

CONSUMER CHARACTERISTICS AND THEIR EFFECT ON ACCEPTING ONLINE SHOPPING, IN THE CONTEXT OF DIFFERENT PRODUCT TYPES

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.

1. 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.

Moreover, online consumer attitude is an issue that concerns many researchers (Cheung *et al*, 2003; Verhagen, van den Ham and Creemers, 2003). One of the essential questions in this area is, which are the factors that determine consumers' decision to make a purchase from a certain electronic shop (Lowengart and Tractinsky, 2001). Finding the characteristics of possible buyers can help enterprises to accurately find potential target markets.

Furthermore, Peterson, Balasubramanian and Bronnenberg (1997) support the view that due to the special features of the internet its suitability to market products and services depends on the features of the products and services being marketed. Also, Liang and Huang (1998) showed that different products types affect consumers' acceptance of online shopping.

Although many studies have shown that consumer characteristics are important when it comes to online shopping, the majority of those ignore the effect of different product types. Wanting to overcome this limitation, the purpose of the present study is to examine how different product types affect consumer behaviour.

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. Then, the research model and hypotheses are presented followed by the methodology that was used to conduct the

research. The empirical analysis, which includes the results of the research and discussions, is presented afterwards based on the results.

2. 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.

2.1. 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).

2.2. Factors which determine user acceptance of online shopping

Four factors were found that determine user acceptance of online shopping and are presented in Table 1.

Table 1

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; Wolfenbarger and Gilly, 2001
	perceived web site quality	O’Cass and Fenech, 2003; Shergill and Chen, 2003; Wolfenbarger 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
Website design	security	Belanger, Hiller and Smith, 2002; Liao and Cheung, 2001; Ranganathan and Grandon, 2002; Swaminathan, Lepkowska-White and Rao, 1999; Mummalaneni, 2005; Youn, 2005; Chou, 2007; Li and Zhang, 2002; Park and Kim, 2003; Kelly and Erickson, 2004; Flavián and Guinaliú, 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 Guinaliú, 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;

2.3. Online product classifications

There are several different product classifications. Lowengart and Tractinsky (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.

Yet none of the above classifications refers to marketing products through the internet. Peterson, Balasubramanian and Bronnenberg (1997) insisted that a different categorisation was needed, one that would focus on online products. 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 2).

Table 2

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

2.4. Previous studies

Many studies have been conducted about online consumer behaviour. Most of them have tried to identify factors that affect or contribute to online consumer behaviour. Researchers seem to adopt different points of view and focus on different factors in different ways (Li and Zhang, 2002).

Donthu and Garcia (1999), during their research for consumer characteristics related to online shopping, found that consumers who shop online seek convenience and variety. Moreover, they are more innovative and spontaneous than conventional buyers. Also they are less aware of the brand of the product and tend to have a more positive attitude towards advertising and direct marketing.

On the other hand, Siu and Cheng (2001) found that the most important factors in classifying online shoppers are the economic benefits that derive from online shopping, the product availability, the security dangers, their monthly income, the product technology opinion leaders and their attitude towards technological development.

Ho and Wu (1999) and Li and Zhang (2002) discovered that there are positive relationships between online shopping behaviour and five categories of factors that include e-stores' logistical support, product characteristics, websites' technological characteristics, information characteristics and homepage presentation.

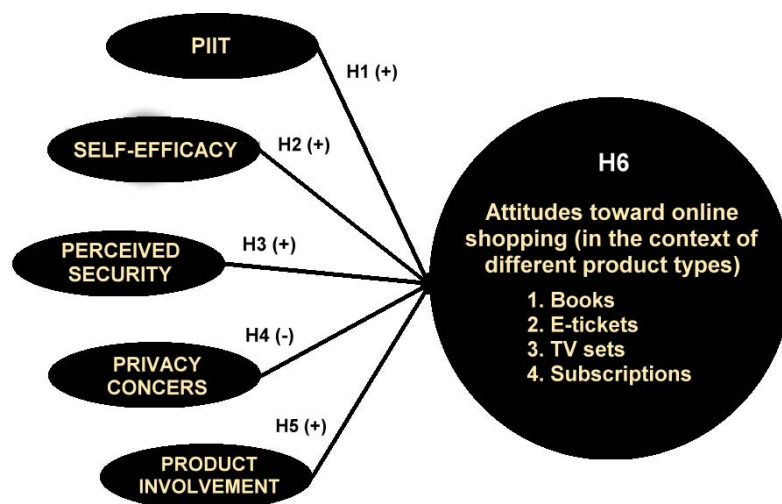
Vellido, Lisboa and Meehan (2000) found nine factors that relate to consumers' opinions on online shopping. Among these factors, consumer risk perception was the one that defined users who had realised an online purchase and those who had not.

