 'Azizi (2008) modeled the factors impacting the application of E-commerce in small and medium enterprises. In a field study, they studied the impact of variables, such as organizational readiness, market dynamicity, advantages and disadvantages of E-commerce and innovation capacity, on the application of E-commerce. To reach this, a questionnaire including 46 items was designed and distributed among 7 different industries. The results from application of factor analysis suggest that the aforementioned factors influence the application of E-commerce with effect levels of 0.457, 0.404, 0.421, -0.153 and 0.334. (Haji Karimi and Azizi, 2008)
2. Daneshju (2006), studied the factors influencing E-commerce websites. In this research, in order to evaluate the factors impacting the assessment of website, aspects of website view, website calibration, website content, trustworthiness and technical variables were used. The derived results indicated the positive and significant impact of all five factors on E-commerce websites evaluation and among them, the factors of trustworthiness and technical variables had the highest roles (Daneshju, 2016).
3. In her master's thesis, Taqavi Shavazi (2008) studied the organizational conditions role on E-commerce in companies producing home appliances. In this research, in order to assess the organizational conditions, aspects of the environmental factors, organizational factors and managerial characteristics. The results from application of student's T-test and Regression suggest the positive and significant impact of organizational condition and all its three aspects on E-commerce development (Taqavi Shavazi, 2008).
4. In a study, Haqshenas and Sa'idi (2014) ranked the aspects of competitiveness in carpet industry by applying fuzzy TOPSIS and ultimately, indices of "market share", "E-commerce", "knowledge creation", "industry credit", and "the skills and expertise of the



- businessmen” were chosen as the most important and effective sub-criteria of carpet industry competitive power development (Asgharpour, 2006).
5. In their study entitled “Identification and Ranking the Factors Impacting Human Resources Efficiency using Fuzzy TOPSIS Technique”, Mehrmanesh et al. (2014) identified the components of human resources efficiency using the binominal test and concluded that managerial factors, social-mental, cultural, environmental, personal and economic factors were the most influential factors in human resources efficiency. Ultimately, by applying fuzzy TOPSIS technique, these factors were ranked and factors of “paying proper cash rewards”, “technology and technical knowledge” and “job development and promotion” were chosen as the most significant sub-criteria (Kotler, 2003).
 6. In his master’s thesis entitled “Compiling and Rating Strategies Chosen by Choka Company using Fuzzy TOPSIS Technique”, Mirzai Chaboki ranked the sureties of this organization through QSPM methods and fuzzy TOPSIS, and the results suggested that establishing “institutionalization of EFQM approach in all organizational aspects” with both methods were chosen as the main strategies. Additionally, the results from applying AHP technique also indicated that fuzzy TOPSIS technique provides more acceptable results, comparing to the QSPM technique.

METHODOLOGY

After preparing the subject, the researcher should consider the research method. The main objective of choosing the research method is to determine what method is required to study a certain subject and the researcher should adopt what method in order for the researcher to reach the answer for the question or questions in a quicker more accurate way. Considering the fact that this research tries to collect data for the hypotheses test or answer the questions related to the current situation, the research method used in this plan is descriptive and of survey type. “Descriptive research” includes a set of methods whose objective is to describe the situation or studied phenomena. Conducting descriptive research could be for better understanding of the current situation or helping with the decision-making process. (Khaki, 2015) In addition, the current research is considered as applied research based on the objective, since the application of knowledge create in the practice.



RESEARCH FINDINGS

The data collected in any research are meaningless numbers and statistics is used in order to form meaning in them in order to reach the research objectives. Data analysis as a part of the scientific research method is one of the main bases of any study and using it, all research activities are controlled and guided until reaching a result.

In this chapter, initially, by studying the factors impacting E-business success and subsequently these factors are ranked using fuzzy TOPSIS technique.

Kolmogorov-Smirnov Test

This test is used to test the data distribution in the statistical population being normal. The derived results are presented in Table 1:

Table 1. Derived Results from Kolmogorov-Smirnov Test

Research Results	Sig. Value	Test Statistic Value
E-Business Success	.,000	6,582
E-Business Efficiency	.,13	4,326
E-Business Innovation	.,000	9,256
The Potentiality to Provide Value by the Partners	.,000	4,469
Strengthening Customer Relation	.,22	3,130

As it could be observed from Table 1, the significance level for all the research variables have an error level lower than 0.05. Hence, the data distribution in the statistical population is not normal.

