COMPARITIVE INVESTIGATION OF USERS’ SATISFACTION WITH THE QUALITY OF ELECTRONIC SERVICES OF RAJA PASENGER TRAINS COMPANY AND RAILWAY OF IRAN

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ABSTRACT

Efforts to understand and measure the service quality is the management challenges, especially in recent decades. Web also targets governmental services & organizations can present service for more customers by providing electronic services of web to accelerate & increase quality of services without need to physical presence of customers. Awareness of the concept of service quality and its efforts to improve service quality and levels of service quality can lead to increased customer satisfaction. In this research that is as an industrial engineering M.A thesis, it is tried to evaluate users’ satisfaction of electronic services of I.I.R (Iran Islamic Republic) Railway and Raja Passenger Trains Company after criticizing literatures related to service quality and satisfaction, explained “e-qual” research model and then using this model. Research methodology is descriptive and of measuring and sectional ones. Also this research is considered as an operational research. Questionnaire of evaluating web services quality is used as an instrument to gather data. By obtaining the experts opinion, we were able to assign the validity of questionnaire and in order to determine the reliability; SPSS is used to analysis the data. The results have indicated that the satisfaction of users in many usability indicators is high.

Key Words: Railway, Raja Passenger Trains company, Customer Satisfaction, Services quality.
INTRODUCTION

Customer needs and expectations are changing when it comes to governmental services and their quality requirements. However, service quality practices in public sector organizations is slow and is further exacerbated by difficulties in measuring outcomes, greater scrutiny from the public and press, a lack of freedom to act in an arbitrary fashion and a requirement for decisions to be based in law (Teicher et al., 2002).

The rational consumer will only defect from the incumbent if the competitor's price/quality bundle will improve her utility. Hence, the aggregate effect of increased service quality competition on customer retention likely varies by market, depending on the distribution of preferences among the incumbent's customers and the relative quality offered by existing competitors. Firms can get an economic way by using internet and website in which they are transited to pioneer firm in market, in production, in delivery and in services (Haghhighinasab & Tabein, 2009).

REVIEW OF LITERATURE

SERVICE QUALITY

Service quality is closely related with customer satisfaction (Kumar et al. 2008; Zineldin, 2006; Wei and Ramalu, 2011). In the modern competitive environment, the quest of customer’s satisfaction hugely depends on the firms overall service quality (SQ) and is considered to be an essential strategy (Paradise-Tornow, 1991).

Service quality is a concept that has aroused considerable interest and debate in the research literature because of the difficulties in both defining it and measuring it with no overall consensus emerging on either (Wisniewski, 2001).

SATISFACATION

Social consequences of consumer satisfaction perceptions, evaluations, and psychological reactions experienced by consumers when they experience or consume a product or service. (Mckienney et al., 2008).

The Applied Model in Evaluation of Quality of Services is Identified in Review of Literature:

- Servqual
- E-Qual
SERVQUAL MODEL

The SERVQUAL model proposes that customers evaluate the quality of a service on five distinct dimensions: reliability, responsiveness, assurance, empathy, and tangibles. The SERVQUAL instrument consists of 22 statements for assessing consumer perceptions and expectations regarding the quality of a service. Perceived service quality results from comparisons by consumers of expectations with their perceptions of service delivered by the service providers (Zeithaml et al., 1990). It can be argued that the factor underpinning the delivering of good perceived service quality is actually meeting the expectations of the customers. Thus, excellent service quality is exceeding the customers’ expectations. Zeithaml and Bitner (2000) suggested that customer expectations are beliefs about a service that serve as standards against which service performance is judged.

E-QUAL MODEL

E-QUAL is based on user’s perception of quality. 5 factors of usability, design, information and empathy are effective in E-QUAL model which 3 factors of usability, information quality and service interaction are merged. Usability contains usability and design, information quality contains information and service interaction contains trust and empathy. E-QUAL model has been established for evaluation of quality of website by Barnes and Vidgen and tested in many fields such as online bookstores, sale sites, knowledge shares and e-government.
E-QUAL is based on QFD system which is a tool for identifying and sending customer’s voice in each level of development and application of product or services. Application of QFD is customer-oriented and is started with specifying quality requirements and applying words that are understandable for customers. Afterward, the customer will receive the feedback of these qualities. In E-QUAL, users are asked to classified required sites by using a series of qualities and rank each quality according to the importance. E-QUAL has used survey tool containing 23 items to recognize the perception of users.

