

The Impact of Web-Based Information Systems on Customer's Satisfaction in Stock Exchange (Case Study: Borujerd Stock Broker)



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ABSTRACT

In the Competitive environment governing the businesses with technological advances, managers need access to data and information about the internal activities of organization and its hidden knowledge more than ever (Parishan&Bazaei. 2015). This descriptive – survey study has been done, aimed to Investigating the Impact of Web-Based Information Systems on Customer's Satisfaction in Stock Exchange, by random sampling with a sample of 243 people of the population of Borujerd city Stock Broker Customers. To collect information from 2 standard questionnaires of Web-Based Information Systems and Customer's Satisfaction with reliability of 0/875 & 0/926 used. To prove the hypotheses, Kolmogorov - Smirnov and regression test by spss22 was used. The findings showed the Web-Based Information Systems (and its dimensions: system friendly, external connections, user's feedback networks, system security) has a significant and positive effect on Satisfaction of Borujerd Stock Broker Customers. The user's feedback networks have the greatest impact on Customer's Satisfaction of Borujerd Stock Broker (value of 0/717). As a result, by web-based information systems can be development in the field of buying and selling, attracting, satisfaction, loyalty of customers and the sales of all internet products.

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KEYWORDS: *Customer's Satisfaction, Web-Based Information Systems, Dimensions of Web-Based Information Systems, external connections, user's feedback networks, Borujerd Stock Broker Customers*

Introduction

More than eighty percent of the daily work of managers spends for information, including: receiving information, communication and use of

information on a range of different affairs. Because information is the basis of all activities of an organization, so, should be systems that

generate and manage the information. The systems produce and manage the information. The aim of such systems is creating ensure to providing correct and reliable information in needed times and in a usable form. Such systems have been named information systems. Today, with the help of the Internet and IT benefits, many information systems are moving toward Web-based information system which gives them access to multiple channels in the existing competitive environment. Web-based information systems based on technology of information systems including databases and integrated transaction processing systems (Mentzas, 1995). In the earlier third millennium and with reflect changes in business environment (internal and external) by shifting approach, organizations have become from product-centric to customer-centric. One of the most important factors in this approach is the monitoring and improving customer satisfaction.

Problem Statement

Information systems in addition to helping to coordinate in organizational operations, helps managers and employees to analyze or simulate the organization's issues (Laudon, Jane P.rice, 2010, 26). Website is a set of interconnected pages that puts a lot of information in the form of text, image, sound, and movies to the viewer. Having a web site can created all information about an organization, such as biography, sphere of activity, and products in the form of a comprehensive catalog, the difference is that unlike normal catalogs will not need to print and distribute the catalog and easily and in the least time for all persons who are connected to the Internet, will be available. In addition, people with web browsing and for achieved more information if necessary, can communicate through the Internet and sent a letter to the organization (Mentzas, 1995).

Funget al(2000), kavoosi&saghaei (2005) in their investigations know the dimensions of impact of web-based information systems consists of

7dimension: completeness of the information, accuracy of information, system accessibility, system friendly, external connections, user's feedback networks, system security. In this study, customer's satisfaction considered as the dependent variable. Some researchers as shahin&teymori (2008), Wang et al (2003), know customer's satisfaction consists of three dimensions of customer's loyalty, quality of service and expectations of customers. Old large companies as General Motors, IBM, sincecouldn't adapt themselves with new marketing strategies, have lost much of its market share. If the company has a sales perspective, it takes several years to enter into partnership that have a marketing point of view. The aim is that the customer's satisfaction becomes blurred and Purdue of the company, customer's satisfaction is not a fad. according to marketing analyst it become as part of a vital American company and such as organizational culture, information technology and strategic planning is an integral part of the company (kotler et al, 2001, 35).

Kotler (2010)defines customer's satisfaction as the degree to which actual performance of a company to meet customer's expectations. Kotler believed that if the company's performance to meet expectations; customer feels satisfaction and otherwise feels dissatisfaction (divandari&delkhosh,2005. 188). Anderson et al (1994) states that customer's satisfaction is the degree of utility that customer receive because of the different characteristics of the products. Customer's satisfaction leads to customer's loyalty and thus enhances the company's reputation, as well as increased future profitability for the company.

In general, this research wants to answer the questions that what is the impact of web-based information systems on customer's satisfaction?

