

ISSN 2090-4304 Journal of Basic and Applied Scientific Research www.textroad.com

# The Effect of E-Service Quality on E-Trust and E-Satisfaction as Key Factors Influencing Creation of E-Loyalty in E-Business Context: The Moderating Role of Situational Factors

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## **ABSTRACT**

Development of loyalty in customers is a strategic goal of many firms and organizations and today, the main effort of many firms is allocated to retain customers and obtaining even more ones. Characteristics of loyal customers and method for formation of loyalty in customers in internet space are different to those in traditional one in some respects and study of them may be beneficial in improving performance of firms, organizations and shops involving in this field of business. Also it may help managers of these types of businesses to make efficient and effective decisions towards success of their organizations. Thus, present study aims to investigate the effects of e-service quality in three aspects of information, system and web-service on e-trust and e-satisfaction as key factors influencing creation of e-loyalty of Iranian customers in e-business context; Also it was tried to demonstrate moderating effect of situational factors e.g. time poverty, geographic distance, physical immobility and lack of transportation on e-loyalty level. Totally, 400 questionnaires were distributed to university students, that 382 questionnaires were used for the final analysis, which the results from analysis of them based on simple linear regression and multiple hierarchical regression show that customer loyalty to e-shops is directly influenced by e-trust in and e-satisfaction with e-shops which in turn are determined by e-service quality; also the obtained results shows that situational variables can moderate relationship between e-trust and/or e-satisfaction and e-loyalty. Therefore situational variables studied in present research can influence initiation of transaction of customer with online retailer and customer attitude importance and this in turn makes it necessary for managers to pay special attention to situational effects in examination of current attitude and behavior of customers.

**KEYWORDS:** E-Loyalty, E-Satisfaction, E-Service Quality, E-Trust, Situational Factors.

## 1. INTRODUCTION

After less than two decades since appearance of Internet, maybe no aspects of human life can be found not influenced by ICT. By emergence of e-money and possibility of conducting financial interactions through electronic and on line tools, e-commerce increasingly spreads and penetrates into more and more areas of global economy and a new type of business i.e. e-business has been founded on the basis of this technology.

One concern in e-commerce world is that the number of online customers who browse Internet and e-shops without a certain purpose and do no purchase is growing. The important task of shop website management is to convert browsing customers in to actual and loyal ones.

In e-commerce context, creation of e-loyalty is a major challenge which can be exploited by firms wanting to differentiate themselves from competitors. E-loyalty is favorable attitude of customer towards e-sellers which leads to repeated purchase; indeed e-loyalty concept, extends traditional loyalty to online behavior of consumer [1]. E-loyalty can be considered as a factor effective in optimization of economic status of online seller and can prepare the ground for taking advantage of e-customers by reducing operational costs [2]. But the main question is that how e-loyalty is created and developed. Therefore present study aims to present a comprehensive model for process of e-loyalty development beyond what evaluated by previous researchers.

Based on a literature review, present study considered e-service quality, e-trust and e-satisfaction as key factors influencing creation of e-loyalty in e-business setting, but previous studies only demonstrated a part of relationships between these factors and their effects on e-loyalty [3, 4, 5]; thus present research tried to provide a comprehensive model to fill the gap of previous literature and clearly show the relationship between e-service quality, e-trust and e-satisfaction with e-loyalty in Iranian online shops.

Also by adding certain situational factors e.g. time poverty, geographic distance, physical immobility and lack of transportation it was tried to demonstrate moderating effect of them on e-loyalty level; also Belk [6] believed that study of customer behavior without paying attention to situational factors is unrealistic. A situational factor is conceptualized as an as an exogenous variable which is external to attitudes and characteristics of an individual and influences his/her attitude and behavior [6]. Various studies showed significant effect of situational variables on consumer behavior in contexts of information search [7], choice of retailing form [8, 9], product selection [10], consumer attitude [11, 12] and purchase intention [11]. But effect of situational factors in context of providing online service, particularly in process of e-loyalty development is not sufficiently studied. Situation can influence e-loyalty of customer to online shop as a important variable in which purchase or consumption is occurred; also Bem and Allen [13] believed that stimulus characteristics, individual attitude and situation

influenced reaction to stimulus. Thus it can be concluded that situational factors along with e-satisfaction / e-trust (individual attitudes) and e-retailing quality (stimulus characteristics) have a certain effect on e-loyalty development process. Therefore in present research it was tried to test several aspects of situational variables with respect to customer market response outcomes.