Jarvenpaa, Tractinsky and Vitale (2000) examined a model of consumer behaviour towards specific online shops, in which perceptions about reputation and size affect consumer trust of the retailer. The level of trust had a positive relationship to the attitude towards the shop and a negative relationship towards perceived risk. Finally, attitude and risk perception affected consumer intention to buy from a specific store (Jarvenpaa and Tractinsky, 1999; Lowengart and Tractinsky, 2001).

3. 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 (see 2.2.). From these factors derived the five variables that were included in the research model (figure 1). The critical consumer characteristic variables include personal innovativeness of information technology (PIIT), Internet self-efficacy, perceived Web security, privacy concerns and product involvement.

Figure 1: Research model



Lian and Lin (2008)

3.1. 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). Based on this definition Agarwal and Prasad (1998) applied the term of personal innovativeness in the domain of information technology, named it PIIT and defined it as the willingness of a user to experiment on new information technologies.

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.

3.2. 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. Bandura calls this three-way interaction of behaviour, cognitive factors, and environmental situations the "triadic reciprocity" (Bandura, 1989).

Eastin (2002) and O'Cass and Fenech (2003) and Perea y Monsuwé, Dellaert and de Ruyter, (2004) applied that term in the context of internet; they named it internet self-efficacy and defined it as the belief in one's abilities to use the internet effectively. Moreover, Eastin (2002) and O'Cass and Fenech (2003) showed that personal internet self-efficacy has a positive effect on user acceptance of online shopping. According to Perea y Monsuwé, Dellaert and de Ruyter (2004) consumers who have low self-efficacy levels are insecure and feel uncomfortable making purchases over the internet. Thus, the following hypothesis is inferred:

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

3.3. Perceived security

Security is defined as the consumer's belief that his financial data is not visible, will not be stored or used by non-authorised users (Flavián and Guinalú, 2006). Security of online transactions is still the main issue of e-commerce (Elliot and Fowell, 2000; Szymanski and Hise, 2000; Liao and Cheung, 2001; Park and Kim, 2003). According to Kesh, Ramanujan and Nerur (2002), security is one of the most important factors in the success of e-commerce.

Liao and Cheung (2001) found that security concerns affect consumer behaviour. Moreover, security is the factor that often prevents users from shopping online (Li and Zhang, 2002). Furthermore, O'Cass and Fenech (2003) consider that the adoption of online shopping is seriously affected by the user perception of security. From the above derives the following hypothesis:

H3: High levels of personal perceived online security positively affect the consumer attitude towards online shopping.

3.4. Privacy

The term privacy is generally used to describe a group of values that include people's right to the privacy of their own body, private space, privacy of communications and information privacy (Collier, 1995). For the cyberspace it is defined as the user's ability to control the terms by which his personal information is collected and used (Galanxhi-Janaqi and Fui-Hoon Nah, 2004; Flavián and Guinalú, 2006).

Dolnicar and Jordaan's (2006) results show that privacy is a crucial issue for consumers and Pan and Zinkhan (2006) found that privacy issues affect consumers' trust towards the online retailer. In some studies it is found that privacy concern is the main obstacle to the expansion of online shopping (Hoffman, Novak and Peralta, 1999; Hou and Rego, 2002). According to Sheehan and Hoy (1999) as privacy concerns rise, consumers are not willing to provide personal information. Thus the following hypothesis is derived:

H4: High privacy concern levels have a negative effect on consumer attitude towards online shopping.