1-2. Significance of the study

Information is a valuable and original source of an organization's manager. As human resources, material and financial resources in the production process has a specific role and value. Technology

and electronic and computer instruments in the last decade caused the explosion phenomenon of information and it is certainly has an important impact on the orientation of communities and their required information. Today, not only senior and executives managers, but all segments of society, such as researcher, scholars and businessmen are forced to use information. The users of information system used information as a valuable resource, both capital stone and labor. Since information are valuable and important, considered as the basis for all organization's activities, so the system should be set up, so that they can produce and manage them. The ultimate goal of such systems is to ensure the authenticity, validity and reliability of information that is available at the required time and change in useable form(divandari&delkhosh,2005).

Nowadays, information systems play a vital role in all areas of activity of enterprise. Due to successful companies show that all of them are equipped with information systems to their daily activities. The real challenge that companies face is not only to use computer-based information systems, but the fundamental purpose is effective use of information systems in management. Web-based information systems that are as valuable resource increase the ability of managers and employees and lead to the effective realization of the organization's goals with high Productivity.

Web-based applications convert the web from simple pages into multi-dimensional world that possibility of individual and group communication has provided. Social networks were created quickly and widely welcomed by users (Laudon, Jane P. 2010). Perhaps today ask anyone what the site, has some answer, but we all know that what is the web site really and what is composed of resources and technologies? Due to the importance of this study by the researcher has become a necessity and the researchers plan to investigate the improvement of web-based information system and its effects on their customer satisfaction.

1.3 Research purposes

-The main objective:

Investigating the Impact of Web-Based Information Systems on Customer's Satisfaction in BorujerdStock Broker

-The subsidiary purposes

- 1) Investigating the Impact of system friendly of Web-Based Information Systems on Customer's Satisfaction in BorujerdStock Broker.
- 2) Investigating the Impact of external connections of Web-Based Information Systems on Customer's Satisfaction in BorujerdStock Broker
- 3) Investigating the Impact of user's feedback networks of Web-Based Information Systems on Customer's Satisfaction in BorujerdStock Broker.
- 4) Investigating the Impact of system security of Web-Based Information Systems on Customer's Satisfaction in BorujerdStock Broker.

1.4. The research main hypothesis and sub-hypotheses

Main hypothesis: the Web-Based Information System has an effect on Customer's Satisfaction in BorujerdStock Broker

The subsidiary hypothes:

- 1) The system friendly of Web-Based Information System has an effect on Customer's Satisfaction in BorujerdStock Broker.
- 2) The external connections of Web-Based Information System has an effect on Customer's Satisfaction in BorujerdStock Broker
- 3) The user's feedback networks of Web-Based Information System has an effect on Customer's Satisfaction in BorujerdStock Broker.
- 4) The system security of Web-Based Information System has an effect on Customer's Satisfaction in BorujerdStock Broker.

The theoretical framework and background of the Study

In the Competitive environment governing the businesses with technological advances, managers need access to data and information about the internal activities of organization and its hidden knowledge more than ever. Information and knowledge while allowing appropriate decisions for managers, used as decision support also. Another determinant of market globalization is the disappearance of borders, astounding speed took place to assist in the application of information technology in the worldwide exchange of information. Therefore any institution stay away from the exchange of information will stay away the development also (get distracted and Bazayy, 1394).

Mahmoudi, Sajadi&Goudarzi(2015), in an article entitled "Evaluation of the quality of services and satisfaction on customer's loyalty in sports clubs (fitness and aerobics)," wrote: Results showed that there is a significant positive relationship between service quality and customer's satisfaction with their loyalty. Among the variables of service quality and satisfaction, satisfaction was a stronger predictor for customer's loyalty.

Binazirgajiarjanki(2014), in his article "Providinga solution for integration of information systems and applications in the cloud computing-based organizations" wrote: Today, organizations used many software and applications to meet the needs of their own business. The software and systems often by different people and using different languages have been written different technologies and capabilities. Maintenance and support of software at long term can lead to related uncontrolled increase in costs and undesirable response to customers. Therefore software integration and sharing them in terms of process and data is presented as a strategic approach for organizations. In the integration strategy rather than organization's attention on information technology, the organization focused on information and technology serve only as a means

of receiving, processing and presentation of information. In this paper, we introduce organizational web operating system, a cloud computing-based proposed architecture and all the expected functionality for a system of applications management, taking into account all restrictions and obstacles are presented.