#### 2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

#### 2.1 Quality of E-Service and E-Trust

Hassanein and Head [14] concluded that perceived usefulness, social presence [15] and perceived convenience are in a positive relationship with trust [16, 17]. According to Nicolaou and McKnight [18] information quality enhances the trust between organizations: Thus:

**H1:** The information quality has a positive influence on e-trust.

**H2:** The system quality has a positive influence on e-trust.

According to several studies trust is positively related to Social presence and assurance which together with other factors form service quality [14, 15, 19]; Thus:

**H3:** The web-service quality has a positive influence on e-trust.

## 2.2 Quality of E-Service and E-Satisfaction

Previous studies [20] have demonstrated the positive relationship between information quality and system quality and satisfaction. Information quality has been evaluated in a variety of ways. Four conceptions are taken into account by Christy M K Cheung in evaluation of information quality: accuracy, content, format, timeliness. Livari [21] studied information quality with respect to three concepts of currency, completeness, consistency. DeLone and McLean [22] addressed concepts of personalization and relevance security; Thus:

**H4:** The information quality has a positive influence on e-satisfaction.

Also system quality has been evaluated with respect to various concepts e.g. convenience, flexibility, integration, response time, language, etc. [21]. Other concepts include ease of use, ease of learning, system features, sophistication, customization [23]; Thus:

**H5:** The system quality has a positive influence on e-satisfaction.

According to a literature review by Christy M K Cheung [24, 25, 26] quality of services provided by e-retailers significantly influences satisfaction; Thus:

**H6:** The web-service quality has a positive influence on e-satisfaction.

## 2.3 E-Satisfaction and E-Loyalty

Patronizing behavior has been studied in relation to loyalty. Brown [27] provided four groups for loyalty according to buying habits: undivided loyalty, divided loyalty, unstable loyalty and lack of loyalty. Also loyalty can be evaluated based on how likely a customer buys a product or service frequently (more than one time) [28, 29]. However, according to some studies [30, 31] real loyalty cannot merely describe based on behavior but also an appropriate measure for loyalty should also include attitudinal aspect because customer may have no ways but buying his\her intended item from a certain e-retailer and it is difficult, if not impossible, for him to approach alternative providers for any reason.

Loyalty: Brand loyalty refers to "the preferential, attitudinal and behavioral response" of customer to a brand over time [32]. According to Jacoby [33] loyalty guides purchasing behavior based on its psychological dimension. Loyalty is also can be described as repeated purchase of products or services by consumer because of his\her positive attitude toward the brand of those products or services [34, 35]. As argued by Keller [35], the very existence of this repeated purchase demonstrates the presence of positive attitude which is the source of loyalty. So loyalty should be evaluated with respect to both attitudinal and behavioral aspects [36]. Thus here e-loyalty is assumed to be a positive attitude towards an e-firm as reflected in repurchase.

Satisfaction: Satisfaction has been defined as a mindset stemming from disconfirmed expectation together with emotions resulting from previous experience of customer [37]. So satisfaction can be considered as a result of regular assessment of experience one having with a product or service in relation to purchase and consumption of it. Here e-satisfaction can be considered as favorable feeling of customer associated with an e-firm as a result of his\her dealings with it.

Switching behavior is more probable when customer is not satisfied. The above-mentioned customer pays less attention to e-firm marketing efforts and more probably takes measures to reduce reliance on it. Also he\she may be ready to modify his\her previous interaction with the e-firm because of his\her dissatisfaction. The above said are also the case in electronic environment. Thus:

**H7:** The e-satisfaction has a positive influence on e-loyalty.

## 2.4 E-Trust, E-Satisfaction and E-Loyalty

E-commerce has transformed operational environment of a great number of firms especially banking and financial service ones. ICT provides banks with a device for presenting information to their customers and also it makes it possible for bank customers to do their retail banking jobs in an interactive way. But because of security and privacy concerns, the extent of employing electronic banking services and B2C e-commerce is not the same [38].