3.5. 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). Consumer involvement with a product reflects its relevance (Zaichkowsky, 1985), influences consumer motivation to make a purchase decision (Peter and Olson, 1996) and has an impact on his shopping experience and behaviour (Koufaris, 2002).

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:

H5: High product involvement levels positively affect consumer attitude towards online shopping.

3.6. Product categories

Many researchers (Bhatnager, Misra and Rao 2000; Peterson, Balasubramanian, and Bronnenberg 1997; Liao and Cheung, 2001; Lian and Lin, 2008) have insisted on the importance of different product types when being marketed online.

In this study an attempt is made to examine different product types and their influence between consumer characteristics and consumer attitude towards online shopping and from the aforementioned the following hypothesis is derived:

H6: Product categories affect the relationships between consumer characteristics and attitudes toward online shopping.

4. Methodology

4.1. 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.

4.2. 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).

The research was carried out in Greece and all the questions were translated into Greek and then a pilot testing was conducted to avoid any miscomprehensions. All questions were measured in a five point Likert scale. From the distributed questionnaires 28 were unsuitable and thus, excluded. A total of 204 questionnaires were entered in the S.P.S.S. (*Statistical Package for Social Sciences*) statistical programme.

4.3. Online product selection

Due to the special characteristics of the internet, in this study the classification proposed by Peterson, Balasubramanian and Bronnenberg (1997) is used. This model consists of three dimensions: the cost and frequency of purchase, the value proposition and the degree of differentiation. The last dimension is omitted because the Greek market is not mature enough with regard to online shopping and it is even less mature in the high-low differentiation products.

Table 3

Products employed in this research		
	Low cost, frequently purchased products	High cost, rarely purchased products
Tangible products	Books	TV sets
Intangible products	E-tickets	Subscriptions

As a result the four products selected are based on the two dimension classification. Books are used for tangible, low cost, frequently purchased products, e-tickets are used for intangible low cost, frequently purchased products, TV set are used for tangible,

high cost, rarely purchased products and subscriptions are used for intangible high cost, rarely purchased products (Table 3).

5. Empirical analysis

5.1. 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.

5.1.1. Content validity

The purpose of the instrument content validity is to eliminate or to correct those questions that have not accomplished their research goal (Bock and Kim, 2002). Although, the content validity is confirmed from a previous study (Lian and Lin (2008), before the beginning of the present research a discussion with academic staff and a pilot testing was made to avoid any miscomprehensions.

5.1.2. Construct validity

Construct validity was accomplished by using exploratory factor analysis and reliability analysis based on the Cronbach Alpha statistical metre.

5.1.2.1. 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.

5.1.2.2. Reliability analysis

Reliability is one of the most important criteria for evaluating research instruments and refers to the internal consistency of the factors (Chu & Murrmann, 2006). Cronbach's alpha (α) is employed to test instrument reliability. According to Nunnally (1978) any value above 0.7 indicates reliability. The results show that all factors range between 0.811 and 0.915, which surpasses the criteria of reliability (Table 4).

