The Role of Perceived Value on Customer E-Shopping Intention Using Technology Acceptance Model, (TAM)

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Abstract

Lack of trust in e-commerce is a major reason that prevents customers to shop via internet. Since customers assess the cost and benefits and then decide to purchase, this study aims to investigate the role of perceived value and online trust on customer intention towards e-shopping through the Technology Acceptance Model, (TAM). Testing the relationships between the variables of the model, 160 questionnaires were accomplished by the graduated students of Information Technology (IT) management who are studying virtually in the Islamic Azad University and at least have had an e-shopping experience once before. The results showed that the perceived ease of use, usefulness and perceived value have a positive impact on customers’ attitude and trust in online shopping. In addition, both customer attitudes and trust have a positive impact on their tendency to shop on the internet.

Keywords: Technology Acceptance Model, Perceived Value, Trust.
I. Introduction

The organizations always tend to find a new approach for increasing sales and their product and service profitability. The majority of the organizations have been able to improve their efficiency using IT and achieve their main objective namely the increased profitability [1]. The rapid expansion of the Information and Communication Technology in everyday business activities is one of the most important business events in the world. Applying IT in the business field has had astonishing benefits for both customers and suppliers. Easily carried communications, quick access, 24-hour purchase, delivery of the purchased goods in the desired location and low prices are only a part of e-commerce advantages [2]. Decreasing trips within the city significantly due to the e-shopping indeed reduces the time from the beginning to the end of the buying process. Besides, it will lead to increase the quality of deciding for purchasing, decrease fatigue in one hand, and enhance the pleasure of shopping due to compare the products simultaneously in short time, in another hand [3]. Internet shopping has been grown in recent years. Nevertheless, despite growing and public welcome to e-shopping, the majority of the worldwide people not show a tendency to e-shopping. They also have announced that the security issues, ensuring the vendor company and inadequate knowledge in website technology are their most important reasons of this unwillingness [2].

While the models of using IT in the business field stresses on its advantages, but it is assumed the internet benefits and buying and selling through internet were already considered enough and the debates are to focus on how to create motivation in people and making culture for its acceptance, in a word, removing it from talk and theory to login practice. In this research, the Technology Acceptance Model has been used which according to the performed surveys by the former researchers, indicates that the IT acceptance by the individuals and finally its applications such as shopping through these devices can be well justified [4]. Since customers evaluate the conditions of costs and benefits at the time of purchasing and then decide to buy, it is necessary to bring this factor in an account in the investigations. In previous researches, the perceived value relation has been investigated while internet shopping [5, 6, 7]. Moreover, the integration of this important factor with the Technology Acceptance Model which is the most prominent factor in matching clients has not been scrutinized yet.

The perceived value refers to customer perception of what they lose and what they achieve in return. Indeed, this is simply the costs and benefits analysis. Since, the internet is the appropriate channel for purchasing, it seems a better understanding of how shopping would be accepted through the internet by customer and the factors have impact on it somehow, will be necessary. Also, since customers feel higher risk and uncertainty while online shopping than the traditional shopping, the trust while online shopping is one of the most important elements discussed in e-shopping [3, 8, 9].

The lack of trust in e-commerce is a main reason which will prevent customer entrance to the business transactions field in website [10, 11]. So, that is why this factor must be considered to succeed in the absorption process of the individuals to online shopping. As a result, this survey attempts to investigate the role of perceived value and trust in e-shopping acceptance by customers using Technology Acceptance Model introduced by Davis in explaining how customer will accept technology. Therefore, we can obtain precise
understanding of a process during customers turning to e-shopping. So, now the question is how much will the perceived value have impact on the attitude towards the individuals’ behavior and trust and finally to their willingness to e-shopping.

II. Theoretical Background & Hypotheses

Technology Acceptance Model was at first represented by Davis in 1989. This model has been suggested by the information systems users to determine the factors affecting information technology. According to this model, two factors of the perceived usefulness and the perceived ease of use indicate the base of the technology acceptance. The perceived usefulness presents an amount on which one believes will enhance using its performance system and will be effective; and the perceived ease of use refers to a degree upon one believes using a particular technology or system may need not higher effort. Davis has suggested that the attitude of using the system or technology in the technology acceptance is affected by these two factors [12].

In the researches performed by Davis in 1989, it has been shown that the perceived ease of use will affect positively on both the attitude and the perceived usefulness. The perceived usefulness and the perceived ease of use are the two variables which motivate the customer to use e-shopping [13]. In 1989, Davis has introduced the perceived usefulness as the primary determinant and the perceived ease of use as the second important factor in the technology acceptance. The direct impact of the perceived ease of use on the perceived usefulness has constantly been examined in empirical studies and Davis has used it in the Technology Acceptance Model for acceptance of different kinds of technologies [12]. Thus, we can describe two following hypotheses:

H1- The perceived ease of use has a positive impact on attitude towards e-shopping.
H2- The perceived ease of use has a positive impact on the perceived usefulness of e-shopping.