Banks use internet in order to deal with their customers and perform their marketing campaigns. Also internet can be regarded as an information system. In relationship marketing trust is a central concept [39]. Various studies have demonstrated the effect of trust on customer loyalty. Trust drives customers to keep in contact with their e-retailers because of the value being perceived by them related to it.

The extent of customer confidence in choices provided by the business determines presence of trust [40]. The extent of customer confidence in dealing with e-retailer determines E-trust [41]. Trust of customers in internet and their concerns for security and privacy intensely influence e-banking [42]. Thus trust can be thought as a significant prerequisite of loyalty.

According to above, e-trust is likely to have both direct and indirect effects on e-loyalty. The indirect effect is exerted via e-satisfaction. It is argued that presence of e-satisfaction can be inferred based on the extent of customer trust. In a similar vein, Razzaque and Boon [43] demonstrated that e-satisfaction is significantly influenced by trust. According the above-said, in present study it is suggested that e-banking customers who trust in their e-service provider are more probably satisfied with e-bank. Thus:

**H8:** The e-trust has a positive influence on e-satisfaction.

**H9:** The e-trust has a positive influence on e-loyalty.

#### 2.5 Situational Factors

Situation represents temporal and spatial conditions associated with an observation independent from personal characteristics of the observer and stimulus features and it influences the behavior in a significant way [6]. Belk [6] was a prominent study played a significant role in raising awareness on situation and situational factors in marketing research. According to his view, consumer personal characteristics, product and service features, the e-firm offering them and the situation all have independent effects on behavior in purchase context. Also situational features were introduced by him [41] in five categories: (1) physical circumstances; (2) social circumstances; (3) temporal viewpoint; (4) task description and (5) prerequisite states.

Choosing various ways to meet the needs based on the certain situation the customer facing with was studied in a research by Nicholson et al. [9] in shopping context and they showed that situational factors played a significant role in this respect. As argued by Dabholka and Bagozzi [11], situational variables are significant in the context of using technology-intensive self-services and influence the opinions of customers about these services and their decisions on using them. Also situational factors play significant role in selecting the shopping channel by customers particularly electronic ones [8].

When situational factors are considered in the context of e-shopping together with other ones, so we can have a comprehensive picture of the factors drive customer purchase in online environment. As stated by Gehrt and Yan [8] customer has various choices to purchase required items and in order to promote e-shopping, the situational factors enhancing it should be considered. Extant literature suggests that customer behavior is influenced by various situational factors e.g. specific needs, geographical concerns, the items being purchased, etc. [7, 8, 45].

## 2.5.1 Effect of Situational Factors on consequences of Market Response Outcomes

Lim and Razzaque [12] argued that situational factors moderate the relationship between customer opinion about the brand and loyalty. They proposed that both situation and personal characteristics, not merely one of them, have effects on loyalty of customer in an interactive way. When situational factors are taken into account, the relationship among market response outcomes becomes more clear [6].

Present research confirms the interaction proposed by Lim and Razzaque [12] and suggests that situational factors influence the relationship among such concepts as e-satisfaction, e-trust and e-loyalty. The studied factors included geographic distance, immobility, time shortage, and transportation problems. Geographical distance is time interval and distance between customer and the brick-and-mortar shop [45]. According to Gehrt and Yan [8], time shortage is the time a person believes being available to do his/her task. According to Avery [7], immobility and transportation problems refer to inability of person to move because of special personal conditions (e.g. illness) and lack of affordable transportation. When above restricting factors are available, customers have fewer choices and as a result they may show more trust in, satisfaction with and loyalty to a certain e-retailer. When time is short, the probability of resorting to online choices increases to avoid the time being spent to go to physical store. Customer with time shortage is less likely to show switching behavior when they are satisfied with and trust in their current e-retailer and in this case there is a strong relationship between trust and loyalty and between satisfaction and loyalty. Customers with geographical and transportation limitations are more likely to retain their loyalty to an e-retailer than those without this limitation and traveling to various physical stores is relatively easy to them. According to the above, it can be hypothesized that:

H10: Time poverty of situational factors will moderate the relationship between e-trust and e-loyalty.

