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Investigating the Effect of Subjective Factors on the Online Shopping Willingness in Iran

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Authors' contributions

This work was carried out in collaboration between all authors. Authors SN and MJ designed the study, performed the statistical analysis, wrote the protocol, and author MMS wrote the first draft of the manuscript and managed literature searches. Authors SN and MMS managed the analyses of the study and literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Aims: The main objective of this study was to investigate the influence of subjective factors in the tendency to shop online.
Study Design: The research model was formed using some variables such as raw data collection, perceived benefits of web-surfing, perceived risks of online shopping, overall evaluation of online shopping and the willingness to shop online. This study followed a

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descriptive, survey method and it was a correlational one since it investigated the relationship between variables.
Methodology: The statistical population of this study included all students of Tehran Islamic Azad University, Science and Research Branch and Islamic Azad University of Yazd. Using Krejcie and Morgan's sample size estimation table (1970), 374 individuals were selected for Science and Research branch and 300 cases were chosen for Yazd branch based on stratified random sampling technique. A field method was used in order to collect data, and the research instrument used here was a questionnaire. Using structural equation modeling, data analysis and testing hypotheses were done through LISREL and SPSS.
Results: The results of the study, which were the same in both populations, indicated that perceived benefits of surfing the net with basic data collection and also basic data collection directly correlates with perceived risk of buying online. Also, perceived benefits of browsing the net directly correlates with overall evaluation of online purchase.
Conclusion: The last generation is not still willing to take the risk and spend money where there is not benefit for that. Almost all Iranians tend to go out of the house for shopping and while they are passing the streets, they try to buy something. Online shopping removes this opportunity. The two above mentioned cases are true for those students of Tehran Azad University, Branch of Science and Technology and Azad University of Yazd who know how to use the Internet and their everyday life is, to some extent, affected by Internet. And about those students who do not have access to internet, or those who despite their access to internet, are not interested in using it, Fortunately, many cities in Iran are equipped by Internet connection in recent years and all these cities are almost big. Besides all mentioned, there are still some problems left for creating infrastructure of online shopping.

Keywords: Customer; subjective factors; online shopping; web-surfing; perceived risks; perceived benefits.

1. INTRODUCTION

Internet demonstrates basically different environment for business and it has a different approach for making and maintaining communication with customers. On the one hand, companies are entered to the international arena by the Internet. This allows them to attract customers quickly and with minimum cost. And the other hand, it reduces more competition for long periods [1]. Using the Internet today, as a very powerful instrument available for competitioners, enables companies to be distinguished from others in a short time. In addition to making competitive advantage, using electronic commerce has some other advantages such as reducing time spent on collecting data and archiving them, providing quick businesses cycle with a significant reduction in time from order to delivery, or from the date of the billing until payment, and finally reducing the costs of rooming for sellers and saving the time and accessing to comprehensive information about the desired products and services, and the possibility of the online comparison of products with each other. According to the predictions, using online shopping ways will overcome the traditional ways of shopping in new future [2].

There is no doubt that using electronic commerce in a tactful way can help traders in improving trade efficiency in all its aspects. Online shopping can be considered as one of the major changes in retails throughout the world [3]. Online shopping can be taken into account in two aspects. On the one hand, there are lots of factors affecting the decision and

tendency of shopping online. Some factors such as low network security, lack of trust in shopping online, websites quality in presenting their products and the related information about them, may cause the customers' lack of tendency to shop online. On the other hand, subjective factors such as individuals' attitudes, habits, and perceptions of the opportunities available for online shoppers, affect individuals' tendency towards online shopping. Thus, consumers' attitudes towards online shopping are the key for online sellers' survival and profitability in today's competitive market [4]. Day by day, maintaining customers for the online businesses gains more importance since customers play a twofold role [5].

In 1990, it was proposed that the traders can have better performance only if they understand the process of customers' decision making when shopping online [6]. Marketing investigators believe there is a hidden decision making process beyond any purchase which should be investigated. The process of making decision about purchase means the stages a buyer goes through to decide which product to buy. There are lots of models in this regard that represent these decision making models, purchase behavior and the ways perceived by consumers [7].

According to what was mentioned above, online shopping can be considered as one of the dominant social behaviors in near future. Therefore, its useful or detrimental potential consequences and its prerequisites and related factors can be investigated. Regarding the development of digital markets and online shopping, this issue can be looked at as a very important and essential issue. Also, investigating customers' decision making process can be considered as a significant and practical issue. Thus, according to the quick growth of electronic commerce, specifically online shopping in Iran, this study tries to identify the customer's decision making process and also recognizing subjective factors affecting the tendency to shop online.

2. THEORETICAL FRAMEWORK AND RESEARCH HYPOTHESES

2.1 Site Quality

Customers today perceive fewer real product differences and show less brand loyalty, and they are becoming more price and quality sensitive in their search for value [8]. Pressed for time, consumers are likely to prefer more online shopping. When consumers purchase some products by online retailing, they can compare the site quality of others. Websites based on consumer needs can generate satisfying shopping experiences and reach their profit objectives [9]. Thus site quality should be improved in the perspective of customers. Hence, site quality can play a key role in online transactions.

E-commerce systems contain characteristics of both machine and human elements subsumed in the computer/human interface. Effective web site design requires an examination of both these factors from user's viewpoint to ensure web sites provide required elements [10]. Guidelines for creating more effective online shopping experiences come from Chen, Clifford, and Wells, who suggest e-taliers must: (1) make users feel comfortable, (2) create sites that are fun to use, (3) entice consumers to spend more time and revisit, and (4) increase the likelihood of a purchase [11].

The different studies of online service quality have been split into two categories according to their focus: online retailing services and website design quality. Zeithaml et al. [12] and Parasuraman, Zeithaml, and Malhotra [13] carried out a study on Internet service quality,

from which they developed the e-SQ scale. This scale is defined as the degree to which a web site facilitates effective and efficient purchasing. On the other hand, Yoo and Donthu [14] have developed the SITEQUAL scale to measure the perceived quality of an online shop. This led to a nine-item scale of four dimensions: ease of use, aesthetic design, processing speed and security. The validation process of scales suggests that perceived quality is a multidimensional construct: web design, customer service, assurance and order management; that perceived quality influences satisfaction; and that satisfaction influences consumer loyalty. Moreover, no differences in these conclusions are observed if the total sample is divided between buyers and information searchers [15].

Chen, Hsu, and Lin thoroughly investigate consumer preference structures that reflect the relative importance and a comprehensive list of attributes and features of shopping website that increase consumer purchase intention. They suggest that consumers who use online shopping websites into three groups based on the attributes they prefer are categorized and consumers with different levels of computer expertise show differing preference structures [16].