The more experience one has in shopping, the more confidence the customer will have to the vendor. Since, vendors have been replaced by websites in e-commerce, the experience and the perception of the customers to website can affect theirs assumptions about the firm nature and its reliability. If the client evaluates using the ease of use and usefulness of a site in a high level, they will find it reliable [8]. Regarding to the above assumptions, we can explain the following hypotheses:

H3- The perceived ease of use of online shopping has a positive impact on trust.
H4- The perceived usefulness of online shopping has a positive impact on trust.

Customers prefer to assess their online shopping regarding its cost and benefit. For example, the benefits can increase comfort and reduce transaction time. E-shopping provides more comfort for its users, since in this research, the attitude to shopping refers to the positive and negative about using internet while purchasing. Therefore, shopping through internet makes more comfort for customers, the customer is likely to have a positive attitude, feel ease and usefulness consequently. Therefore, it will create a positive impression and tendency in customer to use website for shopping [14].

H5- The perceived usefulness has a positive effect on attitude towards e-shopping.

Most research on perceived value has been implemented by the individuals in marketing research areas. Marketing studies indicate that if a customer perceives a value and a benefit in a
product or a service quality, then their satisfaction of that product or service will be increased. It leads to increase tendency towards e-shopping and buying product or service eventually. The greater perceived value is, the greater satisfaction of individual will be. This is usually related to the attitude of using technology [1]. So, the following hypothesis can be stated:

H6. The perceived value has a positive effect on attitude towards e-shopping.

The perceived value refers to the consumers’ perception against what they lose and what they achieve. Indeed, it is an analysis of cost and benefit somehow. Creating trust in e-shopping makes retailers to add value to their customers and on the other hand, uncertainty associated with transactions due to purchasing will be reduced because of complication reduction in some segments of purchasing. So, we can say there is a direct relation between trust and perceived value [15]. Thus, we can propose the following hypothesis:

H7- The perceived value of e-shopping has a positive effect on trust.

Trust refers to an adjustment upon which a person believes that using the new technology will be reliable and valid. Most researches have stressed on the importance of trust in long term development between the organization and customer. The nature of the internet has changed itself to an ideal medium for transactions. The investigations show that trust is a key factor in e-commerce. The ease of use and usefulness of usage also play an important role in forming trust and finally the created trust will impact on general attitude of the people [14]. Therefore, we can present the hypothesis as follows:

H8- Trust has a positive influence on attitude towards e-shopping.

Attitude is defined as both positive and negative senses of consumers about the act of e-shopping behavior. In 1989, Davis defined attitude in his famous model as favorable and unfavorable feeling about using technology and concluded that there is a direct relation between attitude towards usage and tendency of its usage. Since, shopping through the internet creates more comfort for users, there is more probability that the customer feels more comfortable, usefulness and will have positive attitude, so, there will be a positive feeling and eventually intention in customer to use website for shopping [16,19].

H9- The attitude towards e-shopping has a positive effect on intention to e-shopping.

The attitude towards e-shopping indicates a probability on which one customer intends to buy online [17]. The customer’s trust into a company plays a special role in determining customer activities associated with the company. Consisting with the theory of planned behavior, trust is a belief that affects the customer’s tendencies [18]. The empirical experiences have shown that trust has an impact on individuals’ tendency towards buying a product from a company. So, we will have a hypothesis as follows[20]:

H10- Trust has a positive effect on tendency towards e-shopping.

Regarding to the above discussion, the conceptual model of the present research can be represented as Figure 1.
III. Methodology

Since, the aim of this research is to designate causal relationships between the variables of perceived ease of use; perceived usefulness; perceived value; attitude; trust and intention to e-shopping, then, the research will be based specifically upon the Structural Equation Modeling regarding functional purpose and the way of gathering descriptive information and the type of correlation as well. In the analytical model of the present research; perceived ease of use, perceived usefulness and perceived value are exogenous latent variables and attitudes, trust and intention to e-shopping are endogenous latent variables. At one hand, we can consider the perceived ease of use, perceived usefulness and perceived value as independent variables; the attitude and trust as intermediate variables and the intention to e-shopping as dependent variables.

The statistical population of research includes postgraduate students in IT management who are studying virtually in the Islamic Azad University and at least have had an experience of purchasing online once before. Given that the students are the sample individuals; the variables of age, education, skill in using computers and internet and also the access to the internet have a relatively typical range which their effect has been controlled in this survey. For analyzing data; 250 questionnaires were distributed among the students from which 160 analyzable questionnaires were obtained eventually. The collection tool of data in this research is realized by questionnaire. The designed questionnaire includes 23 items by using five-point Likert scale.