H11: Geographic distance of situational factors will moderate the relationship between e-trust and e-loyalty.

H12: Physical immobility of situational factors will moderate the relationship between e-trust and e-loyalty.

H13: Lack of transportation of situational factors will moderate the relationship between e-trust and e-loyalty.

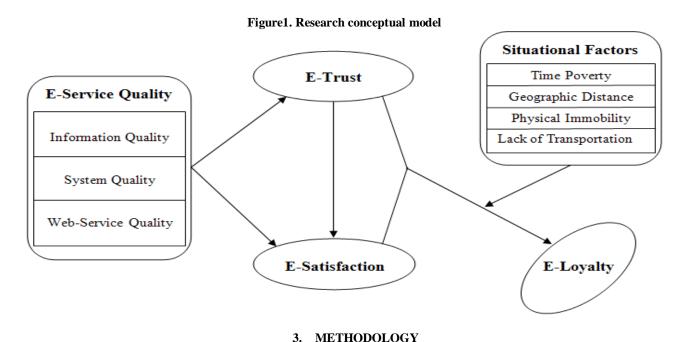
H14: Time poverty of situational factors will moderate the relationship between e-satisfaction and e-loyalty.

H15: Geographic distance of situational factors will moderate the relationship between e-satisfaction and e-loyalty.

**H16:** Physical immobility of situational factors will moderate the relationship between e-satisfaction and e-loyalty.

H17: Lack of transportation of situational factors will moderate the relationship between e-satisfaction and e-loyalty.

Therefore, based on the hypothesis, figure 1 is a conceptual model to this study.



#### 3.1 Measures

Respecting to the fact that the questionnaire used in present research was developed based on both research background and opinions of relevant experts, thus it has content validity. In order to verify reliability of questionnaire, Cronbach  $\alpha$  coefficient was used. Cronbach  $\alpha$  was estimated at 96% which demonstrated questionnaire reliability. Also, all measures used in this study were estimated on five-point Likert scale.

**System quality:** Measures for system quality was borrowed or adapted primarily from previous studies. Totally 12 items were employed for measuring "system quality". The items for capturing flexibility (4-item), Integration (1-item), response time (1-item), recoverability (1-item), convenience (1-item) and Security (4-item) were measured from Livari [21] and Finn [46].

**Information quality:** Information quality includes completeness, precision, consistency, format and currency (update). To measure the information quality, we used a 5-item scale adapted from Livari [21].

**Web-service quality:** Measures for web-service quality was borrowed or adapted primarily from previous studies. Totally 16 items were employed for measuring "web-service quality". The items for capturing customer support (4-item), returnability (3-item), social presence (3-item), assurance (4-item) and delivery (2-item) were measured from Gefen and Straub [44] and Finn [46].

**E-trust:** To measure the e-trust, we used a 3-item scale adapted from Bansal et al. [48], Gefen and Straub [47] and Mukherjee and Nath [49].

**E-satisfaction:** To measure the e-satisfaction, we used a 4-item scale adapted from Cyr et al. [50], Luarn & Lin [51], Ranaweera et al. [52] and Sahadev & Purani [53].

E-loyalty: To measure the e-loyalty, we used a 7-item scale adapted from Gremler [36] and Zeithaml et al. [54].

**Situational Factors:** The situational variables were assessed using the scales developed by the researcher based on the conceptualization of Monsuwé et al. [45]. Each of the situational variables (i.e., time poverty, geographic distance, physical immobility, and lack of transportation) was measured by one item.

## 3.2 Product selection

In relation to stimulus, mobile phones were chosen because of their wide use among Iranian students and their technology-orientation.

## 3.3 Sampling Target

In this study, information was collected in September 2012, from 382 college students in 5 management faculties of Islamic Azad University in Tehran area. According to Shouli [55], in every society college students and consumers belong to the middle and high class, and their education, revenue, social status and social interactions make them more involved. Therefore, college students who are in different age ranges with varying income levels were selected as the sample of this research.