Comeranet al(2010), in an extensive research on the state of customer's loyalty, foreign equity, and satisfaction with improved services concluded that there was a significant relationship between these variables

Pedragosa&Correia (2009), in his study discussed customer's satisfaction from three perspectives expectations, equipment and customer's loyalty examined and came to the conclusion that satisfaction is variable that was significantly associated with expectations of customer and club equipment and has great importance in determining customer's loyalty to the club.

Zabihi(2008), in his Master's thesis entitled "The impact of service quality factor on customer's satisfaction (Case Study in four-star hotels in Isfahan city)," Business Administration - Finance Faculty of Economics and Administrative Sciences, University of Isfahan concluded that : from total of five main variables to measure service quality, three variables of tangible, core services and systematic nature of their services has more impact on customer's satisfaction and two other variable that is human factors and social responsibility have less impact on customer's satisfaction.

Lim(2006), chuan(2008), in his research stated that service quality directly affects customer's satisfaction. Also, levels of customer's satisfaction directly effects on customer's loyalty and high levels of customer's loyalty directly affect the future purchase behavior of the customer.

2-1. Conceptual model of the research

Researchers (Fung et al., 2000; kavoosi&saghaei 2005; Shahin,2008, wang, et all 2003) in their investigations know the aspect of impact of web-based information systems consists of 7

dimensions of completeness of the information, accuracy of information, system accessibility, system friendly, external connections, user's feedback networks, system security. In this study, 4 dimensions investigated just. In this study, customer's satisfaction considered as the dependent variable. Above researchers in their study know customer's satisfaction consists of three dimensions of customer's loyalty, quality of service and expectations of customers. The dimensions shown in the figure1:

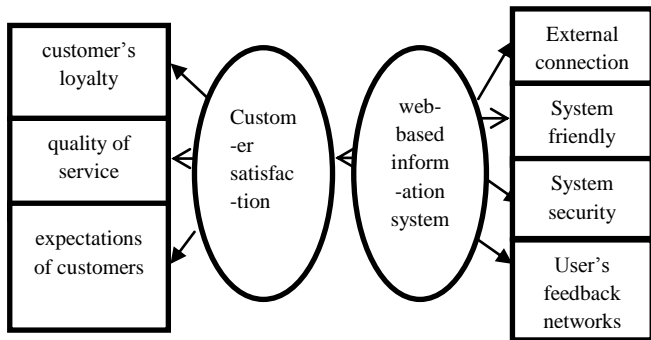


Figure1. Conceptual model of the research (Source: Fung et al., 2000; kavoosi&saghaei 2005; Shahin2008, wang et al,2003)

3. Research methodology

This research in term of goal is applied and how to do is descriptive-survey. The population of the study consisted of stockbroker customers of Boroujerd city who buy via the Internet and the Website or in person, that they were 621 people. Random sampling method used. To determine sample size, according to the population of customers from 621 who considered, according to Morgan table, 234 individuals were chosen and during June, 250 questionnaires among customers of these stockbroker have been distributed in person or email which 212 questionnaires were returned.

Data collection method in this research was field method. Data using a standard questionnaire were collected. web-based Information systems questionnaire was adapted from Fang et al. (2000) and customer satisfaction questionnaire, was

adapted from shahin&teymori (2008); wanget al (2003)Moqimi, (2011).

Questionnaires were used in this study was standard but for set a valid questionnaire it is necessary have another time and place, with the guidance of professors ambiguity of the questions in this matter was resolved and to ensure its validity content analysis was used and in order to final assessment and measuring reliability in the early stages of research to collect data from 40 questionnaires were acting and Cronbach's alpha coefficient was calculated (see table below), it shows that the questionnaire is reliable:

Table 1 calculating cronbach alpha coefficient to determine the reliability questionnaire

cronbach alpha coefficient	Variables
0/875	web-based Information systems
0/926	customer satisfaction

Data analysis and hypothesis testing using SPSS software have been carried.

-Kolmogorov-Smirnov test for normality of data:

H₀: the variable distribution is normal

H₁: the variable distribution is not normal.

Table 2. Kolmogorov-Smirnov test results for research variables

Sig	Variables	Distribution Status
0/072	web-based Information systems	Normal
0/085	Customer's satisfaction	Normal

Judgment: because the amount of significant level is higher than 0.05 at all variables so we conclude that null hypothesis that is research variables all are normal.

