Trust, Satisfaction, and Loyalty Formation in Electronic Commerce

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Abstract-Web based oriented services have become an integral part of peoples' life during the last decade. Less error, mistake, cost, and process time are the advantages of Electronic Commerce (E-commerce) for the buyer and seller. Ease of use and usefulness of E-commerce have been led to the popularity of this phenomenon. A numerous number of customers visit and register on the commerce sites, but they never buy anything or purchase a little stuff online due to the lack of trust, satisfaction and lovalty. Loval customers are an important asset for companies. Converting inactive and non-profitable customers to active and profitable customers by creating trust, satisfaction, and loyalty is the main aim of this research. A conceptual framework shows customer's trust, satisfaction, and loyalty formation based on technological, organizational and customer factors. Data was collected by questionnaire and by using of Likert scale. Statistical analyses confirmed the reliability and validity of the model. The outcomes show that organizational factors have a significant effect on Etrust and technological factors have a significant effect on Esatisfaction. E-trust and E-satisfaction lead to E-loyalty in E-commerce.

Index Terms—loyalty, trust, satisfaction, e-commerce

I. INTRODUCTION

Frequent buying manner besides of satisfactory attitude toward a subject in a particular frame of time is defined as loyalty. Behavioral and attitudinal aspects of loyalty were investigated by Mouakket and Al-hawari [1]. Customers of online companies make decision based on their emotional and attitude that come from their previous purchasing experiences. Loyalty or on the other words, repeat purchasing is the result of customer commitment, not inertia [2]. Loyalty embraces attitudinal and behavioral preferences toward the seller and encompasses commitment; loyal customers are hardly diverted to the other alternatives [3]. Higher purchasing intent, willingness to pay more, and resistance to switch are the symbols of customer loyalty. Customer satisfaction and trust play vital roles in the formation of loyalty in the Ecommerce [4]. E-satisfaction is a pleasurable fulfillment collected over previous transaction experiences that affect overall evaluation of the online retailer [5]. E-trust is a customer belief or confidence that seller will not take advantage of the consumer vulnerability [6]. In this

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research a conceptual framework has been presented that shows how loyalty forms in E-commerce environment.

A review of literature is presented in the next section. The effective factors have been categorized in three groups- customer, organizational and technological factors, which are three main entities in E-commerce. The research methodology has been presented in the section four. Discussion and conclusion of research are in the section five.

II. REVIEW OF LITERATURE

Loyal customer is a strong asset for firms and also leads the businesses constant growth [7]. In the definition of loyalty, satisfaction plays a critical role in the previous marketing literature. However, this argument emphasizes a satisfaction-loyalty link, which was challenged by several researches who claimed that more than half of the satisfied customers eventually switch to another retailer [8]. They also noted that "only satisfying customers... is not enough to keep them loyal". To fill this void in the satisfaction studies, trust was examined to play a critical role in loyalty improvement. Balabanis, Reynolds [9] proposed that trust, as a relational concept, positively affects loyalty. A hierarchical cognitive structural model consisting of personal values such as motivation, attribute evaluation, and loyal behavior has been proposed by Koo [10].

In the previous studies, E-satisfaction (viewed as a transaction specific characteristic) and E-trust (viewed as a relational characteristic) have been determined to influence E-loyalty [11]. Some researchers insist that a satisfied customer is more likely to create a closer relationship with the retailer with the emphasis on the impact of E-satisfaction on E-loyalty [12]. Several researchers concentrated on the important role of E-trust in establishing E-loyalty, insisting that it is a "virtual circle". When customers trust an online retailer, they are more enthusiastic to disclose their personal information. Few researchers have tried to examine the sequential relationship between E-satisfaction, E-trust and E-loyalty. The relationship between these three constructs are established as either E-satisfaction then E-trust and then E-loyalty [4], or E-trust, then E-satisfaction and then Eloyalty [13].

In variant studies, different factors have been mentioned that they affect E-satisfaction, E-trust, and Eloyalty. Table I shows these factors in a concise form.

