

Consumer Characteristics and Their Effect on Accepting Online Shopping, In The Context of Different Product Types

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Abstract

Online shopping is one of the most popular activities that take place on the internet. Yet the reasons why consumers buy online and what drives them to do so are still unclear. Although it is implied that consumer acceptance of online shopping is affected by the different products (Liang and Huang, 1998) that are being marketed online, not many studies have adopted this view. The purpose of this study is to examine consumers' behaviour when making online purchases in the context of different product types. After a thorough review of the existing literature the factors that were selected to be tested in this study

are Personal Innovativeness of Information Technology (PIIT), Self-efficacy, Perceived security, Privacy, Product involvement and how they affect consumer attitude towards online shopping. Correlation analysis, at first, to determine the relationships among the variables and regression analysis afterwards to verify the extent of the variable interaction were used to test the hypotheses. Based on the aforementioned analyses, results were drawn and compared to the results found by Lian and Lin (2008) in a similar study.

Introduction

The development of the internet has increased the number of online

shopping activities. Still, many internet users avoid purchasing online due to privacy and security concerns. In spite of this, online shopping is continuing to grow as online enterprises become more sophisticated (Lian and Lin, 2008), which results in the dramatic change of how consumers buy products and services (Li, Kuo and Russell, 1999; Shergill and Chen, 2003).

Wu (2003) mentions that approximately half the internet users have bought a product or service through the internet and according to Li and Zhang (2002), online shopping is the third most popular internet activity. Understanding the opportunities this new market has to offer is crucial for any business that wants to participate in it and be competitive.

In the first section a review of the literature is made, involving determinants of consumer characteristics, factors that determine the consumer acceptance of online shopping, product classifications and previous studies.

Theoretical background

The internet is developing rapidly and while its popularity is growing,

more and more users become familiar with it and adopt it as a medium to search for information and shop online (Hou and Rego, 2002; Farag *et al.*, 2007). This section summarises the determinants that construct the consumer behaviour, the factors that determine the user acceptance of online shopping and a brief review of previously conducted researches concerning the aforementioned.

Determinants of consumer behaviour

Consumer behaviour is affected by four categories of factors. The first one is the category of cultural factors, which includes terms such as culture, subculture and social class (Hawkins, Best and Coney, 1995; Armstrong and Kotler, 2003; Peter and Donnelly, 2001, Wu, 2003). The second category refers to social factors and includes reference groups, family, social roles and social status (Armstrong and Kotler, 2003; Wu, 2003). Age and life circle stage, occupation, economic situation, lifestyle, personality and self-concept are included in the third category, the personal factors (Armstrong and Kotler, 2003; Adcock *et al.*, 1995; Kotler and Armstrong, 1996,

Hawkins, Best and Coney, 1995; Wu, 2003). The fourth category consists of psychological factors like motivation, perception, learning, beliefs and attitudes (Kotler and Armstrong, 1996; Armstrong and Kotler, 2003; Wu, 2003).

Factors which determine user acceptance of online shopping

Four factors were found that determine user acceptance of online shopping and are presented in Table