#### 3.4 Sampling Method and Sample Size

Selective University is comprised of five colleges and eighty majors are taught in that. Totally, 26420 students study there. According to Krejcie and Morgan's table [56], sample size was defined 379. Proportional Stratified sampling and systematic random sampling were applied. In the first place, based on Proportional Stratified sampling, sharing and distribution of questionnaires was done relative to the numbers of colleges. Afterwards, systematic random sampling was done in front of the college entrance gate to choose the respondents. With regard to the size of sample, 400 questionnaires were distributed, that 382 questionnaires were used for the final analysis.

## 3.5 Data Analysis

In order to test 9 research hypotheses, regarding to significance values and t-value in original regression analysis table (table 1), it is judged that if sig. value is less than research error coefficient value, i.e. 0.05, and also t-value is more than 1.96 or less than -1.96, then the related hypothesis will be supported with a CI confidence intervals of 95%.

Also in order to identify moderating role of firm reputation in hypotheses 10 to 17, research hypotheses will be judged employing hierarchical multiple regression in 2 blocks (table 2). For each phase,  $R^2$  is calculated and variance extension ( $\Delta R^2$ ) is estimated using  $R^2$  from previous phase. In each  $R^2$  phase,  $\Delta R^2$  represent the influence of the variable being introduced to the analysis in the same phase. In each phase,  $R^2$  will be significant if introducing of variables in each phase leads to increase in  $R^2$  and decrease in standard error which in that case moderating role of the newly introduced variable i.e. firm reputation is demonstrated.

Table 1. Results of original regression analysis table

| Table 1. Results of original regression analysis table |                                  |                    |                                |      |                           |        |      |  |  |  |  |
|--|----------------------------------|--------------------|--------------------------------|------|---------------------------|--------|------|--|--|--|--|
| Hypothesis   | Independent Variable             | Dependent Variable | Unstandardized<br>Coefficients |      | Standardized Coefficients | t      | Sig. |  |  |  |  |
|  |                                  | В                  | Std. Error                     | Beta |                           |        |      |  |  |  |  |
| 1  | Information Quality              | E-trust            | 2.684                          | .156 |                           | 17.148 | .000 |  |  |  |  |
|  |                                  |                    | .134                           | .054 | .184                      | 2.481  | .014 |  |  |  |  |
| 2  |                                  | E-trust            | 2.553                          | .130 |                           | 19.566 | .000 |  |  |  |  |
|  | System Quality                   |                    | .238                           | .056 | .306                      | 4.253  | .000 |  |  |  |  |
|  |                                  |                    |                                |      |                           |        |      |  |  |  |  |
| 3  |                                  | E-trust            | 2.577                          | .141 |                           | 18.230 | .000 |  |  |  |  |
|  | Web-Service Quality              |                    | .204                           | .056 | .266                      | 3.652  | .000 |  |  |  |  |
|  |                                  |                    |                                |      |                           |        |      |  |  |  |  |
| 4  | Information Quality              | E-satisfaction     | 2.987                          | .075 |                           | 39.936 | .000 |  |  |  |  |
|  |                                  |                    | .130                           | .026 | .357                      | 5.048  | .000 |  |  |  |  |
| 5  | E-satisfaction<br>System Quality |                    | 3.129                          | .067 |                           | 46.914 | .000 |  |  |  |  |
|  |                                  |                    | .098                           | .029 | .251                      | 3.430  | .001 |  |  |  |  |
|  |                                  |                    |                                |      |                           |        |      |  |  |  |  |
| 6  |                                  | E-satisfaction     | 2.905                          | .064 |                           | 45.188 | .000 |  |  |  |  |
|  | Web-Service Quality              |                    | .189                           | .025 | .490                      | 7.433  | .000 |  |  |  |  |
|  |                                  |                    |                                |      |                           |        |      |  |  |  |  |
| 7  | 7                                |                    | 1.214                          | .479 |                           | 2.536  | .012 |  |  |  |  |
|  | E-satisfaction                   |                    | .471                           | .143 | .242                      | 3.301  | .001 |  |  |  |  |
| 8  |                                  | E-satisfaction     | 2.975                          | .117 |                           | 25.413 | .000 |  |  |  |  |
|  | E-trust                          |                    | .116                           | .037 | .231                      | 3.143  | .002 |  |  |  |  |
| 9  |                                  | E-loyalty          | 1.147                          | .195 |                           | 5.873  | .000 |  |  |  |  |
|  | E-trust                          |                    | .539                           | .062 | .551                      | 8.735  | .000 |  |  |  |  |