| Authors | Factors discussed by other researchers | | | |
|---------|--|--|--|--|
| [14] | Usability, security, credit card security, easy return/exchange methods, price, detailed descriptions of items, secure personal information, pictures of merchandise, and simple to search. | | | |
| [15] | Customer orientation, market orientation, inter-functional coordination, competitor orientation, customization, service quality, number of service, communication, cooperation, collaboration, reliability, interaction, relationship, satisfaction, trust, loyalty. | | | |
| [16] | Site quality, degree of trust, market orientation, technical trustworthiness, and user's web experience. | | | |
| [17] | Product quality, delivery time, quantity, price/cost, process transparency. | | | |
| [18] | In this paper the author classifies EC Development Risk in three main parts: 1- technical factors, 2- organizational factors, and 3- environmental factors. | | | |
| [19] | Strategy types: defender, prospector, analyzer, or reactor-prospector and risk level. | | | |
| [20] | People, processes, culture, E-service trends, customer-oriented trends, employee megatrends, organizational trends, general technology trends, enterprise technology trends. | | | |
| [21] | Product selection, website performance, customer support, ease of ordering, on-time delivery, product information, on-time delivery, price, and shipping and handling. | | | |
| [22] | Web functionalities, web spending, use of EDI, greater partner, perceived obstacles and systems | | | |
| [23] | Responsiveness, reliability, security, credibility, competence, courtesy, access, communication, understanding the customer and tangibles. | | | |
| [24] | Ease of use in information technologies, using the technology acceptance model (TAM) and effect of previous computer experience on anxiety. | | | |
| [25] | Including customization, customer interface quality, convenience and character, interaction, contributes to generating E-loyalty. | | | |
| [26] | Privacy, customer, expertise, low cost, ease, evaluation, strategy, services, speed, delivery, stability, security, variety, payment, plenty and low price | | | |
| [27] | (1) responsiveness (RS), (2) ease of use (EU), (3) fulfillment (FF), (4) personalization (PL), (5) individualized attention (IA), (6) visual appearance (VA), (7) information quality (IQ), (8) trust (TT), and (9) security/privacy (SP) | | | |
| [28] | Retail price, manufacture services and competitive advantages | | | |
| [29] | Private enterprises, trust sharing, government and family culture | | | |

TABLE I. E-TRUST, E-SATISFACTION, AND E-LOYALTY FACTORS IN THE OTHER STUDIES

TABLE II. CLASSIFICATION OF FACTORS

| | Technology Factors | Organization Factors | Customer Factors |
|----------------|--|---|---|
| E-satisfaction | System Quality Information Quality Personalize Web Feature Language Options Search and Comparing Facilities Product and Service Information Using other Systems Collecting and Analyzing Customer Information Fast and Easy Payment Buying and Selling 7 days and 24 hours | Customer Segmentation Customize Products Fast Response to Customer Inquiries Variety of Goods and Services Rewards and Discounts | Perceive Site Quality Customer Experience in E- commerce Less Time Transaction Perceive Usefulness Perceive Ease of Use |
| E-trust | Customer Bulletin Board Security of Information and Privacy Customer Feedback Facility Complain and Follow up Facility | Clear Shopping Process Money Back Warranty Contact Interactivity Organization Reputation Guaranty Policy Selling High Regarded Brands Contribution with Well Know Company Tailored Advertisement and Promotion Fast and Safe Delivery | Perception of Hardware and Software Reliability Perception of Risk Perceive Market Orientation Positive Referrals from Friends Belief in Integrity Belief in Competence |

Effective factors were categorized based on the nature and their effect. Some technological factors effect on Esatisfaction and some of them affect E-trust. The factors that relate to organization policy and plan were placed in organization part. Some of them influence E-satisfaction and some of them E-trust. The factors that relate to customers' belief or perception were divided into two parts. Some of them affect E-satisfaction and some of them influence E-trust. Table II shows the classification of factors in a concise form.

III. RESEARCH METHODOLOGY

Critical factors were extracted from a review of literature. In this section, the factors, which were discussed by other researchers, were collected and carefully categorized into three groups of technology, organization and customer. Then experts added several factors, which were neglected and they changed the position of some factors in the research framework. Their opinions were considered and presented in the new research structure to other experts to review and for their feedback. Finally, based on all the experts' opinions, the research framework was formed. Based on the above classification the conceptual framework formed. Fig. 1 shows the research model.



Figure 1. E-loyalty formation model

Based on the model eight hypotheses were considered for this research:

H1: Technological factors are positively related to E-satisfaction.

H2: Organizational factors are positively related to E-satisfaction.

H3: Customer factors are positively related to E-satisfaction.

H4: Technological factors are positively related to E-trust. H5: Organizational factors are positively related to E-trust.

H6: Customer factors are positively related to E- trust.

H7: E-satisfaction is positively related to E-loyalty.

H8: E-trust is positively related to E-loyalty.

A. Data Collection

Our research subjects were the customers of online companies who had at least several Internet shopping experiences. The participants were asked to fill out the questionnaires based on their experience with E- commerce. The questionnaires were also distributed through the Internet to their email. The number of respondents was 266, from which 16 questionnaires were not recorded in the dataset due to incomplete or giving the same response to all questions. Finally, 250 questionnaires were considered for investigation and analysis.

B. Demography

The final number of participants was 250 in this survey, in which (52.4%, n=131) participants were male and (47.6%, n=119) participants were female. Among the participants, 40.4 % were undergraduates, 30.3 % master students and 29.3 % had doctorate degrees. 28 % of the participants aged between 20 and 30, 46 % between 30 and 40 and 26% between 40 and 50 years old. The findings also showed that most of these customers do online purchasing 3-4 times per month. Table III describes the research sample size in terms of gender, age, education level and the frequency of purchasing.