Researchers have developed attributes to predict intention to return to the website [17], satisfaction with a website [18], and intention to buy from the website [19]. Szymanski and Hise suggest four factors that are important in e-satisfaction with consumer perceptions of convenience, merchandising (including product offerings and product information), site design, and financial security [20]. Srinivansan, Anderson, and Ponnavolu identify eight factors (customization, contact interactivity, care, community, convenience, cultivation, choice, and character) that potentially affect e-loyalty, and they develop a scale to measure these factors [21]. Kim, Kim, and Kandampully suggest that convenience, web appearance, and entertainment of buying environment characteristics have a direct effect on e-satisfaction but information, communication, and customization do not [22].

2.2 Word-of-Mouth Communication (WoM)

The definition of WoM communication used is “informal communications directed at other consumers about the ownership, usage, or characteristics of particular goods and services and/or their sellers” [23]. The reasons for customers doing WoM communications are because they want to ease a tension that the positive or negative experience produced, to reassure themselves in front of others, to gain support from others who share their opinions, to gain attention or to share the benefits of things enjoyed [24].

2.2.1 Factors influencing consumer’s word-of-mouth communication

Bone [25] argues that WoM can be partially influenced by four factors. These are social tie strength, the presence/absence of an individual taking a committed decision maker role, consumer satisfaction, and perceived novelty. Social ties represent the strength of a consumers’ relationship to the people accompanying them. The author suggests that the weaker the social ties that exist among group members, the more WoM will occur. A second factor is whether one or more group members take on the role of a committed decision maker. It is suggested that whenever there is a committed decision maker in a group, WoM is likely to occur. Third, the author argues that the level of satisfaction and dissatisfaction affect an individual’s mood and increase the amount of WoM. The last factor is perceived novelty that may be a function of the consumer’s lifestyle and experiences, characteristics of the product/service, and/or the manner in which the product/service is presented. A situation that is perceived as novel will receive the consumer’s attention, making WoM more likely.

2.3 Perceived Advantages of Web Surfing

Due to various products and websites, the purchasers are unsure about which website they can buy from. Security is an essential factor in attracting and maintaining customers as users of online shopping services. Generally, security concern in electronic commerce can be divided into the concern about consumers' confirmation or the concern about transaction and information security [10]. The customer should look for information in order to reduce this lack of trust. It is possible for a person to surf the net based on perceived trade benefits of buyers such as saved money, the costs of searching like time and money, and the efforts made on search direction [7]. In their study, Murray et al. stated that web surfing benefits are related to perceived benefits which is expected to be the results of internal searching which includes price reduction, the best model gained, and satisfaction in decision making process. Web surfing benefits are taken from the way a customer perceives mistrust in his selection area, the importance he gives to product classification, and risk inconsistency [26].

If an individual believes that more benefits will increase the search, he will tend more towards search since his perceived benefits are more important than his perceivable costs. It is recommended that perceived benefits from web surfing is the reason behind external searching behavior [7]. Beatty and Smith defined primary data collection as a level of attention and perception, and an attempt towards gaining environmental information about a specific shopping [27]. Buyers usually are doubtful about choosing the website to buy online. They need to seek information to reduce uncertainty. The buyers' willingness to search for information and browse the Internet depends on the extent of dividends they gain from the search, such as saving cost, time and so on. Therefore, the following hypotheses can be proposed:

H_1: The perceived benefits of surf the Web is directly related to collecting basic information.

2.4 Perceived Risk of Online Shopping

The factor which has been determined in different studies as the willingness of customers to shop online is the risk perceived associated with shopping. People's understanding of the risks, whether they are experts or non-experts, varies depending on the nature of online commodities. Taking risk is a subjective matter and refers to what customers understand from the risk [28]. Also Grewal et al. [29] suggested that one of the factors researchers call critical factor is risk perception when shopping; this depends on the buyer's perception about which items are more risky. In some cases, customers do not buy online, though they have a high perceived value to your product. This may be due to the high perceived risk of the desired shopping.

People compare perceived benefits of shopping which is gained through searching with perceived risk of shopping; if the perceived value is greater than the risk, customer takes the risk and gets the perceived value. But if the risk outweighs the value, customers pay more attention to the risk and persuade themselves not to buy online due to its risk. Thus, related information can be gained in order to reduce this risk. Internal search includes a memory scan to find knowledge or experience of past events while searching external information evaluates the sources out of personal knowledge. This may include environmental, retailers and verbal communication with other customers or neutral sources. Therefore the customer will encounter the problem of requiring information for reducing perceived shopping risk.

Murray suggested that searching information for top tangible goods may include the efforts made before buying, or observing others when they shopped online. Searching can be done by the aim of reconfirming that the customer will buy online when there is a vague situation and the customer is highly involved. Customer's uncertainty leads to customer's constant demand for more confirmations [30]. Accordingly, the second hypothesis can be proposed as follows:

H_2: Attempting to collect basic information is directly related to perceived risk of buying online.

Previous studies in marketing which included some issues about risk taking in consumer's behavior followed various conceptual models related to customer's perceived risk. But today, perceived risk is utilized as an explanatory variable in experimental studies of consumer's behavior. The most common definition of perceived risk in consumer behavior defines it based on the consumer perception of uncertainty of purchasing.

Overall evaluation of online shopping is defined as perceived network benefits associated with the required goods or services. However, this evaluation is related to the evaluation of online shopping value. In evaluating online shopping value, different potential benefits can be evaluated such as perceived quality, goods properties, and their desirability. All these benefits are part of the overall evaluation of online shopping done by the customer. Here, all the variables found during this research are evaluated which takes attitudes and beliefs into account. Perceived risks are negatively correlated with overall evaluation of online shopping. The previous study on online shopping, catalogue, and work on perceived risk in markets indicate that customer has some perceptions about intangible costs such as psychological costs in the form of anxiety, confusion, passage of time, and financial and administrative risk; all of them are related to customers' evaluation of purchase or transaction [7].

Dodds et al. [31] defined overall deal evaluation by the notion of net receipts from the purchase of goods or services. Various potential benefits have been examined in this evaluation such as perceived quality and desirability. Korgaonkar and Moschis concluded that perceived risk is negatively correlated with overall deal evaluation gained by past searches [32]. Regarding what was mentioned above, the following hypotheses can be proposed:

H_3: Perceived risk of online purchase is negatively correlated with overall deal evaluation.

2.5 Overall Deal Evaluation

Online customers show different levels of attempt to find information through net surfing. As they learn about available goods, they also process them. One of the key benefits of searching for more information is reducing uncertainty and facilitating customers' overall evaluation of online shopping. However, the information required to make an informed choice is clearly dependent upon monetary size of the purchase. Other effects include previous experiences of customers, learned behavioral patterns, and other social factors such as the effects of reference groups and phone calls. Vendors can increase customers' overall evaluation of online shopping by enhancing customers' perceptions of the quality of goods or benefits related to cost of sales. It is suggested that perceived benefits of searching and external searching attempts are positively correlated with consumers' overall deal evaluatio. Also, consumers put a lot of energy to search and process information (browsing)

about products. One of the key advantages of this net surfing is reduction of customer's uncertainty and easier overall evaluation. However, it should be noticed that the required information depends on lots of factors such as monetary size of the purchase and previous experiences of the customer [7]. Based on this, the following two hypotheses can be expected:

H_4: perceived benefits of net surfing are directly related to overall online deal evaluation.
H_5: collecting basic information is directly related to overall online deal evaluation.

