

The effect of web interface features on consumer online purchase intentions

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ABSTRACT

Information and communication technology plays essential role for people's day-to-day business activities. People receive most of their knowledge by processing, recording and transferring necessary information through surfing Internet websites. Internet as an essential part of information technology (IT) has grown remarkably. Nowadays, there have been significant amount of efforts in Iran for developing e-commerce. This paper studies the effects of environmental internet features on internet purchase intention. The study divides internet environment into demographic and technologic parts and, for studying each of them, many features are investigated such as internet connection speed, connectivity model, web browser, type of payments, user's income, user's education, user's gender, frequency of online usage per week and users' goal for using internet. Using Logistic regression technique, the study has determined a meaningful effects of income, education, connection type, browser and goal on consumers' behavior.

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1. Introduction

During the past few years, there has been growing trend on Internet usage among business owners, consumers, etc. and significant portion of gross domestic products (GDP) is earned through e-commerce with its various components (Kotler, 2003). E-commerce activities can be categorized and analyzed through different methods such as segmentation tools (Cuadros & Domínguez, 2014). Roberts et al. (2014) defined marketing science as the development and use of quantifiable concepts as well as quantitative tools to understand marketplace behavior and the effect of marketing activity upon it. They reported that, first, the effect of marketing science was perceived to be largest on decisions such as the management of brands, pricing, new products, product portfolios, and customer/market selection, and, second, tools such as segmentation, survey-based choice models, marketing mix models, and pre-test market models maintained the biggest effect on marketing decisions.

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Globalization and increasing market competitiveness have driven firms towards innovativeness in their operations to gain sustainable competitive advantage. Firms now compete more on the basis of services rather than physical products (Verma & Jayasimha, 2014). Many studies propose sequential processes to explain the development and implementation of customer solutions. The solution of development process begins with the analysis of a customer problem defining customer outcomes and planning customer activities and ends with the identification of products and services required to solve the entire problem, before moving on to the integration (implementation) stage. Biggemann et al. (2013) specified five stages including diagnosing needs, designing and producing solutions, organizing the process and resources, managing value conflicts, and implementing solutions to analyze e-commerce success.

Hausman and Siekpe (2009) examined a wide range of design elements to detect appropriate human elements and computer elements, which influence on consumers' online purchase intention. These elements were linked through intermediaries based on the uses and gratifications theory, technology acceptance model, and the concept of flow to describe purchase intentions and intentions to revisit the site. Schlosser et al. (2006) presented an empirical investigation on how to converting web site visitors into buyers. The study presented a survey on how web site investment could increase consumer trusting beliefs and online purchase intentions.

Van der Heijden et al. (2003) discussed how online purchase intentions could motivate consumers to purchase more by building trust perspectives. Miyazaki and Fernandez (2001) discussed consumer perceptions of privacy and security risks for online shopping. They stated that information privacy and security could be blamed as major barriers in the development of consumer-related e-commerce. Young Kim and Kim (2004) formed an investigation on predicting online purchase intentions for clothing products.

Verhagen and Van Dolen (2009) investigated a multi-channel store image perspective to evaluate its effect on online purchase intentions by drawing on a sample of 630 consumer of a large music retail store in the Netherlands. Their results indicated that offline and online store perceptions directly impacted on online purchase intention. Moreover, the findings confirmed that offline store impressions were implemented as references for their online store counterparts.

To study the internet effects on business and different aspects of e-commerce, it is necessary to pay attention on business activities and to determine its executive structures with perception of internet effect on explained e-commerce concept components. Evaluation of internet influencing on e-commerce is important and paying attention to infrastructures and internet web specifications is necessary because marketing efforts are changed according to mentioned conditions and specifications.

2. The proposed study

The purpose of this research is to find internet environmental features, specifications and to analyze relationships among these features with internet buyer behavior in Iran. Present research is from practical kind and descriptive-field method. For needed data collection of recognition and study of internet macro environment effect (demographical and infra structures factors), we have determined environment evaluation parameters. Also, for better recognition of Iranian internet users' population, we have placed a questionnaire on website. For evaluation of environmental considered parameters, we should prove its meaningful relationship with buyer's behavior. For analyzing these relationships, we have used Pearson Chi-Square test at %95 confidence level. After sample gained information sorting and collection, we have analyzed them with descriptive and deductive statistical techniques. Finally, SPSS software has been used for statistical analyzing operation and validity monitoring.

The study wishes to know whether or not different internet features are effective on marketing process. Therefore, it is necessary to define the internet features. Internet like other things are divided into two micro and macro environments and the proposed study of this paper is interested only in macro

environment. There are four factors including technological and natural, legal and political, cultural and social, economic and demographical and we have selected only technological part, only hardware part, and we can categorize these features in two groups of technological and infra structures.