TABLE III. DESCRIPTION OF PARTICIPANTS

| Characteristic | Number (N=250) | Percentage | Characteristic | Number (N=250) | Percentage |
|----------------|-------------------|------------|----------------|-------------------|------------|
| | Gender | | | Use of EC | |
| Male | 131 | 52.4 | 1 time | 12 | 5 |
| Female | 119 | 47.6 | 2 times | 38 | 15.1 |
| | Education | | 3 times | 69 | 27.5 |
| Undergraduate | 101 | 40.4 | 4 times | 60 | 23.9 |
| Master's | 76 | 30.3 | 5 times | 47 | 18.9 |
| Doctorate | 73 | 29.3 | 6 times | 12 | 4.8 |
| | Age | | 7 times | 7 | 2.8 |
| 21 to 30 | 70 | 28.0 | 10 and more | 5 | 2 |
| 31 to 40 | 115 | 46.0 | | | |
| 41 to 50 | 65 | 26.0 | | | |

C. Data Analysis

Data type (nominal, ordinal and scale), data distribution (normal or non-normal) and the number of independent and dependent variables are the determination for choosing a proper statistical test Standard error of skewness and standard error of kurtosis test have been applied for normalization test of data distribution. All standard error of skewness and kurtosis measurements were between -2 and +2. This shows that data distribution is normal [30]. Reliability indicates the stability of measure over the diversity of conditions [31]. The amount of inaccuracies made by any measure is determined by Cronbach's alpha test used to inter-item scores and to the overall measures. Brown proposes the minimum value of 0.8 for tests, which measure attitudes or values [32]. More generally, Nunnally claims that the acceptable level of exploratory study is 0.7 or above. All Cronbach's alpha measures suffice for the Nunnally' standard and are close to Brown's recommended theories,

thus reliability of measures is concluded to be satisfactory. The Kaiser Meyer Olkin (KMO) measure of sampling adequacy test was used for data suitability. The outcomes from KMO test in all the constructs were more than 0.5. KMO test confirm our structure and data in terms of adequacy and sphericity [30]. Regression analysis has been applied for factors, which are in the technological, organizational, and customer classifications based on the relationship between these factors with E-satisfaction and E-trust and in the next step E-satisfaction and E-trust with E-loyalty. Table IV shows the effect of technological, organizational and customer factors on E-satisfaction and E-trust and also E-satisfaction and E-trust on E-loyalty.

Data in Table V shows that technological factors have the most effect on E-satisfaction formation and organizational factors have the most effect on E-trust. Esatisfaction has more effect than E-trust on E-loyalty formation in E-commerce.

| Hypotheses | Relationship | | | R | Conclusion |
|--|------------------------|-------------------|----------------|-------|------------|
| H1 | Technological factors | \longrightarrow | E-trust | 0.548 | Supported |
| H2 | Organizational factors | \rightarrow | E-trust | 0.796 | Supported |
| H3 | Customer factors | \rightarrow | E-trust | 0.727 | Supported |
| H4 | Technological factors | \longrightarrow | E-satisfaction | 0.827 | Supported |
| H5 | Organizational factors | | E-satisfaction | 0.619 | Supported |
| H6 | Customer factors | \rightarrow | E-satisfaction | 0.816 | Supported |
| H7 | E-satisfaction | \rightarrow | E-loyalty | 0.601 | Supported |
| H8 | E-trust | \rightarrow | E-loyalty | 0.510 | Supported |
| The measures of F-test are significant | | | | | |

| TABLE IV. 7 | THE RESULTS OF REGRESSION | ANALYSIS |
|-------------|---------------------------|----------|
|-------------|---------------------------|----------|

IV. DISCUSSION AND CONCLUSION

The rapid development of new computer applications and Internet allows firm to expand the number and type of web based oriented services. Although, a numerous number of people have access to the Internet, some are reluctant to utilize many of its capabilities. Many people visit and register in the E-commerce website, however, they do not buy anything or purchase a little stuff per year due to lack of trust, satisfaction, and loyalty. Overcoming this obstacle has therefor become an important focus for organization and researcher. This research aims to show how E-trust, E-satisfaction, and E-loyalty forms based on technological, organizational and customer factors.

Different statistical tests were applied to data analysis. Demography of participants was discussed first. The normality of data distribution was examined by the Skewnwss and Kurtosis test. The results of KMO test showed that our variables and constructs are suitable for factor analysis. Factor analysis helped us to develop better model and regression analysis revealed that there are strong relationship between technological factors and E-satisfaction (R=0.827), organization group factors and E-trust (R=0.796), and between E-satisfaction and E-loyalty (R=0.601). The results can be useful for academic and practitioners.

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