2.6 Willingness to Shop Online

When online shopping is still in the primary stage, the purchase decision making factor utilizes the models that evaluate the willingness to purchase rather than real purchase. Willingness to purchase is defined as the probability that the buyer will purchase the goods. Everything is equal and buyer's willingness to purchase is positively correlated with overall online deal evaluation [28].

The previous value-based models defined overall deal evaluation as perceived net profits with received goods and services. It means that the acquired value perceived from goods are positively affected by the benefits customers believe they can get by receiving and utilizing the goods; this is also negatively affected by the presented money for getting the goods, i.e. the price. Perception of goods value directly influences buyer's willingness towards purchase. Perception of value directly affects customer's willingness to shop online [7]. Therefore, the following hypothesis can be proposed:

H_6: Customer's overall evaluation of online shopping is directly related to willingness to shop online.

Fig. 1, present the relationships between the all research hypothesis as conceptual model.

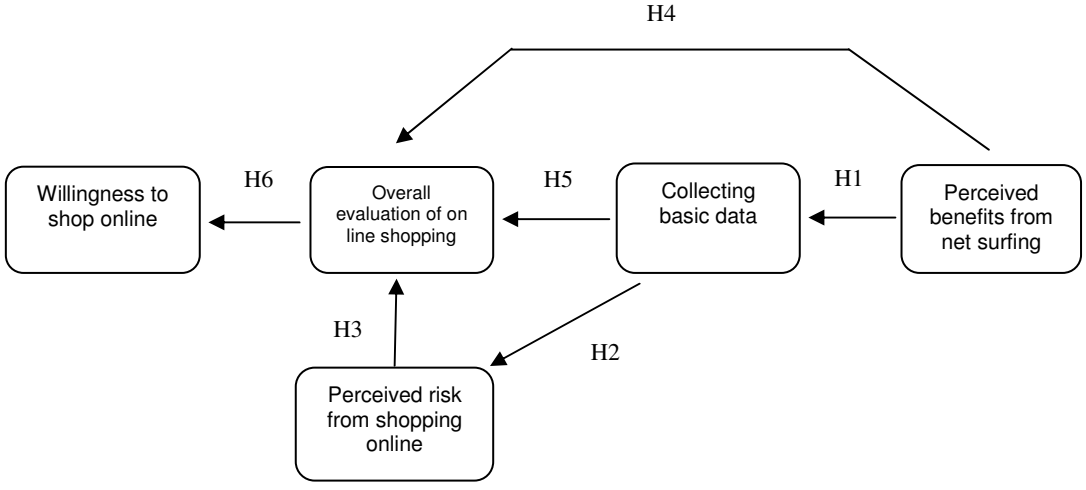

Fig. 1. The research's conceptual model

3. METHODOLOGY

The present study is an applied research. Since the instrument for collecting data was distributed and gathered in statistical population, the current study is considered as survey study. Also, as the relationship between related variables was investigated, it is a correlational study. It is a cross-sectional study conducted in the second half of 2010. The statistical population in this study must have the following features: having necessary information about digital markets and online shopping, accessing the Internet, and having some kind of relationship between the discussed issue and the chosen field of study or occupation. Thus, the area chosen for investigation was Islamic Azad University of Tehran (the Science and Research branch) and Yazd Islamic Azad University. The population under investigation includes all pupils of Tehran Islamic Azad University (Science and Research branch) and the pupils of Yazd Islamic Azad University. It should be mentioned that as the researcher studied at Tehran Islamic Azad University (Science and Research branch) and he was a resident of Yazd, the population was considered as mentioned.

Regarding that members of the study population were divided into faculties of these two universities, stratified random sampling was used here. In studies with specified number of population members and with the possibility of determining the exact estimation of them, the sample size is calculated using Krejcie and Morgan table [33]. In this study, thus, this table was used to calculate the sample size. Accordingly, 300 cases were chosen from Yazd Islamic Azad University, and 374 were chosen from Tehran Islamic Azad University (Science and Research Branch).

Using field method and questionnaire, the data was collected from the desired sample, and it was later analyzed. In order to collect required data, 29 questions were designed in the questionnaire and were analyzed using ranking scale and Likert spectrum. The validity of the questionnaire was examined and confirmed both in terms of content validity and face validity. CVR coefficient and Laveshe chart were used to examine the content validity. In order to determine content validity, related experts should comment on the questions. Therefore with regard to the subject, some marketing professors and managers of websites of online shopping were considered as experts and were provided with the questionnaire e-mail or researcher's attendance. 6 questionnaires were completed by marketing professors and 5 questionnaires were completed by website managers. According to Laveshe chart, for 11 expertise questionnaires, the least acceptable value is 0.59. All the results confirmed the content validity of the questionnaire. In examining face validity, based on 71 questionnaires that were responded in pre-test for reliability, some changes were made in the questions according to the testee's opinion reporting some items as ambiguous, confusing, or meaningless. Cronbach's alpha was used to determine the reliability. Since the least acceptable value of reliability for research questionnaires is 0.7, all values of Cronbach's alpha were confirmed. Tables 1 and 2, show questionnaire complementary information and values of Cronbach's alpha, respectively.

For data analysis, both descriptive and inferential statistics were used. Descriptive statistics were used for complementary analysis of the results and inferential statistics were used to test hypotheses; in this section, parametric statistics were used. In inferential statistics, path analysis technique and structural equation model were used through LISREL. Data was analyzed using SPSS18, and the relationships between the variables and the factors were confirmed through confirmatory factor analysis and structural equations technique using LISREL8.5, which is one of the most current software for implementing such models, in

order to examine the hypotheses with the intention of investigating simultaneous, direct, or indirect relationships between the variables.

Table 1. Complementary information of the questionnaire

Evaluating scale	Evaluating index	Variable	Row
5 Points likert spectrum	3	Collecting basic information	1
5 Points likert spectrum	7	Perceived benefits of web surfing	2
5 Points likert spectrum	9	Overall evaluation of online shopping	3
5 Points likert spectrum	7	Perceived risk for online shopping	4
5 Points likert spectrum	3	Willingness to shop online	5

Table 2. Cronbach's alpha calculated for every variable and the total value

Total value	Willingness to shop online	Perceived risk for online shopping	Overall evaluation of online shopping	Perceived benefits of web surfing	Collecting basic information	Variable
0.89	0.94	0.71	0.83	0.7	0.84	ALPHA

4. RESEARCH FINDINGS

Before raw data are used as input in the software, there are usually changed into covariance or correlation matrix by the relationships between observed variables. In this study, bs index represents perceived benefits from web surfing, es represents collecting basic information, and pr, de, and wb indicate perceived risk of online shopping, overall evaluation of online deal, and willingness to buy respectively. Using exploratory factor analysis, factors for determining the structure of each of the main variables were initially identified, and then using confirmatory factor analysis, the research hypotheses as well as the final model with the application of a set of fitness indices were practiced.