BACKGROUND OF RESEARCH

In 2012 a research as “Multi-scale measure to evaluate electronic government service quality” studied and presented this model for website electronic services by using e-govqual model. Dimensions of this model include: 1- reliability and trust 2-usability 3-cilil support 4-usage facility 5-functions of environmental reactions 6-satisfaction of information and web appearance.

Research results show that all approved dimensions affect services quality (Papadomichelaki&Mentzas, 2012).

Beikzad (2012) in a research as “Relationship between electronic services quality with electronic satisfaction of students in Banab Open University” concludes that there is a relationship between electronic services quality with electronic satisfaction of students in Banab Open University. In other words there is a meaningful relationship between electronic services quality and its seven dimensions including efficiency dimension, reliance, and order supplement, supporting personal secrets, responding, compensation and contact to electronic satisfaction. However, while university increases presented electronic services quality, students’ electronic satisfaction of that university will increase too.

RESEARCH CONCEPTUAL MODEL

After evaluating review of public e-services quality, E-QUAL model was selected for this research. This model has 3 dimensions which formed the research conceptual model with dependent variable of research which is satisfaction of website users.

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1 Quality Function Deployment
RESEARCH QUESTION

‘whether users who are using the e-services of this Railways And Raja Passenger Trains company are satisfied or not?

RESEARCH HYPOTHESES

1\textsuperscript{st} Hypothesis:

“According to the users, usability of e-services is satisfactory”. The variables of this hypothesis are:

Independent Variable: Usability
Dependent Variable: Satisfaction of Website Users

2\textsuperscript{nd} Hypothesis:

“According to the users, information quality of website is satisfactory”. The variables of this hypothesis are:

Independent Variable: Information Quality
Dependent Variable: Satisfaction of Website Users
3rd Hypothesis:

“According to the users, service interaction of website is satisfactory”. The variables of this hypothesis are:

Independent Variable: Service Interaction
Dependent Variable: Satisfaction of Website Users

RESEARCH METHODOLOGY

The method of this research is descriptive, survey and cross-sectional. It is considered an applied research as well. Research populations are “all the citizens that personally have purchased online ticket at least once through website”.

Questionnaire is the basic source of research which comprise of 23 questions and the respondents have been asked to express their ideas about each question or elements of e-service qualities according to the Likert method as follow:

“Very high, high, somewhat, low, very low”

In this questionnaire, questions no. 1 to 8 are related to the 1st hypothesis, 9 to 15 related to the 2nd hypothesis and 16 to 22 related the 3rd hypothesis and question no. 23 is an overall question about the website.

Statistical sample of this research is obtained through objective-judgmental sampling.

The determined sample volumes for this research are 301(201(Railway) , 100(Raja Passenger Trains company)). After confirming the validity, the calculated α (which in fact shows the reliability of research) is 0.762.

RESULTS

Research hypotheses have been tested through binominal non-parametric test and the following results were obtained: the results indicated that user’s are satisfied respectively more from, information quality, usability and afterward service interaction. In fact, users are less satisfied with service interactions than the other two.
### TABLE 1: STATISTICAL INDICATORS SCORES ASSIGNED TO EACH QUESTION IN THE QUESTIONNAIRE ONLINE USERS WITH ALPHA COEFFICIENT (RAJA PASSENGER TRAINS COMPANY)