Table

Factors which determine user acceptance of online shopping		
Factor	Variables	References
Consumer characteristics	personality traits	O’Cass and Fenech, 2003; McCrae and Costa, 1997; Li and Zhang, 2002
	self-efficacy	Eastin, 2002; Li and Zhang, 2002; Perea y Monsuwé, Dellaert and de Ruyter, 2004; Bandura, 1997
	demographic profiles	Koufaris, 2002; Park and Jun, 2003; Mutum and Ghazali, 2006; Dholakia and Uusitalo, 2002; Perea y Monsuwé, Dellaert and de Ruyter, 2004
	acceptance of new IT applications	Childers <i>et al.</i> , 2001; Citrin <i>et al.</i> , 2000; O’Cass and Fenech, 2003; Al-Gahtani and King, 1999
Personal perceived values	perceived danger	Eroglu, 1992; Pedersen and Nysveen, 2005; Mathews and Healy, 2007; Cheng and Huang, 2007; Gupta, Su and Walter, 2004; Youn, 2005; Shergill and Chen, 2003; Ratchford, Talukdar and Lee, 2001; Senecal 2000; Sukpanich and Chen 1999; Han, Ocker and Fjermestad, 2001; Li and Zhang, 2002
	perceived convenience	Eastin, 2002; Eastlick and Feinberg, 1994; Lim and Dubinsky, 2004; Wang <i>et al.</i> , 2005; Li, Kuo and Russell, 1999; Wolfinbarger and Gilly, 2001
	perceived web site quality	O’Cass and Fenech, 2003; Shergill and Chen, 2003; Wolfinbarger and Gilly, 2001; Gefen and Straub, 2000
	perceived benefits	Eastin, 2002; Childers <i>et al.</i> , 2001; Bakos, 1991; England <i>et al.</i> , 1999
	security	Belanger, Hiller and Smith, 2002; Liao and Cheung, 2001; Ranganathan and Grandon, 2002; Swaminathan, Lepkowska-White and Rao, 1999; Mummalaneni, 2005; Youn,

Website design		2005; Chou, 2007; Li and Zhang, 2002; Park and Kim, 2003; Kelly and Erickson, 2004; Flavián and Guinalú, 2006
	privacy	Belanger, Hiller and Smith 2002; Ranganathan and Grandon, 2002; Swaminathan, Lepkowska-White and Rao, 1999; Dolnicar and Jordaan, 2006; Birring, 2007; Galanxhi-Janaqi and Fui-Hoon Nah, 2004; Flavián and Guinalú, 2006; Wang, Lee and Wang, 1998
Product		Peterson, Balasubramanian and Bronnenberg, 1997; Perea y Monsuwé, Dellaert and de Ruyter, 2004; Lian and Lin, 2008; Bhatnager, Misra and Rao, 2000; Liao and Cheung, 2001;

Online product classifications

There are several different product classifications. Lowengart and Tractinskky (2001) classified products into high risk and low risk. Verhagen and Boter (2005) thought that products should be categorised into goods and services and also into

hedonic and utilitarian. Based on the special characteristics of the internet, they proposed a classification for online products which consists of three dimensions: cost and frequency of purchasing, value proposition and degree of differentiation

Table

Product classification table		
Dimension 1	Dimension 2	Dimension 3
Low cost, frequently purchased products	tangible and physical goods	High differentiation potential
		Low differentiation potential
	intangible services	High differentiation potential
		Low differentiation potential
High cost, rarely purchased products	tangible and physical goods	High differentiation potential
		Low differentiation potential
	intangible services	High differentiation potential
		Low differentiation potential

Low differentiation
potential

From “Exploring the Implications of the Internet for Consumer Marketing”, by Peterson, Balasubramanian and Bronnenberg (1997).

The first dimension ranges from low cost, frequently purchased goods to high cost, rarely purchased goods. The second dimension involves from tangible and physical goods to intangible services. The third dimension refers to the product degree of differentiation, which allows companies to gain a competitive advantage.

Research model and hypotheses

Based on the above discussion Lian and Lin (2008) proposed an integrated model which involves the four most common factors that define user acceptance of online shopping. The critical consumer characteristic variables include personal innovativeness of information technology (PIIT), Internet self-efficacy, perceived Web security, privacy concerns and product involvement.

Personal innovativeness of information technology (PIIT)

Personal innovativeness was defined as the degree that one adopts new ideas faster than the other

members of a system (Rogers, 1995; Ha and Stoel, 2004; Youn, 2005).

Online shopping is a new technology for Greek consumers because e-commerce is less mature in Greece than it is in other industrialised countries such as the USA. Consumer behaviour towards online shopping is significantly affected by PIIT and so users with high levels of PIIT are more likely to accept online purchasing. The aforementioned is derived from the following hypothesis:

H1: High levels of PIIT have a positive effect on consumer attitude towards online shopping.