4.1 Examining Model (1): The Sample of 374 Subjects at Islamic Azad University (Science and Research Branch)

4.1.1 Exploratory factor analysis

Exploratory factor analysis was carried out for dependent and independent variables using the rotated matrix or varimax rotation; the results are presented in Table 3.

Table 3. Explanatory factor analysis for the items associated with perceived benefits index of web surfing

Function 2	Function 1	Items associated with perceived benefits index of web surfing
0.403	0.493	BS01
0.184	0.691	BS02
0.051	0.772	BS03
0.237	0.644	BS04
-0.135	0.663	BS05
0.752	-0.019	BS06
0.745	0.154	BS07

As can be seen in the above table, the coefficient of all items related to the perceived benefits index of web surfing with a value greater than 0.4 are classified into two groups (two functions). Table 4 represents the results of explanatory factor analysis for the index of collecting basic information.

Table 4. Explanatory factor analysis for the items related to the index of collecting basic information

Function 1	Items related to the index of collecting basic information
0.841	ES01
0.877	ES02
0.863	ES03

In Table 4, the coefficients of all the items related to the index of collecting basic information with values greater than 0.5 are placed under one function. The results of explanatory factor analysis of the index of perceived risk for online shopping are shown in Table 5.

Table 5. Explanatory factor analysis for the items related to the index of perceived risk for online shopping

Function 2	Function 1	Items related to the index of perceived risk for online shopping
0.825	0.077	PR01
0.470	0.375	PR02
0.361	0.410	PR03
0.733	0.076	PR04
0.266	0.761	PR05
0.029	0.757	PR06
0.094	0.765	PR07

According to Table 5, the coefficients of all items of the index of perceived risk from online shopping with a value greater than 0.4 are classified into two functions. Table 6 represents the results of explanatory factor analysis for the index of overall evaluation of online shopping.

Table 6. Exploratory factor analysis for items related to overall evaluation of online shopping

Function 2	Function 1	Items related to overall evaluation of online shopping
0.794	0.016	DE01
0.273	0.633	DE02
0.727	0.191	DE03
0.494	0.399	DE04
0.224	0.611	DE05
0.254	0.569	DE06
0.382	0.541	DE07
0.398	0.377	DE08
-0.276	0.773	DE09

According to the table above, the coefficients of all items of the index *overall evaluation of online shopping* with a value greater than 0.4 are classified into two functions. Table 7

represents the results of explanatory factor analysis for the willingness to shop online. In this table, the coefficient of all the items of the index willingness to shop online with the value greater than 0.5 are grouped under one function.

Table 7. Explanatory factor analysis for the items related to the index willingness to shop online

Function 1	Items related to the index willingness to shop online
0.883	WB01
0.891	WB02
0.905	WB03

In the forthcoming section, the coefficient and value of t for each question is investigated based on their latent variable. At first, t, standard coefficients, and error rate for each of the variables (questions) was calculated. All variable had a t value greater than 1.96. Also, their coefficient of determination was appropriate, therefore none of the items were excluded from the model and the model was examined using all 29 items.

4.1.2 Confirmatory factor analysis

It was required that before testing hypotheses, the accuracy of the measurement model was assured. In this study, confirmatory factor analysis was conducted using path analysis about the identified factors in exploratory factor analysis. For examining each of the models, the appropriateness and desirable fit of the measurement model must be assured before the structural equations is approved. Then the questions and hypotheses can be tested. To do so, χ^2 and other criteria for the appropriateness of the model's fitness must be investigated. Fig. 2 shows the measurement model in the state if standard estimation. The results of estimation (the bottom of the figure) indicated the appropriateness of the model. According to Lisrel, the value of χ^2 to degree of freedom is 2.84 and this is smaller than 3 which is an appropriate value. The value of this index being low indicates the little difference between conceptual model of the study and observed data. The output and RMSEA (=0.070) for the model also shows that this value is smaller than 0.08, but the following indices did not have proper values: GFI=0.84, AGFI=0.81, NFI=0.72, NNFI=0.78, CFI=0.80, FI=0.80. Thus, the model was reformed a d after some correction stages, Fig. 3 was proposed:

Fig. 3 shows the reformed measurement model in the state of standard estimation. Results from the estimation indicate the appropriateness of the model. According to the Lisrel output, the value of χ^2 divided by df equals 1.85 and this is smaller than 3 which is an appropriate value. Table 8 shows the reported values for each of the indices.

Table 8. Fitness indices

Index	CFI	IFI	NNFI	NFI	AGFI	GFI	RMSEA	χ^2/df	df	χ^2
Reported value	0.90	0.90	0.89	0.82	0.87	0.89	0.048	1.85	348	642.71