<table>
<thead>
<tr>
<th>Alpha</th>
<th>Skewness</th>
<th>Sd</th>
<th>Mid</th>
<th>Ave</th>
<th>No</th>
<th>Alpha</th>
<th>Skewness</th>
<th>Sd</th>
<th>Mid</th>
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<tbody>
<tr>
<td>0.68</td>
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<td>1.1</td>
<td>2.0</td>
<td>2.0</td>
<td>13</td>
<td>0.73</td>
<td>1.2</td>
<td>0.5</td>
<td>1.0</td>
<td>1.4</td>
<td>1</td>
</tr>
<tr>
<td>0.74</td>
<td>1.2</td>
<td>0.4</td>
<td>1.0</td>
<td>1.2</td>
<td>14</td>
<td>0.70</td>
<td>0.3</td>
<td>0.9</td>
<td>2.0</td>
<td>1.8</td>
<td>2</td>
</tr>
<tr>
<td>0.76</td>
<td>1.6</td>
<td>0.6</td>
<td>1.0</td>
<td>1.4</td>
<td>15</td>
<td>0.69</td>
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<td>1.0</td>
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<tr>
<td>0.78</td>
<td>0.1</td>
<td>1.0</td>
<td>2.0</td>
<td>2.0</td>
<td>16</td>
<td>0.70</td>
<td>0.5</td>
<td>0.8</td>
<td>2.0</td>
<td>1.8</td>
<td>4</td>
</tr>
<tr>
<td>0.78</td>
<td>-0.0</td>
<td>1.1</td>
<td>3.0</td>
<td>3.0</td>
<td>17</td>
<td>0.72</td>
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<td>2.0</td>
<td>2.1</td>
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<tr>
<td>0.77</td>
<td>-0.1</td>
<td>0.8</td>
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<td>18</td>
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<td>0.4</td>
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<td>2.1</td>
<td>6</td>
</tr>
<tr>
<td>0.76</td>
<td>0.4</td>
<td>0.8</td>
<td>3.0</td>
<td>3.2</td>
<td>19</td>
<td>0.70</td>
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<td>1.8</td>
<td>7</td>
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<tr>
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<td>0.70</td>
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<td>8</td>
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<tr>
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<td>3.0</td>
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<tr>
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<td>3.1</td>
<td>22</td>
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<td>10</td>
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<td>23</td>
<td>0.71</td>
<td>0.9</td>
<td>0.7</td>
<td>1.0</td>
<td>1.6</td>
<td>11</td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>0.72</td>
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<td>0.6</td>
<td>1.0</td>
<td>1.4</td>
<td>12</td>
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</table>

### TABLE 2: STATISTICAL INDICATORS SCORES ASSIGNED TO EACH QUESTION IN THE QUESTIONNAIRE ONLINE USERS WITH ALPHA COEFFICIENT (RAILWAY)

<table>
<thead>
<tr>
<th>Alpha</th>
<th>Skewness</th>
<th>Sd</th>
<th>Mid</th>
<th>Ave</th>
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<th>Alpha</th>
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<th>Sd</th>
<th>Mid</th>
<th>Ave</th>
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<tr>
<td>0.72</td>
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<td>1.1</td>
<td>2.0</td>
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<td>13</td>
<td>0.75</td>
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<td>0.4</td>
<td>0.1</td>
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<tr>
<td>0.87</td>
<td>1.9</td>
<td>0.7</td>
<td>1.0</td>
<td>1.4</td>
<td>14</td>
<td>0.73</td>
<td>0.5</td>
<td>0.8</td>
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<td>2</td>
</tr>
<tr>
<td>0.78</td>
<td>1.5</td>
<td>0.6</td>
<td>1.0</td>
<td>1.5</td>
<td>15</td>
<td>0.72</td>
<td>1.0</td>
<td>0.9</td>
<td>1.0</td>
<td>1.6</td>
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<tr>
<td>0.80</td>
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<td>1.9</td>
<td>16</td>
<td>0.73</td>
<td>0.6</td>
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<td>2.0</td>
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<td>4</td>
</tr>
<tr>
<td>0.79</td>
<td>0.3</td>
<td>1.2</td>
<td>3.0</td>
<td>2.9</td>
<td>17</td>
<td>0.76</td>
<td>0.7</td>
<td>1.2</td>
<td>2.0</td>
<td>2.2</td>
<td>5</td>
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<tr>
<td>0.78</td>
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<td>0.8</td>
<td>3.0</td>
<td>2.6</td>
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<td>0.74</td>
<td>0.4</td>
<td>1.2</td>
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<td>6</td>
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<tr>
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<td>0.9</td>
<td>3.0</td>
<td>2.9</td>
<td>19</td>
<td>0.73</td>
<td>0.8</td>
<td>0.9</td>
<td>2.0</td>
<td>1.9</td>
<td>7</td>
</tr>
</tbody>
</table>
USABILITY (RAJA PASSENGER TRAINS COMPANY)

About usability, 77.3% of users are satisfied with usability of e-services of the company. This dimension has 8 indicators.

USABILITY (RAILWAY)

About usability, 77% of users are satisfied with usability of e-services of the company. This dimension has 8 indicators.