Technical and infrastructural features include internet access speed, access pattern, used explorer and possible payment way. Features related to internet users include users' income, users' education, users' gender, weekly online rate and main goal of internet access. There are different reasons for this parameter selection such as presence of these national parameters at Iran country (Takfa), presence of these parameters among parameters of millennium development program of United Nations and similarity with categorized parameters internet environments at research plan of Economist magazine. It is obvious that these features are different in various countries. According to marketing experts' ideas, marketing environmental factors, economic, technological, political and cultural, play stimulus role on buyers' behavior. The population of this survey includes all Iranian who use Internet, therefore the sample size is calculated as follows,

$$N = Z_{\alpha/2}^2 \frac{p \times q}{e^2}, \quad (1)$$

where N is the sample size, $p = 1 - q$ represents the probability, $z_{\alpha/2}$ is CDF of normal distribution and finally ε is the error term. For our study we assume $p = 0.5$, $z_{\alpha/2} = 1.96$ and $e = 0.05$, the number of sample size is calculated as $N = 384$.

For attaining of above mentioned sample specifications, we designed a questionnaire consists of 12 questions and placed on site of www.surveymshare.com for the response of Iranian users and about 1000 Iranian users filled the questionnaire. Since some of the questions were associated with people who had a background on internet transaction operation, another sample was formed including 301 users with Internet transaction operation background. Cronbach alphas for Access rate, Goal and Purchase numbers are 0.811, 0.754 and 0.794, respectively, which validates the overall questionnaire. In addition, some experts confirmed the overall questionnaire.

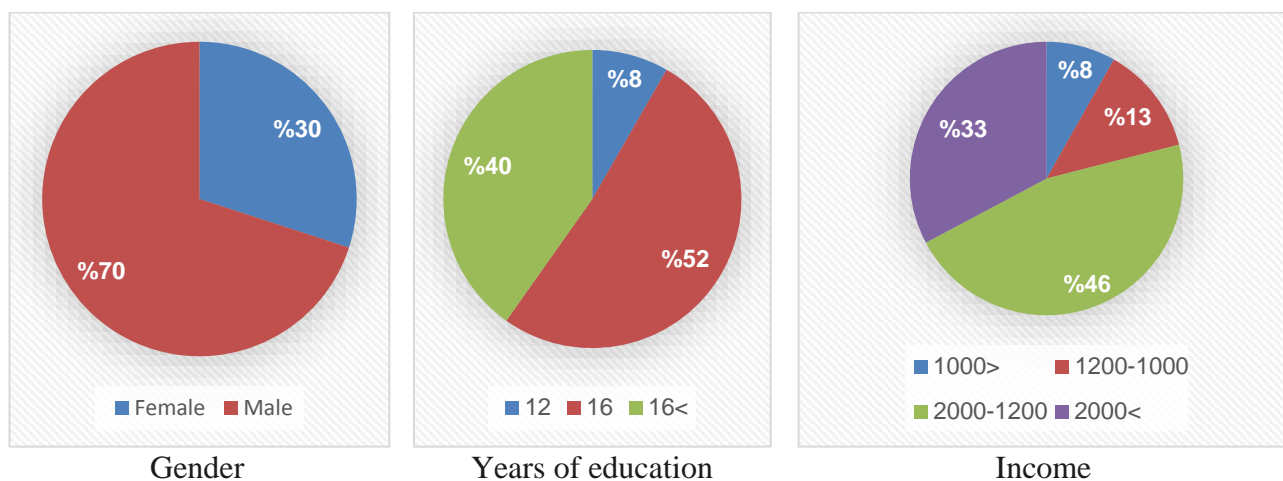


Fig. 1. Personal characteristics of the participants

According to Fig. 1, over 70% of the participants were male, 92% of them had some university education and only 33% of them had more than 2000\$ income. Fig. 2 shows their internet usage. According to Fig. 2, 80% of the users rely on regular internet system, over 58% of them used Internet for more than 4 days per week and finally, nearly 70% of the participants had access with relatively good quality facilities.