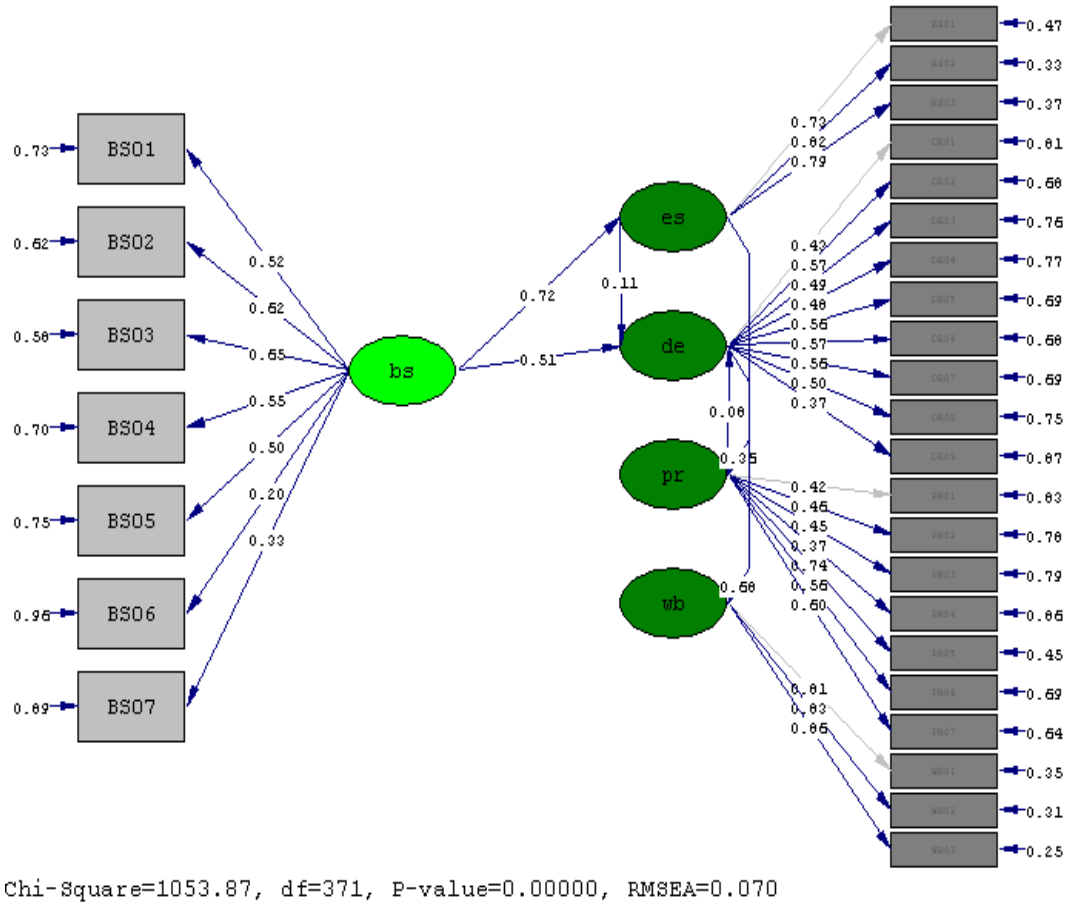

Fig. 2. Confirmatory factor analysis for investigating the effect of independent variables on dependent variables

As represented in Table 8, the model enjoys good fitness based on the above criteria. RMSEA equals 0.048 which is smaller than 0.8 and the indices GFI, AGFI, NFI, NNFI, IFI and CFI are all greater or near 0.90; therefore the model shows a good fitness and is confirmed.

Now using t and standard coefficient, the effect of each of independent variables on dependent variables are examined according to the model.

4.1.3 Evaluation of hypotheses

According to the results of testing hypotheses and comparing absolute value of *t* to the value in the table which is 1.96 based on 95% confidence level. Results of testing hypotheses 1 to 6 are presented in Table 9. Since the absolute value of t is greater than 1.96 (the value in the table) for hypotheses 1, 2, 4 and 6, these hypotheses are confirmed; in hypotheses 3 and 5, the absolute value of t is smaller than 1.96, therefore these two hypotheses are rejected.

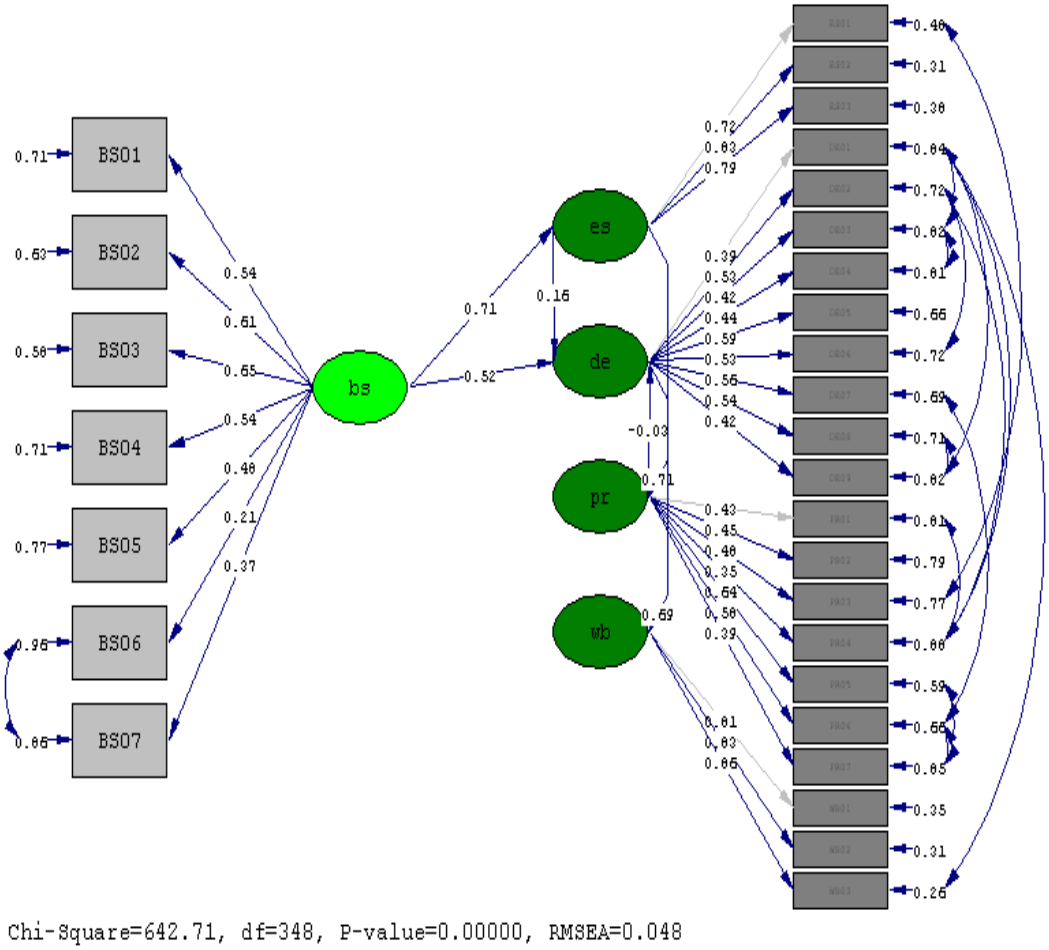

Fig. 3. Confirmatory factor analysis after reforming fig. 2. for investigating the effect of independent variables on dependent variables

Table 9. Results of testing hypotheses 1 to 6

Hypothesis	t	The value in the table	conclusion	Effect size
1	10.39	1.96	effective	0.71
2	4.93	1.96	effective	0.71
3	-0.43	1.96	noteffective	-0.03
4	3.93	1.96	effective	0.52
5	1.59	1.96	noteffective	0.71
6	6.39	1.96	effective	0.71

Diagrams 1 and 2 respectively represent the effect and kind of effect of independent variables on dependent variables.