In order to determine the validity of the questionnaires, the viewpoints of 5 professors who hold a doctorate degree in related field as experts as well as students’ opinions who had already answered the questions in the pre-test were used and the problems of the questionnaire were removed.

In order to calculate the reliability of the test, Cronbach’s alpha coefficient was used. The calculated reliability coefficient for the variables indicates that the questionnaire is reliable sufficiently. It is necessary to mention that no question because of inappropriate data and not explaining of the associated variable variance was eliminated from the total questions. Table 1 presents the calculated alpha coefficient for each of the research variables[21].

TABLE I Reliability Test
Factor loading has been used in order to assess the reliability of questions. Factor loading is a form of construct validity which is gained by factor analysis. Factor analysis is a statistical technique which is frequently used in most of the human sciences. The exogenous latent in the exploratory factor analysis and the endogenous latent of KMO value are equal to 0.83 and 0.79 respectively that indicates sufficiency of sampling for the research variables. Also, because the significant coefficient of Bartlet test was equal to zero (smaller than 0.05), factor analyzing was suitable for the construction identification. Confirmatory factor analysis was used in order to verify measurement models accuracy, thus the consequences showed that all of the factors loading were greater than 0.3 which presented convergent validity. [22]

IV. Results

Before entering to the hypotheses testing and the conceptual model of the research, it is necessary to ensure measurement models accuracy of the research variables. The consequences of the confirmatory factor analysis of the exogenous and endogenous latent variables of the research which are shown in Tables 2 and 3 respectively indicate that all of the measurement models are suitable and all the items and parameters of the model are significant. Also, the indexes of the measurement model proportion represent suitability of all measurement models.

In order to analyze the collected data and test the hypotheses, structural equations modeling was used. The relations between the model variables were evaluated by the standardized coefficient and t-values with Lisrel software and decision was made to confirm or reject the hypotheses based on it.

TABLE II CONFIRMATORY FACTOR ANALYSIS FOR THE EGOGENOUS LATENT VARIABLES

<table>
<thead>
<tr>
<th>Index</th>
<th>Variable</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of use of e- shopping</td>
<td>Perceived ease of use</td>
<td>0.84</td>
</tr>
<tr>
<td>Ease of find product and services in e-shopping</td>
<td></td>
<td>0.86</td>
</tr>
<tr>
<td>Preferring e- shopping than shopping from store</td>
<td></td>
<td>0.81</td>
</tr>
<tr>
<td>Easily achieving of information via internet</td>
<td></td>
<td>0.88</td>
</tr>
<tr>
<td>Saving time in e-shopping</td>
<td>Perceived usefulness</td>
<td>0.87</td>
</tr>
</tbody>
</table>
24 hour buying in e-shopping & 0.80 \\
Increasing efficiency by e-shopping & 0.81 \\
Customer satisfaction of e-shopping comparison with cash payment & Perceived value 0.79 \\
Suitability of the product price comparison with its quality & 0.73 \\
Receiving appropriate services rather than cash payment & 0.72 \\
Benefits of online shopping rather than store shopping & 0.71 \\

Measurement Model Results: Chi-square:75.21; df:30; RMSEA: 0.049; GFI:0.94; AGFI:0.93; NFI:0.95

| TABLE III CONFIRMATORY FACTOR ANALYSIS FOR THE ENDOGENOUS LATENT VARIABLES |
|-----------------------------|-----------------|----------------|
| Index | Variable | Factor loadings |
| Trust in website | Trust | 0.84 |
| The confidentiality of personal data in e-shopping | 0.86 |
| Misuse of credit card | 0.81 |
| Fear of putting personal information in website | 0.88 |
| Suitability online shopping idea | Attitude | 0.87 |
| Easily contact the seller via website | 0.80 |
| Easily search the site | 0.81 |
| Spent an enjoyable shopping through web | 0.85 |
| Consult with family in choosing appropriate sites for e-shopping | Intention to e-shopping | 0.79 |
| Intention to e-shopping in the future | 0.73 |
| Recommending e-shopping to others | 0.72 |
| Consult with family in choosing appropriate sites for e-shopping | 0.71 |

Measurement Model Results: Chi-square:73.11; df: 31; RMSEA: 0.049; GFI:0.92; AGFI:0.92; NFI:0.94

The standardized coefficient (factor loading) refers to the correlation values between two variables and is used to compare the effects of the model components. The higher the ratio, the greater the influence of the independent variable on the dependent variable is. The T-value is used to approve or reject of the research hypotheses. So, the greater the number than 1.96, the stronger the causal effect of independent variable on dependent variable will be. [23]

On the wake of all the standardized ratios are higher than 0.5 and their t-value is higher than 1.96, we can conclude that all the hypotheses of the research will be accepted. The consequences of the standardized coefficients of the structural equation model and their t-value are provided in Table 4. As shown in table 4, all of the variables have required
significant t-value (greater than 1.96 or smaller than -1.96), so, all of the research hypotheses has been accepted.