First Hypothesis

H₀: There is no significant and positive relationship between E-business efficiency and its success.

H₁: There is a significant and positive relationship between E-business efficiency and its success.

Table 2. Studying the Relationship between “E-Business Efficiency” and “E-Business Success” Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.153 ^a	4	.000
Likelihood Ratio	4.214	2	.000
Linear-by-Linear Association	9.021	2	.017
N of Valid Cases	35		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 3.73.

As it could be observed, the error level (0.000) is lower than 0.05. Hence, at 0.95, H₀ is rejected and the positive and significant relationship between E-business efficiency and its success.

Now, Friedman test was used in order to study E-business efficiency impact on E-business success:

Table 3. Derived Results from Friedman Test

Test Statistics ^a	
N	35
Chi-Square	41.714
Df	1
Asymp. Sig.	.000

a. Friedman Test

The above table shows that the derived error value is lower than the research error level. Hence, the positive and significant relationship between E-business efficiency and its success is approved.

Second Hypothesis

H₀: There is no significant and positive relationship between E-business innovation and E-business success.

H₁: There is a significant and positive relationship between E-business innovation and E-business success.

Table 4. Studying the Relationship between “E-Business Innovation” and “E-Business Success”

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.315*	2	.000
Likelihood Ratio	6.226	2	.015
Linear-by-Linear Association	5.937	1	.000
N of Valid Cases	35		

a. 4 cells (40%) have expected count less than 5. The minimum expected count is .37.

As it could be observed, the error level (0.000) is lower than 0.05. Hence, at 0.95, H_0 is rejected and the positive and significant relationship between E-business innovation and its success. Now, Friedman test was used in order to study E-business innovation impact on E-business success:

Table 5. Derived Results from Friedman Test

Test Statistics ^a	
N	35
Chi-Square	44.826
Df	1
Asymp. Sig.	.011

a. Friedman Test

The above table shows that the derived error value is lower than the research error level. Hence, the positive and significant relationship between E-business innovation and its success is approved.

Third Hypothesis

H_0 : There is no significant and positive relationship between potentiality to provide value by the partners and E-business success.

H_1 : There is a significant and positive relationship between potentiality to provide value by the partners and E-business success.

Table 6. Studying the Relationship between “Potentiality to Provide Value by the Partners” and “E-Business Success”

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.145*	3	.016
Likelihood Ratio	8.263	3	.000
Linear-by-Linear Association	5.123	1	.000
N of Valid Cases	35		

a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is 1.14.

As it could be observed, the error level (0.000) is lower than 0.05. Hence, at 0.95, H_0 is rejected and the positive and significant relationship between potentiality to provide value by the partners and E-business success.

Now, Friedman test was used in order to study potentiality to provide value by the partners impact on E-business success:



Table 7. Derived Results from Friedman Test

Test Statistics ^a	
N	35
Chi-Square	63.586
Df	3
Asymp. Sig.	.000

a. Friedman Test


The above table shows that the derived error value is lower than the research error level. Hence, the positive and significant relationship between potentiality to provide value by the partners and its success is approved.

Fourth Hypothesis

H₀: There is no significant and positive relationship between strengthening customer relation and E-business success.

H₁: There is a significant and positive relationship between strengthening customer relation and E-business success.

Table 8. Studying the Relationship between “Strengthening Customer Relation” and “E-Business Success”
Chi-Square Tests



Chi-Square Tests			
	Value	Df	Sig. (2-sided)
Pearson Chi-Square	6.441*	3	.000
Likelihood Ratio	5.922	3	.000
Linear-by-Linear Association	8.634	1	.000
N of Valid Cases	35		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is .37.

As it could be observed, the error level (0.022) is lower than 0.05. Hence, at 0.95, H₀ is rejected and the significant relationship between strengthening customer relation and E-business success.

Now, Friedman test was used in order to study strengthening customer relation impact on E-business success:

Table 9. Derived Results from Friedman Test

Test Statistics ^a	
N	35
Chi-Square	63.462
Df	3
Asymp. Sig.	.004

a. Friedman Test

The above table shows that the derived error value is lower than the research error level. Hence, the positive and significant relationship between strengthening customer relation and its success is approved.