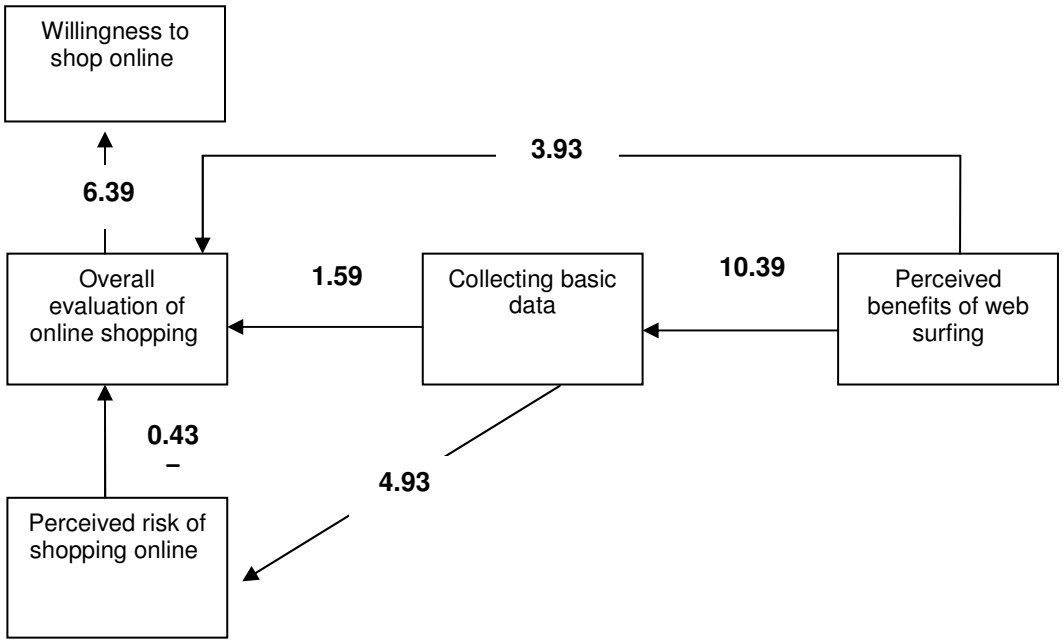

Diagram 1. Examining the effect of independent variables on dependent variables

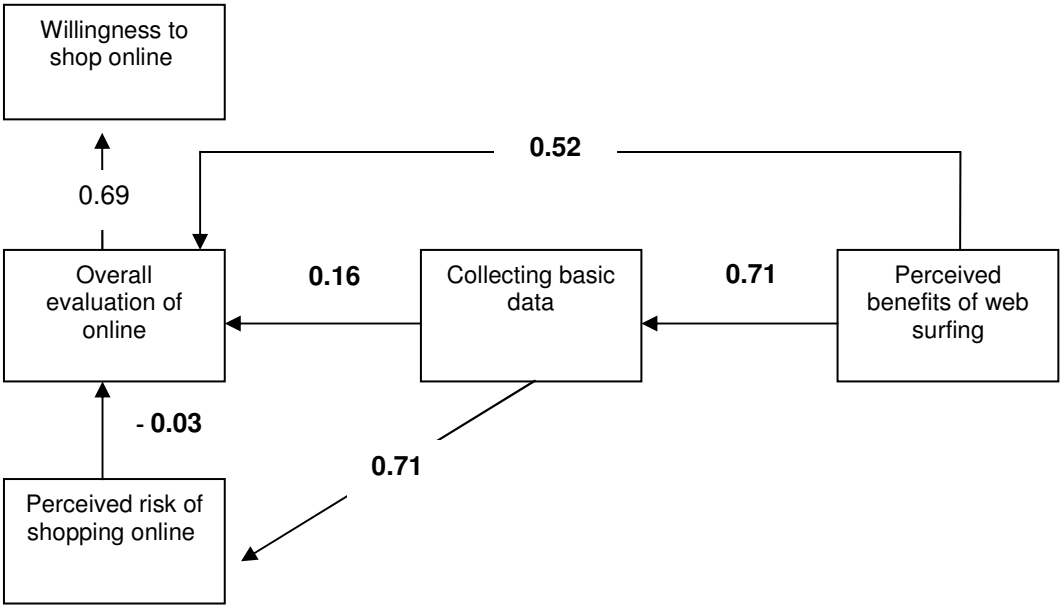

Diagram 2. The effect size of independent variables on dependent variables

4.2 Examining Model 2: The 300 Subjects in the Sample from Yazd Islamic Azad University

4.2.1 Explanatory factor analysis

In the second model also the explanatory factor analysis was carried out for dependent and independent variables using the rotated matrix or varimax rotation; the results are presented below.

As can be seen in Table 10, the coefficients of all the items related to perceived benefits index with values greater than 0.5 are placed under two functions. The results of explanatory factor analysis of the index collecting basic information are shown in Table 11.

Table 10. Explanatory factor analysis for the items associated with perceived benefits index of web surfing

Function 2	Function 1	Items related to the index of perceived benefits of web surfing
0.173	0.551	BS01
-0.009	0.665	BS02
-0.068	0.778	BS03
0.260	0.655	BS04
0.087	0.703	BS05
0.821	0.018	BS06
0.798	0.150	BS07

Table 11. Explanatory factor analysis for the items related to collecting basic information

Function 1	Items related to collecting basic information
0.847	ES01
0.877	ES02
0.830	ES03

In the above table, the coefficients of all the items related to collecting basic information with values greater than 0.5 are placed under one function. The results of explanatory factor analysis of the index perceived risk of shopping online are shown in Table 12.

Table 12. Explanatory factor analysis for the items related to the index of perceived risk for online shopping

Function 1	Items related to perceived risk of shopping online
0.608	PR01
0.592	PR02
0.631	PR03
0.569	PR04
0.799	PR05
0.707	PR06
0.690	PR07

In Table 12, the coefficients of all the items related to the index perceived risk of shopping online with values greater than 0.5 are placed under one function. The results of explanatory factor analysis of the index overall evaluation of shopping online are shown in Table 13.

Table 13. Factor analysis of the index overall evaluation of shopping online

Function 2	Function 1	Items related to the index overall evaluation of shopping online
0.791	0.027	DE01
0.373	0.539	DE02
0.711	0.215	DE03
0.608	0.384	DE04
0.347	0.604	DE05
0.316	0.619	DE06
0.481	0.527	DE07
0.336	0.454	DE08
-0.241	0.809	DE09

By virtue of Table 13, the coefficients of all the items related to the index overall evaluation of shopping online with values greater than 0.4 are placed under two functions. The results of explanatory factor analysis of the index willingness to shop online are presented in Table 14.

Table 14. Explanatory factor analysis of the index willingness to shop online

Function 1	Items related to the index willingness to shop online
0.884	WB01
0.908	WB02
0.909	WB03

By virtue of Table 12, the coefficients of all the items related to the index willingness to shop online with values greater than 0.5 are grouped in one function. Like Fig. 2, at first t, standard coefficient and error value for each of the variables (questions) were calculated. All variables enjoyed a t with a value greater than 1.96. Their coefficients of determination were also appropriate. Therefore none of the items were excluded from the model and the model is examined using all (29) items.

4.2.2 Confirmatory factor analysis

Figs. 4 and 5 respectively represent confirmatory factor analysis and the reformed confirmatory factor analysis of Fig. 4. Fig. 4 shows the measurement in standard estimation state. The results from estimation indicate the appropriateness of the model. According to Lisrel output, χ^2 divided by degree of freedom equals 2.75 and this value is smaller than 3 which is an appropriate value. The output also shows RMSEA =0. 076 for the model; this value is smaller than 0.08, but the following indices do not have appropriate values: GFI=81, AGFI=0.78, NFI=0.72, NNFI=0.78, CFI=0.80 and IFI=0.80. Thus, the model is again reformed and after some corrections, Fig. 5 was obtained.