Table2. Results of hierarchical multiple regression analysis

| Hypothesis | Model  | R                                      | R Square     | Adjusted R<br>Square | Std. Error of<br>the Estimate | gr 0001011 unan.j. | Change Statistics |               |
|------------|--------|--|--------------|----------------------|-------------------------------|--------------------|-------------------|---------------|
|            |        |  |              |                      |                               | R Square<br>Change | F Change          | Sig. F Change |
| 10         | 1 2    | .551 <sup>a</sup><br>.711 <sup>b</sup> | .304<br>.505 | .300<br>.497         | .742<br>.629                  | .304<br>.202       | 76.301<br>35.229  | .000          |
| 11         | 1<br>2 | .551 <sup>a</sup><br>.933 <sup>b</sup> | .304<br>.871 | .300<br>.869         | .742<br>.321                  | .304<br>.568       | 76.301<br>381.787 | .000          |
| 12         | 1      | .551 <sup>a</sup>                      | .304         | .300                 | .742                          | .304               | 76.301            | .000          |
|            | 2      | .872 <sup>b</sup>                      | .760         | .756                 | .438                          | .456               | 164.561           | .000          |
| 13         | 1      | .551 <sup>a</sup>                      | .304         | .300                 | .742                          | .304               | 76.301            | .000          |
|            | 2      | .611 <sup>b</sup>                      | .374         | .363                 | .708                          | .070               | 9.700             | .000          |
| 14         | 1      | .242                                   | .059         | .053                 | .863                          | .059               | 10.896            | .001          |
|            | 2      | .630 <sup>b</sup>                      | .397         | .387                 | .694                          | .338               | 48.545            | .000          |
| 15         | 1      | .242                                   | .059         | .053                 | .863                          | .059               | 10.896            | .001          |
|            | 2      | .927 <sup>b</sup>                      | .859         | .856                 | .336                          | .800               | 489.695           | .000          |
| 16         | 1      | .242                                   | .059         | .053                 | .863                          | .059               | 10.896            | .001          |
|            | 2      | .882 <sup>b</sup>                      | .777         | .774                 | .422                          | .719               | 297.377           | .000          |
| 17         | 1      | .242                                   | .059         | .053                 | .863                          | .059               | 10.896            | .001          |
|            | 2      | .503 <sup>b</sup>                      | .253         | .240                 | .773                          | .194               | 22.522            | .000          |

## 4. RESULTS AND DISCUSSION

# 4.1 Hypothesis Testing

**Hypothesis 1:** Findings of original regression analysis table (t-value = 2.481; sig = 0.014) in relation to hypothesis 1 show that information quality from e-service quality influences positively on e-trust; Thus hypothesis 1 is supported.

**Hypothesis 2:** Findings of original regression analysis table (t-value = 4.253; sig = 0.000) in relation to hypothesis 2 show that system quality from e-service quality influences positively on e-trust; Thus hypothesis 2 is supported.

**Hypothesis 3:** Findings of original regression analysis table (t-value = 3.652; sig = 0.000) in relation to hypothesis 3 show that web-service quality from e-service quality influences positively on e-trust; Thus hypothesis 3 is supported.

**Hypothesis 4:** Findings of original regression analysis table (t-value = 5.048; sig = 0.000) in relation to hypothesis 3 show that information quality from e-service quality influences positively on e-satisfaction; Thus hypothesis 3 is supported.

**Hypothesis 5:** Findings of original regression analysis table (t-value = 3.430; sig = 0.001) in relation to hypothesis 5 show that system quality from e-service quality influences positively on e-satisfaction; Thus hypothesis 5 is supported.