4-Testing-research-hypotheses

-Multiple variables regression analysis

H₀: the Web-Based Information Systems has no effect on Customer’s Satisfaction in BorujerdStock Broker

H₁: the Web-Based Information Systems has an effect on Customer’s Satisfaction in BorujerdStock Broker

Table 3. Stepwise multi variable regression analysis for the main hypothesis

Variance Source	Sum of squares	Degrees of freedom	F	Significant Level	Durbin Watson
Regression	512/6217	1	29/352	0/000	0/78
Remaining	809/4013	210			
Total	321/10231	211			

Regression analysis results presented in the above table indicates that significant levels achieved, that is amount of 0.000 with a degree of freedom 1 and 210 less than 0.05. So created regression model statistically is significant. Due to R² the web-based information systems variable collectively explained 78 percent of the variance in customer’s satisfaction scores. Unexplained amount is equal to 22 percent. So the web-based information systems affect customer’s satisfaction.

Table 4. Stepwise multi variable regression analysis for the main hypothesis

Sig	T	Beta	B	Predictive variable
0/004	2/93		10/9	Fixed amount
0/000	18/03	0/78	0/67	web-based information systems

As can be seen from the above table, according to the amount of B,web-based information systems variable positively affects the customer’s satisfaction variable. According to the above regression equation can be written as follows:
 customer’s satisfaction= 10/9 + 0/67 (web-based information systems)

So the research hypothesis is confirmed.

-The subsidiary hypothesis:

1) H₀: the system friendly of Web-Based Information Systems has no effect on Customer’s Satisfaction in BorujerdStock Broker.

H₁: the system friendly of Web-Based Information Systems has an effect on Customer’s Satisfaction in BorujerdStock Broker.

Table 5. Stepwise multi variable regression analysis for 1 sub hypothesis

Variance Source	Sum of squares	Degrees of freedom	F	Significant Level	Durbin Watson
Regression	702/702	1	15/48	0/000	0/26
Remaining	9528/619	210			
Total	10231/321	211			

Regression analysis results presented in the table5 indicates that significant levels achieved, that is amount of 0.000 with a degree of freedom 1 and 210 less than 0.05. So created regression model statistically is significant. Due to R² the system friendly of web-based information systems variable collectively explained 26percent of the variance in customer’s satisfaction scores. Unexplained amount is equal to 74 percent. So the system friendly of web-based information systems affect customer’s satisfaction.

Table 6. Stepwise multi variable regression analysis for 1 sub hypothesis

sig	t	Beta	B	Predictive variable
0/000	7/861		37/34	Fixed amount
0/000	3/935	0/262	0/814	web-based information systems

As can be seen from the table6, according to the amount of B, system friendly of web-based information systems variable positively affects the customer’s satisfaction variable.

So the research hypothesis is confirmed.

2) **H₀**: the external connections of Web-Based Information Systems has no effect on Customer's Satisfaction in BorujerdStock Broker

H₁: The external connections of Web - Based Information system has an effect on Customer's Satisfaction in BorujerdStock Broker.

Table 7. Stepwise multi variable regression analysis for 2sub hypothesis

Variance Source	Sum of squares	Degrees of freedom	F	Significant Level		Durbin Watson
Regression	2706/264	1	75/52	0/000	0/51	1/8
Remaining	7535/056	210				
Total	10231/321	211				

Regression analysis results presented in the table8 indicates that significant levels achieved, that is amount of 0.000 with a degree of freedom 1 and 210 less than 0.05. So created regression model statistically is significant. Due to R² the external connections of web-based information systems variable collectively explained 51 percent of the variance in customer's satisfaction scores. Unexplained amount is equal to 49 percent. So the external connections of web-based information systems affect customer's satisfaction.

Table 8. Stepwise multi variable regression analysis for 2 sub hypothesis

Sig	T	Beta	B	Predictive variable
0/000	5/194		20/99	Fixed amount
0/000	8/690	0/514	3/40	web-based information systems

As can be seen from the table8, according to the amount of B, external connections of web-based information systems variable positively affects the customer's satisfaction variable. So the research hypothesis is confirmed.

3) **H₀**: The user's feedback networks of Web-Based Information system has no effect on Customer's Satisfaction in BorujerdStock Broker.

H₁: The external connections of Web - Based Information System hasn't a effect on Customer's Satisfaction in BorujerdStock Broker.