Fig. 5 shows the reformed measurement model in standard estimation state. The results of estimation indicate the appropriateness of the model. According to Lisrel output, χ^2 divided

by degree of freedom equals 1,68 and this value is smaller than 3 which is an appropriate value. Table 15 represents the reported values for each of these indices.

Table 15. Fitness indices

indices	CFI	IFI	NNFI	NFI	AGFI	GFI	RMSEA	χ^2/df	df	χ^2
reported values	0.92	0.92	0.91	0.83	0.85	0.88	0.048	1.68	344	578.09

As can be seen above, RMSEA equals 0.048 which is smaller than 0.8 and the indices GFI, AGFI, NFI, NNFI, IFI and CFI are all greater to near 0.90. Therefore this model shows a good fitness and is confirmed.

Now using t and standard coefficient, we examine the effects of each independent variables on dependent variables according to the model.

4.2.3 Hypotheses evaluation

According to the results of testing hypotheses and comparing absolute value of *t* to the values presented in the table which is 1.96 based on 95% confidence level, results of testing hypotheses 1 to 6 are presented in Table 16. Like model (1), since the absolute value of *t* is greater than 1.96 for hypotheses 1, 2, 4 and 6, these hypotheses are confirmed; in hypotheses 3 and 5, the absolute value of *t* is smaller than 1.96, therefore these two hypotheses are rejected.

Finally, by comparing model (1) and (2), the results in Table 17 are concluded. As can be seen, in all four states the significant effect in Yazd Islamic Azad University is higher than Tehran Islamic Azad University (Science and Research Branch).

Table 16. Results of testing hypotheses 1 to 6

Hypothesis	t	The value in the table	Conclusion	Effect size
1	9.93	1.96	effective	0.79
2	5.06	1.96	effective	0.79
3	-0.24	1.96	noteffective	-0.03
4	3.43	1.96	effective	0.87
5	-1.30	1.96	noteffective	-0.24
6	6.57	1.96	effective	0.69

Table 17. Comparative results of the effect size in models (1) & (2)

The effect difference	Effect size in Yazd Islamic Azad Uni.	Effect size in Tehran Islamic Azad Uni.	
+0.08	0.79	0.71	bs→es
+0.08	0.79	0.71	es→pr
-	-	-	pr→de
+0.25	0.87	0.52	bs→de
-	-	-	es→de
+0.27	0.69	0.69	de→wb

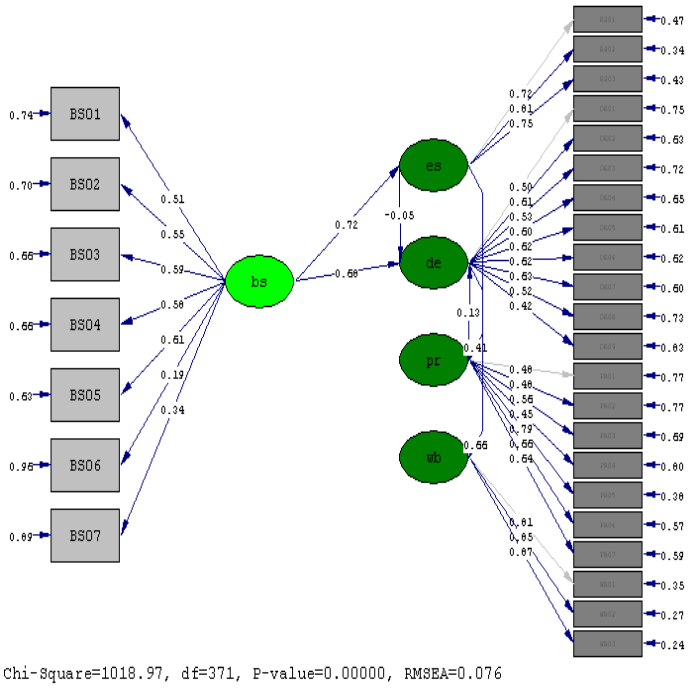

Fig. 4. Confirmatory factor analysis for examining the effect of independent variables on dependent variables

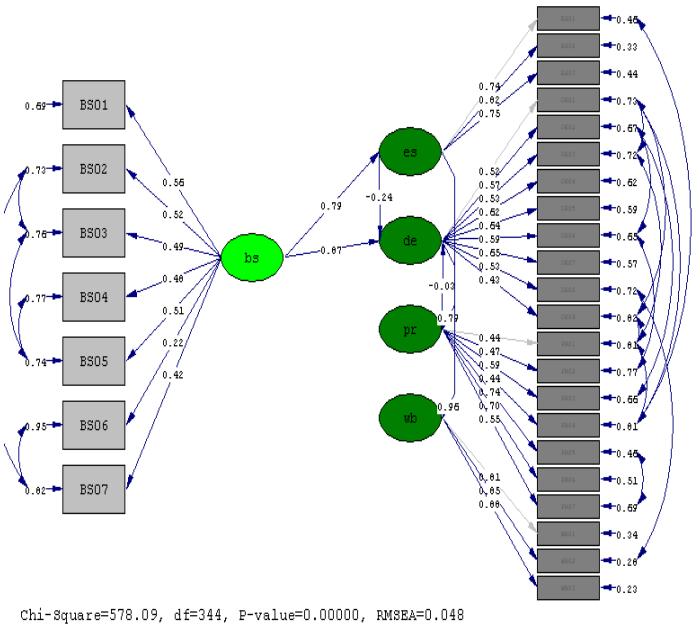

Fig. 5. Confirmatory factor analysis after reforming fig. 4 for examining the effect of independent variables on dependent variables

Diagrams 3 and 4 respectively represent the effect and type of the effect of independent variables on dependent variables.