Self-efficacy

Internet self-efficacy derives from the social cognitive theory proposed by Bandura (1997). Within this perspective, one's behaviour is constantly under reciprocal influence from cognitive (and other personal factors such as motivation) and environmental influences.

H2: high level of internet self-efficacy positively influences consumer attitude towards online shopping.

Product involvement

Product involvement represents a concern with a product that the consumer brings into a purchase decision (Bei and Widdows, 1999; Pedersen and Nysveen, 2005).

In this study it is expected that high product involvement levels positively influence consumer behaviour towards shopping online and thus, the following hypothesis is stated:

H3: High product involvement levels positively affect consumer attitude towards online shopping.

Methodology

Sample selection

The sample of this study consists of internet users who know how to make an online purchase, possibly have made one or are willing to make one in the future. This study will try to resolve the relationships between consumer characteristics and their attitude towards online shopping in the context of different product types. A total of 232 internet users were selected to complete a questionnaire.

Measurement development

The collection of the necessary data was done with the use of a questionnaire. The questionnaire

consists of three parts: the introduction where the purpose of the research is stated, the personal information section which includes questions about age, education, internet experience and online shopping experience and the third and main part where the questions for measuring the variables are. All 37 questions of the third part of the questionnaire were adopted from the model proposed by Lian and Lin (2008).

Empirical analysis

Instrument validity

Before examining the hypotheses it is essential to examine the validity of the questionnaire that was used for measuring the six factors of the research model. Validity is the degree in which variables measure accurately what they are supposed to measure (Hair *et al.*, 1998) and consists of content validity and construct validity.

Exploratory factor analysis

The exploratory factor analysis shows the number of factors that were empirically created and how the 37 questions employed in this study were distributed in those six factors. For that cause Principal component analysis

and Varimax rotation were used.

The results of this analysis (Table 4) show that the use of exploratory analysis was justified. Kaiser-Meyer-Olkin (KMO) statistics range from 0.687 to 0.895 and Bartlett's Test of Sphericity is significant at 0.00 level. . The analysis showed all items, except for six, had loadings greater than 0.45, which are acceptable considering the sample size (Hair *et al.*, 1998). The six items that were unacceptable were eliminated.

Correlations

Correlation is a statistical method used for measuring or describing the

relationship between two variables. Finding correlations among variables is essential, yet it cannot be described as a relationship between cause and effect. The information given can only be taken as an indicator. Correlation analysis can either be applied independently or as a preliminary stage to regression analysis. Correlation analysis can show which variables have closer relationships with the independent one and should be included in the model

Correlations among the six factors, in the context of four product types are presented in Table.

Table

Correlations					
Items	PIIT	SE	PS	P	PI
A (books)	0.210**	0.109*	0.101*	-0.055	0.594**
A (e-tickets)	0.028**	0.048*	0.130*	-0.059	0.658**
A (TV sets)	0.205**	0.119*	0.167*	-0.075	0.633**
A (subscriptions)	0.308**	0.147*	0.060*	-0.048	0.684**

* Correlation is significant at the 0.05 (2-tailed)

** Correlation is significant at the 0.01 (2-tailed)

From the above it is safe to say that consumers' attitude towards online shopping is affected by

different product types. Moreover the factors that are considered important are different for every

product type.

Regression analysis

As mentioned before, correlation analysis cannot be described as a relationship between cause and effect. To overcome this limitation linear multiple regression was employed to describe the association among the factors and to form a mathematic model.

$$Y_1 = b_{0.1} + b_{1.1} * X_1 + b_{2.1} * X_2 + b_{3.1} * X_3 + b_{4.1} * X_4 + b_{5.1} * X_5$$

$$Y_2 = b_{0.2} + b_{1.2} * X_1 + b_{2.2} * X_2 + b_{3.2} * X_3 + b_{4.2} * X_4 + b_{5.2} * X_5$$

$$Y_3 = b_{0.3} + b_{1.3} * X_1 + b_{2.3} * X_2 + b_{3.3} * X_3 + b_{4.3} * X_4 + b_{5.3} * X_5$$

$$Y_4 = b_{0.4} + b_{1.4} * X_1 + b_{2.4} * X_2 + b_{3.4} * X_3 + b_{4.4} * X_4 + b_{5.4} * X_5$$