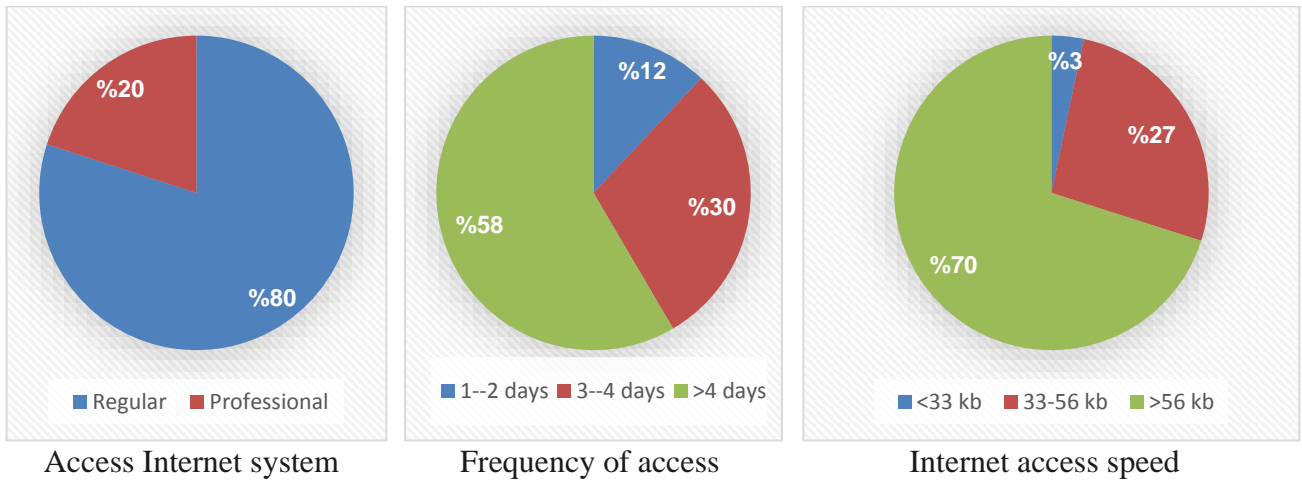


Fig. 2. Characteristics of the participants' Internet usage

Finally, Fig. 3 shows other participants' Internet usage in terms of browser, etc. According to the results of Fig. 3, most participants were interested in using Internet Explorer as their primary method for browsing Internet, 54% were connected to internet only for entertainment, 26% of the participants were interested in reading latest news, over two-third of the participants were interested in bank draft as a method of payment.

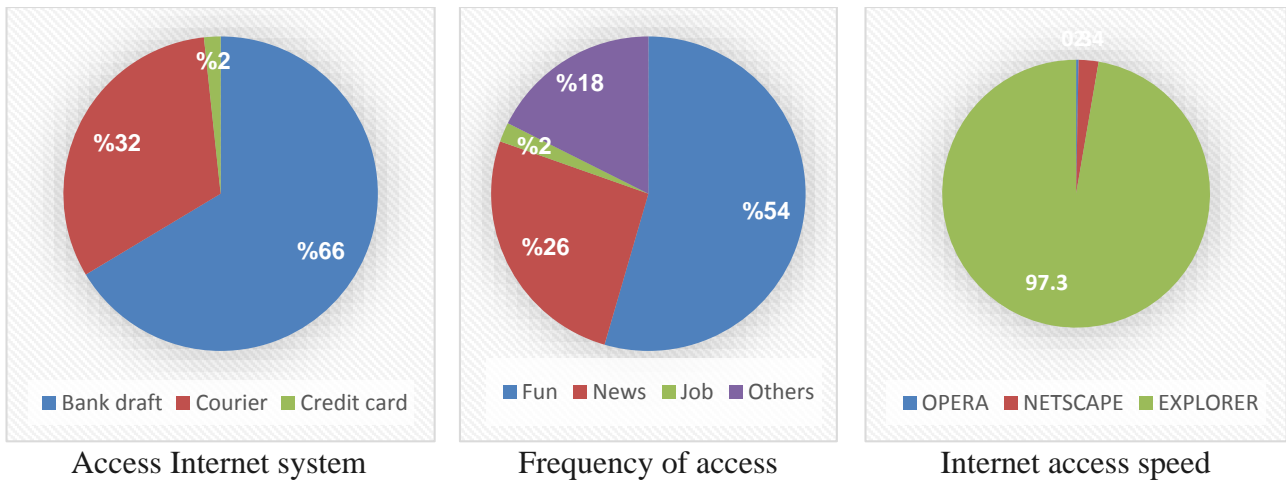


Fig. 3. Characteristics of the participants' Internet usage

The proposed study of this paper uses Chi-Square test to examine the effects of these nine parameters on consumer' behavior.

3. Results

In this section, we present details of our findings on testing the effects of different factors on consumers' behavior. Table 1 summarizes the results of Chi-Square test and Logistic regression function as follows,

$$P = \frac{1}{1 + e^{-(B_0 + B_1 x_1 + B_2 x_2 + \dots + B_k x_p)}} \tag{1}$$

where x_1 to x_p represent independent variables and P represents the likelihood of influencing these factors on consumers' behavior.

Table 1

The summary of Likelihood ratio test for different factors on consumers' behavior

Variable	2-Log Likelihood of the reduced model	Chi-Square	df	Sig.
Intercept	75.327	0.000	2	1.000
Speed	79.324	3.997	2	0.136
Income	95.813	20.486	2	0.000
Education	96.257	20.930	2	0.000
Gender	75.327	0.000	2	1.000
Usage	76.860	1.533	2	0.465
Connection type	100.206	24.829	2	0.000
Browser	83.101	7.774	2	0.021
Goal	86.167	10.840	2	0.004
Payment	76.831	1.540	2	0.471

As we can observe from the results of Table 1, the effects of income, education, connection type, browser and goal on consumers' behavior and the effects of other factors were not confirmed.

4. Conclusion

This paper has presented an empirical investigation to study the effects of different factors influencing on consumers' purchase intention. The proposed study has designed a questionnaire in Likert scale, distributed among some Iranian people who had some online shopping in the past. Using Logistic regression technique, the study has determined a meaningful effects of income, education, connection type, browser and goal on consumers' behavior. The results of this survey are consistent with Bennett (1997), Hausman and Siekpe (2009), Van der Heijden et al. (2003) and Verhagen and Van Dolen (2009).

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