TABLE 3: SATISFACTION OF USERS FROM USABILITY

<table>
<thead>
<tr>
<th>Variable</th>
<th>Hypothesis</th>
<th>Test result</th>
<th>Percent of People with satisfaction and idea</th>
<th>Percent of People without satisfaction and idea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raja</td>
<td>H0: There is no difference users’ expected and observed satisfaction in usability dimension</td>
<td>Sig =0.000</td>
<td>Approved</td>
<td>Usability</td>
</tr>
<tr>
<td>Railway</td>
<td>H1: Users’ observed satisfaction of usability is more than expected rate.</td>
<td>77.3</td>
<td>22.7</td>
<td>76.8</td>
</tr>
</tbody>
</table>

MEASUREMENT INDICATORS

1. Ease of learning how to work with the site
2. Communication with the site
3. Ease of visiting other parts of site
4. Ease of applying the website
5. Apparent attractiveness of the site
6. Being the design of the site standard
7. Required competency to perform the research
8. Mentality of user after using the website

All the indicators of usability were confirmed.

**INFORMATION QUALITY (RAJA PASSENGER TRAINS COMPANY)**

About information quality, 88% of users are satisfied with information quality of e-services of company.

**INFORMATION QUALITY (RAILWAY)**

About information quality, 86% of users are satisfied with information quality of e-services of company.

**TABLE 4: SATISFACTION OF USERS FROM INFORMATION QUALITY**

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Percent of People with satisfaction and idea</th>
<th>Percent of People without satisfaction and idea</th>
<th>Meaningfulness Level</th>
<th>Percent of People with satisfaction and idea (Railway)</th>
<th>Percent of People without satisfaction and idea (Railway)</th>
<th>Test result</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>H0: There is no difference users’ expected and observed satisfaction in usability dimension</td>
<td>88.0</td>
<td>12.0</td>
<td>Sig =0.000</td>
<td>86.4</td>
<td>13.6</td>
<td>Approved H1</td>
<td>information Quality</td>
</tr>
</tbody>
</table>
MEASUREMENT INDICATORS

1. Accuracy of information of website
2. Reliability of website information
3. Timly information of website
4. Relevant of website information with its duty
5. Ease of understanding the website information
6. Elaboration of information website
7. Proper formatting of information website

All the indicators of information quality are confirmed.

SERVICE INTERACTION (RAJA PASSENGER TRAINS COMPANY)

About service interaction, 23.5% of users are satisfied with quality of e-services of company.

SERVICE INTERACTION (RAILWAY)

About service interaction, 37% of users are satisfied with quality of e-services of company.

TABLE 5: SATISFACTION OF USERS FROM SERVICE INTERACTION (RAJA PASSENGER TRAINS COMPANY)

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Percent of People with satisfaction and idea</th>
<th>Percent of People without satisfaction and idea</th>
<th>Meaningfulness Level</th>
<th>Test result</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>H0: There is no difference users’ expected and observed satisfaction in usability dimension</td>
<td>23.5</td>
<td>76.5</td>
<td>Sig =0.062</td>
<td>Approved H0</td>
<td>Service Interaction</td>
</tr>
<tr>
<td>H1: Users’ observed satisfaction of usability is more than expected rate.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### TABLE 6: SATISFACTION OF USERS FROM SERVICE INTERACTION

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Percent of People with satisfaction and idea</th>
<th>Percent of People without satisfaction and idea</th>
<th>Meaningfulness Level</th>
<th>Test result</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>H0: There is no difference users’ expected and observed satisfaction in usability dimension</td>
<td>37.3</td>
<td>62.7</td>
<td>Sig = 0.307</td>
<td>Approved H0</td>
<td>Service Interaction</td>
</tr>
<tr>
<td>H1: Users’ observed satisfaction of usability is more than expected rate.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### MEASUREMENT INDICATORS

1. Public face of website among citizens
2. Security of the transaction through the website
3. Security of personal information in the website
4. A sense of having a personal websites
5. The relationship of website with its audience
6. The role of e-services in relation of users with company
7. Integrity and accountability of officials in providing e-services.

In both groups Among parameters related to electronic services interaction, just users’ satisfaction of site public popularity parameter among civilians was approved and other parameters weren’t approved and people evaluated under average the quality of these parameters. Also fitness parameter of presenting services by website are least satisfied which demands special reviewing of this parameter by organization.

Generally, according to the overal indicator related to question no. 23 (overall view about the services of website), 70% of users were satisfied.

The results have shown that although six used indicators in testing hypotheses were not confirmed, all the hypotheses of this research were accepted in the confidence level of 95%.

### REFERENCES