Regression results are shown in tables 5 and 6. In table 5 computed F-values and R² are displayed to understand the overall significance of each equation. All of the models

Attitude towards online shopping in the context of different product types is the dependent variable (Y₁ : books, Y₂ : e-tickets, Y₃ : TV sets, Y₄ : subscriptions) and PIIT (X₁), self-efficacy (X₂), perceived security (X₃), privacy and product involvement (X₅) are the independent variables. The mathematical models are displayed below.

yield significant p-values (p < .01) and R² above 40% of the variance in attitudes toward online shopping was explained.

Table

Summary of regression analysis				
	Books	E-tickets	TV sets	Subscriptions
F-value	27.831	30.878	29.900	39.102
p-value	0.000	0.000	0.000	0.000
R²	0.413	0.438	0.430	0.497
Durbin – Watson	1.873	1.986	1.952	1.700

Table

Analysis of the four products				
	Regression coefficient	Standard error of coefficient	Standardised regression coefficient	Sig.
Books				
Constant	-7.253E-17	0.054		
PIIT	0.211	0.060	0.211	0.000
Self-efficacy	-0.058	0.060	-0.058	0.338
Perceived security	0.117	0.580	0.117	0.043

Privacy	0.004	0.570	0.004	0.941
Product involvement	0.611	0.550	0.611	0.000

E-tickets

Constant	-4.196E-17	0.053		
PIIT	0.013	0.058	0.013	0.822
Self-efficacy	0.000	0.059	0.000	0.996
Perceived security	0.062	0.056	0.062	0.270
Privacy	-0.026	0.056	-0.026	0.636
Product involvement	0.651	0.054	0.651	0.000

Tv sets

Constant	2.594E-17	0.054		
PIIT	0.118	0.059	0.118	0.047
Self-efficacy	-0.025	0.059	-0.025	0.671
Perceived security	0.110	0.057	0.110	0.053
Privacy	-0.009	0.056	-0.009	0.873
Product involvement	0.616	0.055	0.616	0.000

Subscriptions

Constant	-3.474E-17	0.050		
PIIT	0.149	0.056	0.149	0.009
Self-efficacy	0.033	0.056	0.033	0.550
Perceived security	0.016	0.053	0.016	0.762
Privacy	-0.052	0.053	-0.052	0.329
Product involvement	0.647	0.052	0.647	0.000

The results of significance testing of the study variables are listed in table 6. The regression results suggest the following: In the context of book buying, perceived security (p = 0.043) and product involvement (p = 0.000) yield coefficients with significant p-value. In the context of e-tickets purchases, only product involvement (p = 0.000) yield

significant p-value for its coefficients. Furthermore, in the context of TV purchases, p-values are significant for PIIT (p = 0.047) and product involvement (p = 0.000). Finally, in the context of subscription purchase, two variables yield significant p-values including PIIT (p = 0.009) and product involvement (p = 0.000).

Conclusions

This study developed a model for determining online shopping attitudes and tested it in the context of different product types. Results demonstrated that the four regression functions were all significant in the context of different products. The results are discussed below.

Low cost, frequently purchased, intangible products are represented by e-tickets. The only factor that seems to have a significant positive effect on consumer buying e-tickets online is product involvement. E-tickets are inexpensive and consumers' interest is focused solely on the purpose that it accomplishes to fulfil. That can also be said for other low cost, frequently purchased, intangible products.

All product categories have in common the product involvement factor and this is probably because consumers are reluctant and buy online only products that they really need and consider important.

From all the above, it is made clear that different product types are responsible for the differentiations of

the results. As a final conclusion it can be said that consumer attitude towards online shopping is affected mainly by the product in question.

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