**Hypothesis 6:** Findings of original regression analysis table (t-value = 7.433; sig = 0.000) in relation to hypothesis 6 show that web-service quality from e-service quality influences positively on e-satisfaction; Thus hypothesis 6 is supported.

**Hypothesis 7:** Findings of original regression analysis table (t-value = 3.301; sig = 0.001) in relation to hypothesis 7 show that e-satisfaction influences positively on e-loyalty; Thus hypothesis 7 is supported.

**Hypothesis 8:** Findings of original regression analysis table (t-value = 3.143; sig = 0.002) in relation to hypothesis 9 show that e-trust influences positively on e-satisfaction; Thus hypothesis 9 is supported.

**Hypothesis 9:** Findings of original regression analysis table (t-value = 8.735; sig = 0.000) in relation to hypothesis 9 show that e-trust influences positively on e-loyalty; Thus hypothesis 9 is supported.

**Hypothesis 10:** According to results from hierarchical regression,  $R^2$  for first phase in which e-trust was introduced in equation equaled 0.304 and then by introducing time poverty from situational factors in second phase  $R^2$  value for these two variables equaled 0.505 and  $\Delta R^2$  for time poverty variable was 0.202. According to increase in from 0.304 to 0.505 and also decrease in standard error of estimation from 0.742 to 0.629 it can be concluded that time poverty variable can play a moderating role between 2 variables of e-trust and e-loyalty, thus this hypothesis is supported.

**Hypothesis 11:** According to results from hierarchical regression,  $R^2$  for first phase in which e-trust was introduced in equation equaled 0.304 and then by introducing geographic distance from situational factors in second phase  $R^2$  value for these two variables equaled 0.871 and  $\Delta R^2$  for geographic distance variable was 0.568. According to increase in from 0.304 to 0.871 and also decrease in standard error of estimation from 0.742 to 0.321 it can be concluded that geographic distance variable can play a moderating role between 2 variables of e-trust and e-loyalty, thus this hypothesis is supported.

**Hypothesis 12:** According to results from hierarchical regression,  $R^2$  for first phase in which e-trust was introduced in equation equaled 0.304 and then by introducing physical immobility from situational factors in second phase  $R^2$  value for these two variables equaled 0.760 and  $\Delta R^2$  for physical immobility variable was 0.456. According to increase in from 0.304 to 0.760 and also decrease in standard error of estimation from 0.742 to 0.438 it can be concluded that physical immobility variable can play a moderating role between 2 variables of e-trust and e-loyalty, thus this hypothesis is supported.

Hypothesis 13: According to results from hierarchical regression,  $R^2$  for first phase in which e-trust was introduced in equation equaled 0.304 and then by introducing lack of transportation from situational factors in second phase  $R^2$  value for these two variables equaled 0.374 and  $\Delta R^2$  for lack of transportation variable was 0.070. According to increase in from 0.304 to 0.374 and also decrease in standard error of estimation from 0.742 to 0.708 it can be concluded that lack of transportation variable can play a moderating role between 2 variables of e-trust and e-loyalty, thus this hypothesis is supported.

Hypothesis 14: According to results from hierarchical regression,  $R^2$  for first phase in which e-satisfaction was introduced in equation equaled 0.059 and then by introducing time poverty from situational factors in second phase  $R^2$  value for these two variables equaled 0.397 and  $\Delta R^2$  for time poverty variable was 0.338. According to increase in from 0.059 to 0.397 and also decrease in standard error of estimation from 0.863 to 0.694 it can be concluded that time poverty variable can play a moderating role between 2 variables of e-satisfaction and e-loyalty, thus this hypothesis is supported.

**Hypothesis 15:** According to results from hierarchical regression,  $R^2$  for first phase in which e-satisfaction was introduced in equation equaled 0.059 and then by introducing geographic distance from situational factors in second phase  $R^2$  value for these two variables equaled 0.859 and  $\Delta R^2$  for geographic distance variable was 0.800. According to increase in from 0.059 to 0.859 and also decrease in standard error of estimation from 0.863 to 0.336 it can be concluded that geographic distance variable can play a moderating role between 2 variables of e-satisfaction and e-loyalty, thus this hypothesis is supported.