Table 9. Stepwise multi variable regression analysis for 3 sub hypothesis

Variance Source	Sum of squares	Degrees of freedom	F	Signifi-cant Level		Durbin Watson
Regression	5264/291	1	222/56	0/000	0/71	2
Remaining	4967/030	210				
Total	10231/321	211				

Regression analysis results presented in the table9 indicates that significant levels achieved, that is amount of 0.000 with a degree of freedom 1 and 210 less than 0.05. So created regression model statistically is significant. Due to R² the user's feedback networks of web-based information systems variable collectively explained 71 percent of the variance in customer's satisfaction scores. Unexplained amount is equal to 29 percent. So the user's feedback networks of web-based information systems affect customer's satisfaction.

Table 10. Stepwise multi variable regression analysis for 3sub hypothesis

Sig	t	Beta	B	Predictive variable
0/000	10/57		23/35	Fixed amount
0/000	14/91	0/717	3/07	web-based information systems

As can be seen from the table10, according to the amount of B, user's feedback networks of web-based information systems variable positively affects the customer's satisfaction variable. So the research hypothesis is confirmed.

4) **H₀**: The system security of Web-Based Information Systems has no effect on Customer's Satisfaction in BorujerdStock Broker.

H₁: The system security of Web-Based Information Systems has an effect on Customer's Satisfaction in BorujerdStock Broker.

Table 11. Stepwise multi variable regression analysis for 4 sub hypothesis

Variance Source	Sum of squares	Degrees of freedom	F	Significant Level		Durbin Watson
Regression	3322/413	1	100/987	0/000	0/57	2
Remaining	6908/908	210				
Total	10231/321	211				

Regression analysis results presented in the table11 indicates that significant levels achieved, that is amount of 0.000 with a degree of freedom 1 and 210 less than 0.05. So created regression model statistically is significant. Due to R² the system security of web-based information systems variable collectively explained 57 percent of the variance in customer's satisfaction scores. Unexplained amount is equal to 43 percent. So the system security of web-based information systems affect customer's satisfaction.

Table 12. Stepwise multi variable regression analysis for 4 sub hypothesis

Sig	T	Beta	B	Predictive variable
0/000	14/301		33/05	Fixed amount
0/000	10/049	0/570	2/16	web-based information systems

As can be seen from the table12, according to the amount of B, system security of web-based information systems variable positively affects the customer's satisfaction variable.

So the research hypothesis is confirmed.

5-Conclusions and suggestions

The findings showed the Web-Based Information Systems (and its dimensions: system friendly, external connections, user's feedback networks, system security) has a significant and positive effect on Satisfaction of BorujerdStock Broker Customers. The user's feedback networks has the greatest impact on Customer's Satisfaction of BorujerdStock Broker (value of 0/717).

Since the new knowledge quickly becomes old and the needs level of customers increased and becomes more diverse so it is essential that the Stock Organization equipped with the most powerful and newest features for the system of web and for providing the information to customers, till the lack of sufficient information or poor speed data transfer don't lead to customer's dissatisfaction so the skills and techniques has to expand in equipping and utilizes the facilities of web and permanently through the adequate and rapid exchange of information and adoption of meta-electronic information system, updating the knowledge of its customers and meeting their needs. The following proposal is based on assumptions results, as a result, with the help of Web-based information systems in the field of sales, can improve absorption, satisfaction, loyalty in sales of entire of internet products.

Based on the results of hypothesis can be suggested that:

based on the results of main hypothesis:

- Necessary education for individuals interested in a career in brokerage
- Support services given to clients Access to fast and accurate information to the public on the website of the Stock Exchange Organization

based on the results of 1 sub hypothesis:

- The arrangement of displays information on the website of Stock Exchange Organization become more stylish
- Easily understand of the information on the website of Stock Exchange

Organization given-importance

based on the results of 5 sub hypothesis:

- Download information from other sites become more convenient and easier
- Communication lines to external connectors on the website of Stock Exchange Organization take place easier and more favorable

based on the results of 6 sub hypothesis:

- Diversity of feedback network increased on the website of Stock Exchange Organization
- Arrangement of feedback pages on the website of Stock Exchange Organization changed and become more attractive

based on the results of 7 sub hypothesis:

- Validation and verification of data transmission investigate on the website of Stock Exchange Organization more
- Given more importance to privacy of feedback message on the website of Stock Exchange Organization

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