Table 4

Factor and reliability analysis results				
Factor	Item	Variable loading	KMO Bartlett's Test Sig.	Cronbach's alpha
PIIT	PIIT1	0.845	0.791 p=.000	0.839
	PIIT2	0.875		
	PIIT3	0.761		
	PIIT4	0.740		
Self-efficacy	SE1	0.843	0.836 p=.000	0.874
	SE2	0.821		
	SE3	0.825		
	SE4	0.858		
Perceived security	PS1	0.628	0.687 p=.000	0.875
	PS2	0.686		
	PS3	0.788		
Privacy	P1	Eliminated	0.867 p=.000	0.811
	P2	Eliminated		
	P3	0.873		
	P4	0.850		
	P5	0.907		
	P6	Eliminated		
	P7	0.760		
	P8	Eliminated		
	P9	0.836		
	P10	Eliminated		
	P11	0.890		
	P12	Eliminated		
	P13	0.891		
	P14	0.849		
	P15	0.842		
Product involvement	Books	PI1.1	0.895 p=.000	0.915
		PI1.2		
		PI1.3		
		PI1.4		
		PI1.5		
		PI1.6		
	E-tickets	PI2.1	0.865 p=.000	0.886
		PI2.2		
		PI2.3		
		PI2.4		
		PI2.5		
		PI2.6		
	TV sets	PI3.1	0.867 p=.000	0.890
		PI3.2		
		PI3.3		
		PI3.4		
		PI3.5		
		PI3.6		
	Subscriptions	PI4.1	0.892 p=.000	0.903
		PI4.2		
		PI4.3		
		PI4.4		
		PI4.5		
		PI4.6		
Attitude towards online shopping	Books	A1.1	0.815 p=.000	0.898
		A1.2		
		A1.3		
		A1.4		
		A1.5		
	E-tickets	A2.1	0.810 p=.000	0.884
		A2.2		
		A2.3		
		A2.4		
		A2.5		
	TV sets	A3.1	0.850 p=.000	0.899
		A3.2		
		A3.3		
		A3.4		
		A3.5		
	Control	A4.1	0.833 p=.000	0.884

	A4.2	0.823	
	A4.3	0.871	
	A4.4	0.822	
	A4.5	0.848	

5.2. Correlations

Correlation is a statistical method used for measuring or describing the relationship between two variables (Καραγεώργος, 2001). 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 (Δημητριάδη, 2000). 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 (Ζαχαροπούλου, 1995).

Correlations among the six factors, in the context of four product types are presented in Table 5.

Table 5

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.

5.3. Regression analysis

As mentioned before, correlation analysis cannot be described as a relationship between cause and effect (Δημητριάδη, 2000). To overcome this limitation linear multiple regression was employed to describe the association among the factors and to form a mathematic model.

Attitude towards online shopping in the context of different product types is the dependent variable (Y_1 : books, Y_2 : e-tickets, Y_3 : TV sets, Y_4 : subscriptions) and PIIT (X_1), self-efficacy (X_2), perceived security (X_3), privacy and product involvement (X_5) are the independent variables. The mathematical models are displayed below.

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

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

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

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

Regression results are shown in tables 5 and 6. In table 5 computed F-values and R^2 are displayed to understand the overall significance of each equation. All of the models yield significant p-values ($p < .01$) and R^2 above 40% of the variance in attitudes toward online shopping was explained.

Table 5

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 6

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 ($p = 0.000$).

6. 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.

To begin with, in this study books were chosen to represent low cost, frequently purchased, tangible products. The factors that seem to positively affect consumer attitude towards buying books online are PIIT and product involvement. This is probably due to the fact that books are inexpensive and are the first thing that someone buys when he wants to experiment with online shopping.

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.

For high cost, rarely purchased, tangible and intangible products, TV sets and subscriptions were adopted respectively. The factors that have a positive effect on them are the same and are PIIT and product involvement. This is probably because of

the relatively high cost that these products have and the reluctance to buy them from the internet. Users are not willing to experiment with buying high cost products online unless they consider them important.

It is obvious from the above that self-efficacy does not have any effect on consumers' attitudes towards online shopping no matter what the product is. Viewing the answers given by the sample, it is safe to say that all respondents consider themselves able to use the internet effectively (mean = 4.31). The only explanation is that is online shopping is a relatively new technology in Greece and whether they will choose it as a purchase medium has nothing to do with their ability to use it effectively.

Moreover privacy concerns have no effect on consumer attitude towards online shopping. Consumers show a high level of concern about their privacy (mean = 4.40) yet that does not prevent them from buying online. This may be due to geographical reasons. It is possible that the local market does not have the products that consumers need so they are obliged to search for them in the universal market, ignoring their concerns.

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.

Comparing the present study to the one carried out by Lian and Lin (2008) in Taiwan, it is observed that they have similarities but are not identical. The only factor that is shown to have the same positive effect towards online shopping is product involvement. Moreover the only product category that has the same results in both studies is the one of low cost, intangible products that is solely affected by the product involvement factor. In the rest of the results there are variations. This indicates that possible geographical limitations can affect online consumers' attitudes in the context of different product types.

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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