**Hypothesis 16:** According to results from hierarchical regression,  $R^2$  for first phase in which e-satisfaction was introduced in equation equaled 0.059 and then by introducing physical immobility from situational factors in second phase  $R^2$  value for these two variables equaled 0.777 and  $\Delta R^2$  for physical immobility variable was 0.719. According to increase in from 0.059 to 0.777 and also decrease in standard error of estimation from 0.863 to 0.422 it can be concluded that physical immobility variable can play a moderating role between 2 variables of e-satisfaction and e-loyalty, thus this hypothesis is supported.

Hypothesis 17: According to results from hierarchical regression,  $R^2$  for first phase in which e-satisfaction was introduced in equation equaled 0.059 and then by introducing lack of transportation from situational factors in second phase  $R^2$  value for these two variables equaled 0.253 and  $\Delta R^2$  for lack of transportation variable was 0.194. According to increase in from 0.059 to 0.253 and also decrease in standard error of estimation from 0.863 to 0.773 it can be concluded that lack of transportation variable can play a moderating role between 2 variables of e-satisfaction and e-loyalty, thus this hypothesis is supported.

## 4.2 DISCUSSION AND CONCLUSION

In electronic world competition with pressing few keys in increasingly being intensified and customers are able to compare various alternatives spending less time and effort [57]. It should be noted that in this electronic environment, also there are online customers who merely browse the web and do not purchase, the important task of shop website management is to convert browsing customers in to actual and loyal ones because loyal customers reduce costs related to attracting new customers while increase sales and profit of business for a long time. Therefore present study aims to examine the effect of eservice quality on e-trust and e-satisfaction as key factors influencing creation of e-loyalty in e-business context. Also it was tried to demonstrate moderating effect of situational factors e.g. time poverty, geographic distance, physical immobility and lack of transportation on e-loyalty level.

Results suggest that customer loyalty to e-shops is directly influenced by e-trust in and e-satisfaction with e-shops which in turn are determined by e-service quality. First, e-service quality directly influences e-trust and e-satisfaction and also has an indirect effect on e-satisfaction through e-trust; this means that the better e-service quality, the more e-trust in and e-satisfaction with online shops services would be. According to effects of information quality, system quality and web service quality on customers e-trust and e-satisfaction, managers may exploit these results in order to improve quality of online shop services.

Also the obtained results showed that e-trust influences e-loyalty both directly and via e-satisfaction. This is consistent with previous studies [58, 59]. Customers may have more concerns about security, payment, etc in e-purchase setting thus they should have a high level of trust to embark on e-purchase. With respect to this fact they more likely purchase goods and services from e-retailers whom they can trust [59]. According to the above, it seems that trust is a precedent for satisfaction and purchase.

Second, obtained results suggest the direct effect of e-satisfaction on e-loyalty. Therefore if e-shops are able to provide appropriate e-service quality to customer in order to enhance e-satisfaction this may lead to higher frequency of use of those services by customers, recommendation of them to others and repeated purchase; thus e-service quality can be considered as an important factor in creation and development of e-loyalty and this fact has implications for mangers who want to achieve their organizational perspective.

Finally, data analysis shows that situational variables (time poverty, geographic distance, physical immobility, lack of transportation) can moderate relationship between e-trust and/or e-satisfaction and e-loyalty. These results are nearly consistent with previous research results [6, 8, 12, 44, 45]. But results of Kim [60] are completely in contrast with results obtained in present research for situational variables. Therefore situational variables studied in present research can influence initiation of transaction of customer with online retailer and customer attitude importance and in turn they can influence customer loyalty. Thus customers with geographic limitation may display a higher level of loyalty in addition to higher motivation for initiation of online purchase. Thus online shops should target customers who are in certain conditions so that they can enhance the relationship between e-trust/e-satisfaction. Also when online retailers feel that customers have sufficient time for shopping, it is better to target them for specific plans of creating loyalty to their e-shops.

Finally, present study employed a design which may create limitations for generalizing of its results. One limitation was the fact that population of one single area were studied and in order to generalize findings of present research other populations also should be studied. Also only a few situational variables were examined in present study and future works can address other situational factors so that more insight about them is obtained.

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