CONCLUSION

Results from Testing the Hypotheses

In this research, initially, Kolmogorov-Smirnov test was used to test the data distribution in the statistical population being normal. The derived results indicate that the data distribution is not normal.

Chi Square Test

Initially, by using Chi square, the relationship between E-business efficiency, E-business innovation, potentiality to provide value by the partners and strengthening customer relationship with E-business success is studied:

Table 10. Derived Results from Chi Square Test

Path	Value	Sig.	Test Result
E-business Efficiency with E-Business Success	۶,۱۵۳	۰,۰۰۰	Positive and Significant Relationship
E-business Innovation with E-Business Success	۸,۳۱۵	۰,۰۰۰	Positive and Significant Relationship
Potentiality to Provide Value by the Partners and E-Business Success	۵,۱۴۵	۰,۰۱۶	Positive and Significant Relationship
Strengthening Customer Relation and E-Business Success	۶,۴۴۱	۰,۰۰۰	Positive and Significant Relationship

Friedman Test

This test was used to study the impact of variables on each other.

Table 11. Derived Results from Friedman Test

Path	Value	Sig.	Test Result
E-business Efficiency with E-Business Success	۰,۰۵	۰,۰۰۰	Positive and Significant Relationship
E-business Innovation with E-Business Success	۰,۰۵	۰,۰۱۱	Positive and Significant Relationship
Potentiality to Provide Value by the Partners and E-Business Success	۰,۰۵	۰,۰۰۰	Positive and Significant Relationship
Strengthening Customer Relation and E-Business Success	۰,۰۵	۰,۰۰۴	Positive and Significant Relationship

1. The first hypothesis test: E-business efficiency impacts the E-business success: Considering the derived significance level (sig.<0.05) it was suggested that E-business efficiency has a significant effect on E-business success. Considering the positive sign of correlation coefficient, it could also be said that this impact is direct; that is, increase in the efficiency of E-business leads to a higher success. In other words, the first research hypothesis is approved.
2. The second hypothesis test: E-business innovation impacts the E-business success: Considering the derived significance level (sig.<0.05) it was suggested that E-business innovation has a significant effect on E-business success. Considering the positive sign of correlation coefficient, it could also be said that this impact is direct; that is, increase in the innovation of E-business leads to a higher success. In other words, the second research hypothesis is approved.



3. The third hypothesis test: Potentiality to provide value by the partners impacts the E-business success: Considering the derived significance level ($\text{sig.} < 0.05$) it was suggested that potentiality to provide value by the partners has a significant effect on E-business success. Considering the positive sign of correlation coefficient, it could also be said that this impact is direct; that is, increase in the potentiality to provide value by the partners leads to a higher success. In other words, the third research hypothesis is approved.
4. The fourth hypothesis test: Strengthening customer relationship impacts the E-business success: Considering the derived significance level ($\text{sig.} < 0.05$) it was suggested that Strengthening customer relationship has a significant effect on E-business success. Considering the positive sign of correlation coefficient, it could also be said that this impact is direct; that is, increase in the Strengthening customer relationship leads to a higher success. In other words, the fourth research hypothesis is approved.

Recommendation

Considering the derived results from data analysis, this research provides recommendations in two parts:

Loyalty programs: Considering the positive impact of this variable on E-business success, the managers in Bank Sepah Headquarters are recommended to use quality management systems, such as EFQM, Six Sigma and ISO, in order to improve the services quality and also, by holding periodic meetings with the target customers, they identify the needs and requests of the customers and provide services based on them.

Marketing and Advertisement: Marketing, sales and advertisement are other factors impacting E-business success. Hence, creating a good image for the services and the organization in order to increase the brand identity, using up-to-date marketing techniques, such as international business and E-commerce, are considered as some ways of improving marketing and advertisement process.

Complementary Services: The third influential factors in E-business success is complementary services. Regarding this, the managers in the organization are recommended to identify the brand, by considering the target market in order to provide new services and by conducting broad advertisement and marketing. Considering the new players, such as private banks like Parsian Bank, providing new and complementary services could play a vital role in competitiveness of Sepah.

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