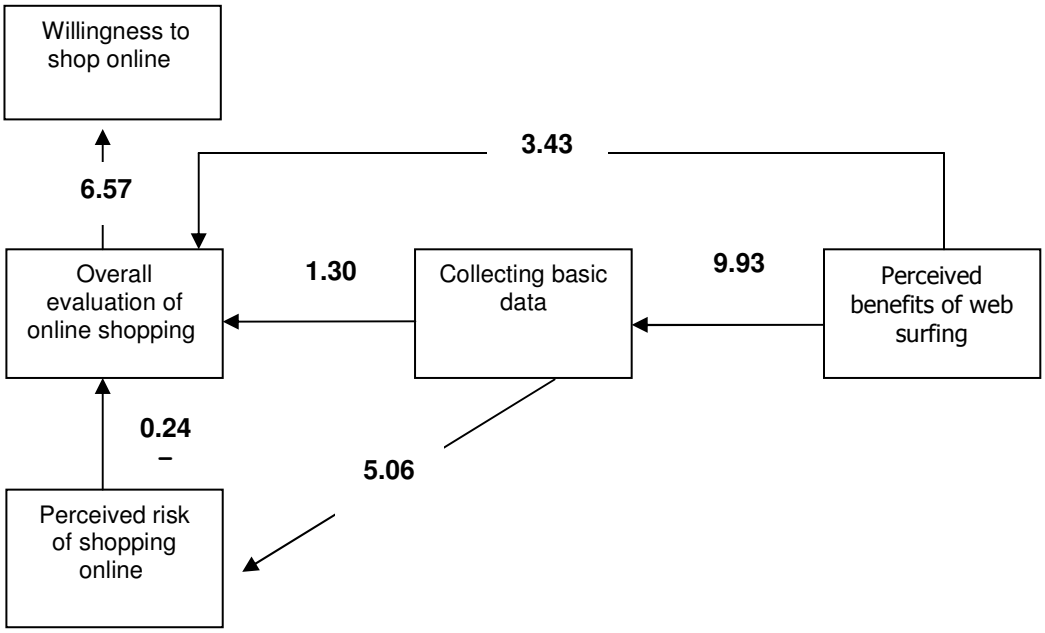

Diagram 3. Examining the effect of independent variables on dependent variables

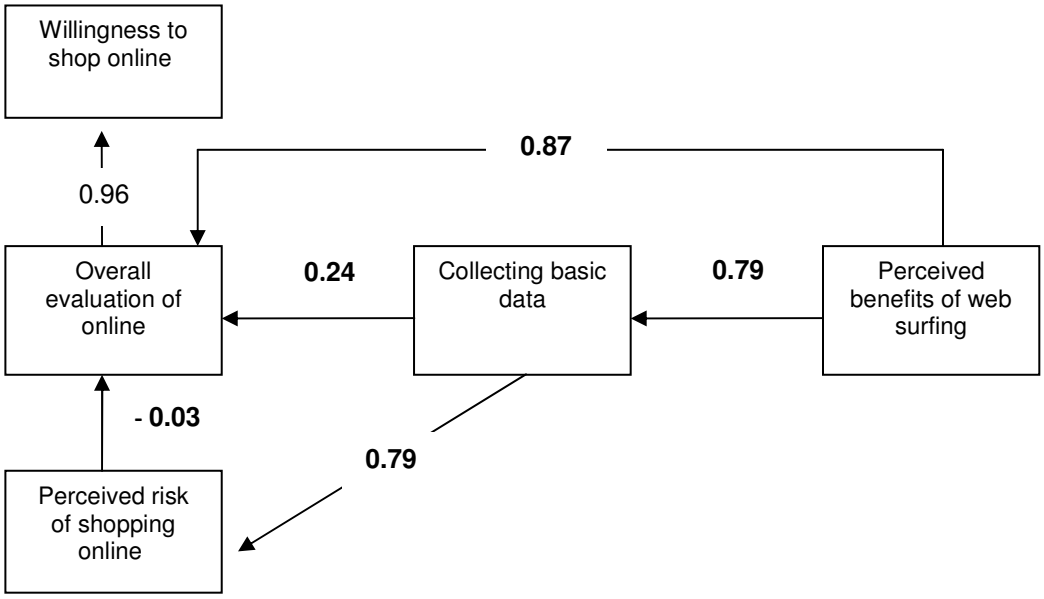

Diagram 4. The effect size of independent variables on dependent variables

5. DISCUSSION

In recent years, the issue of electronic commerce has also been heated in Iran, but why Iran, unlike the other countries, could not succeed in this area? Maybe the most important factor is this regard is "trust". Though this problem has been, to some extent, overcome, the last generation is not still willing to take the risk and spend money where there is not benefit for that. The second issue is the problem of Iranians being "traditionally oriented". Almost all Iranians tend to go out of the house for shopping and while they are passing the streets, they try to buy something. Online shopping removes this opportunity, unless the website is designed in such a professional way that it simulates real markets in order for buyers to spend some time visiting the web pages. However, it cannot be definitely said that in Iran people are going to shop everything online, while in US and many European countries, people are accustomed to shop online and they shop online whatever they need.

The two above mentioned cases are true for those students of Tehran Azad University, Branch of Science and Technology and Azad University of Yazd who know how to use the Internet and their everyday life is, to some extent, affected by Internet. But what can be said about those students who do not have access to internet, or those who despite their access to internet, are not interested in using it? Fortunately, many cities in Iran are equipped by Internet connection in recent years and all these cities are almost big. However, there are lots of people in many cities and villages who are not familiar with using Internet and as they hear Internet, they are reminded of some foreign, bad and youngster's deceiving factor. Thus, how can it be expected to have successful electronic commerce in such a situation? This situation indicates that Education Organization has a very important responsibility to train teenagers at schools about the importance of Internet. Nowadays in Iran, children's effect on parents has raised; thus, children can help parents learn it.

Besides all mentioned above, there are still some problems left for creating infrastructure of online shopping. One of the major problems is online payment. It is true that few private banks provided the situation of paying online, there are some defects about that. These banks' payment gateway does not support SHETAB system yet. SHETAB is the network for transferring banking information. This is the network through which banks are connected to national switching, making it possible to convey the information related to banking interactions. Customers have access to banking services at any time during a day; therefore, their need to go to banks is reduced. Although most people use SHETAB system and only few of them use private banks' system, the central bank of Iran has not yet issued some strong and credible permissions for this matter. Even more important is the software defects that prevents individuals from shopping online. Encountering various errors when having some transactions prevents the owners of these cards to shop online. Also many payment gateways used by online shopping centers are associated with private banks. Despite all these cases, people still follow traditional ways of shopping, i.e. paying for the goods and getting them at the store. This can be rooted in the weaknesses of Iran's banking system. It is hoped that the related authorities try to obviate these problems and let Iran enter the advanced electronic commerce. It is also expected from electronic commerce practitioners to provide the appropriate situation for Iran to enter electronic commerce arena through observing all issues that may lead to customers' satisfaction and trust. They should also accept and practice logical critics and recommendations.

6. CONCLUSION

According to the results obtained from testing hypotheses in the first sample, it was determined that among the students of Tehran Islamic Azad University, Science and Research Branch, perceived benefits of net surfing significantly and directly affected collecting basic information and also collecting basic information significantly and directly affect perceived risk of shopping online. Regarding the significant and direct effect of perceived benefits of net surfing on overall evaluation of shopping online, collecting basic information did not have any significant effect on overall evaluation of online shopping, but overall evaluation of shopping online had a direct and significant effect on willingness to shop online. In the second sample also, perceived benefits of net surfing significantly and directly affected collecting basic information among the students of Yazd Islamic Azad University and also collecting basic information significantly and directly affect perceived risk of shopping online. Perceived risk of shopping online did not have any significant effect on overall evaluation of online shopping. Although perceived benefits of net surfing had a direct and significant effect on overall evaluation of online shopping, collecting basic information had no significant effect on overall evaluation of online shopping. It was ultimately found that overall evaluation of online shopping directly and significantly affects willingness to shop online.

COMPETING INTERESTS

Authors declare that there are no competing interests.

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