TABLE IV THE RESULTS OF THE STANDARDIZED COEFFICIENTS AND T-VALUE

<table>
<thead>
<tr>
<th>Path</th>
<th>Standardized Coefficient</th>
<th>T-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived ease of use → Attitude</td>
<td>0.78</td>
<td>2.27</td>
</tr>
<tr>
<td>Perceived ease of use → Usefulness</td>
<td>0.8</td>
<td>7.78</td>
</tr>
<tr>
<td>Perceived ease of use → Trust</td>
<td>0.73</td>
<td>3.34</td>
</tr>
<tr>
<td>Perceived usefulness → Trust</td>
<td>0.63</td>
<td>4.09</td>
</tr>
<tr>
<td>Perceived usefulness → Attitude</td>
<td>0.71</td>
<td>2.12</td>
</tr>
<tr>
<td>Perceived value → Attitude</td>
<td>0.67</td>
<td>3.93</td>
</tr>
<tr>
<td>Perceived value → Trust</td>
<td>0.83</td>
<td>2.58</td>
</tr>
<tr>
<td>Trust → Attitude</td>
<td>0.75</td>
<td>2.33</td>
</tr>
<tr>
<td>Attitude → Intention to e-shopping</td>
<td>0.78</td>
<td>7.65</td>
</tr>
<tr>
<td>Trust → Intention to e-shopping</td>
<td>0.65</td>
<td>1.98</td>
</tr>
</tbody>
</table>

V. Discussion & Conclusion

The main aim of this research is to study the role of the perceived value on e-shopping and it is tried to pay attention to better recognition of the individuals’ mental process of intention to e-shopping.

For checking the effect of the perceived value of the customer on e-shopping, the Technology Acceptance Model by Davis was used which according to this research, variables of the perceived ease of use and perceived usefulness of the internet belong to the customer as the factors influencing buying, have a positive effect on the customer attitude and confidence for e-shopping. The results of the research shows that the perceived usefulness, perceived ease of use and a value that they will concept after analyzing cost-benefit (perceived value) are as effective factors on the customer positive sense and their trust to e-shopping. The comparison of the research findings with the research literature also shows that the implemented researches in the area of the consumers’ behavior in the internet markets can be placed in this model framework and the significant and positive relation predicted based on conceptual model of the present research could well describe the customers’ behavior in e-shopping among the students.

Since, forming of the positive experience is very important in the first shopping products of the company, the customers who purchase the products for the first time, should be taken into special consideration. Therefore, the companies ought to try to create a positive experience in customers’ mind while communicating with them. So, the ease in searching desired commodity, the convenience of ordering, creating trust in maintaining customer’s data and timely delivery of goods play a key role in creating positive experience for the customer.

Despite increasing use of internet in Iran, e-commerce and online shopping, have not been appreciated so much. Perhaps, the greatest barriers are to deploy of e-commerce and the lack of familiarity with these processes of e-commerce in the active organizations in this context are the subject. One of these processes is how the customers deal with this channel of
purchasing and their attitude towards e-shopping. Therefore, a better understanding of the processes which leads customers turning to this form of shopping helps organizations to use better of the internet for their selling. Using proper advertising and education, the organizations would gain a better cognition about this device for their customers, so they would be able to have a better understanding of this shopping channel and its ease and usefulness as well. Given that many of the costs such as establishing physical stores or fees are reduced through these channels, they can take action to reduce their prices, so the customer will choose this form of shopping easier than the traditional one.

The results of the research indicate that the individuals show respect to the product price against the quality they received while choosing the internet for purchasing their goods, so the stores who intend to sell their goods online ought to consider that the customer perform the cost-benefit analysis mentally before choosing shopping channel. Thus, the internet retailers must create worth sense and intention to purchase in their customers regarding to this factor and cost reduction of this procedure. Also, with reassure customers with their information preservation such as personal and credit information, the retailers must create a positive attitude towards e-shopping in their customers and encourage them to buy online. Respecting to research findings helps e-business owners (even non-electronic one) to realize the target market, identify process improvement and determine the target customers and develop the area of the activity of the individuals who are active in these areas.

For later investigations and deepening the research model, it is suggested that the effect of different aspects of the perceived value (social, emotional, financial and so on) must be considered as well. Also, surveying the problems and issues of using internet as a channel for purchasing by the customers would extremely help the internet stores owners. It is worth noting because of different barriers in accomplishing questionnaires, the regarding community consists of educational individuals who were familiar with e-shopping, therefore, it is recommended to investigate other groups of the customers in the future researches, so extending the consequences to different groups will be possible.
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