

Full Length Research Paper

Exploring the impact of personality traits on online shopping behavior

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With online shops (e-stores) popping up at a rapid rate in the 21st century, brick-and-mortar stores (physical stores) are no longer the only outlet that attracts consumer spending. Compared with their physical store cousins, e-stores offer more diverse product choices, individualized products and service information, shopping convenience, and privacy. The purpose of this article is mainly to investigate the impacts of personality traits of e-shoppers on their purchase behavior. A structural equation model is developed to test the causal effects between those constructs. The empirical results show that (1) hedonic purchase motivation is positively influenced by three of the big five traits: neuroticism, extraversion, and openness to experience; (2) when consumers have higher degrees of neuroticism, agreeableness, or openness to experience, they tend to be utility-motivated to shop online; (3) utilitarian purchase motivation is a key factor that invokes the search intention in consumers while hedonic motivation is not. The managerial implications for business managers, the limitations of this study, and further research ideas for future researchers are discussed in depth.

Key words: Personality trait, hedonic motivation, utilitarian motivation, search intention.

INTRODUCTION

With online shops (e-stores) popping up at a rapid rate in the 21st century, brick-and-mortar stores (physical stores) are no longer the only outlet that attracts consumer spending. Compared with their physical store cousins, e-stores offer more diverse product choices, individualized products and service information, shopping convenience, and privacy. All this attracts more consumers to shop online (Levy and Weitz, 2009). The United States business-to-consumer (B2C) online marketplace in 2010 will grow to 239.9 billion USD, or an increase of 6.9%, according to a 2009 estimate from eMarket (eMarket, 2009). Likewise, the business-to-consumer online market size in 2008 was 136 billion TWD (4.256 billion USD), 27.8% higher than the year before. These numbers demonstrate that the market for online shopping is huge and

growing (Institute for Information Industry (III), 2009).

A review of past research reveals that scholars put consumers' purchasing motivation roughly in the categories of utilitarian or hedonic (Babin et al., 1994; Wolfenbarger and Gilly, 2001; Childers, et al., 2001). Furthermore, Hirschman and Holbrook (1982) argued that consumers seek fantasies, feelings, and fun in the process of solving a purchasing need or conducting search for goods or services to satisfy this need. Utilitarianism alone was not sufficient to cover the consumer's motive to purchase (Batra and Ahtola, 1991; Babin et al., 1994; Wakefield and Baker, 1998).

The maturing of the environment for online purchasing has attracted academia and industry to study consumer motivation for online shopping. Early research emphasized factors such as convenience, easy access to products and services, low price, product choice-factors mostly concerning utilitarian aspects of shopping (Alba et al., 1997; Wolfenbarger and Gilly, 2001) and factors about online shopping efficiency, including online interactivity, improved usability of product information, characteristics

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comparison among competing products, and reduced time required to search and find the desired goods or services (Alba et al., 1997). On the other hand, more recent researchers have addressed the hedonic aspects of online shopping, which give consumers enjoyment from the online experience (Kim and Shim, 2002; Overby and Lee, 2006).

A person's value and preference are often reflected in his personality traits (Chen, 2008). Personality traits and psychological state influence the formation of a consumer's purchase motivation and its variability with that of other people. Therefore personality traits can to some degree be used to explain a person's behavior and hence, his consumption behavior and purchasing decisions. Researchers in Taiwan have so far rarely studied online shopping from the point of view of personality traits, a void that this study intends to help fill.

LITERATURE REVIEW AND

HYPOTHESES Personality traits

Allport (1937) argued that various traits existed to a varying degree in every individual. The interaction among such traits shaped and gave a person his unique thought process and behavior model (Allport, 1961). Although, scholars differed in their views on personality traits, they all agreed that personality traits are the sum that reflects the blending of a person's behavioral characteristics, thought model, and emotions expression, a sum that can be used to distinguish the person from others. Over the past two decades, the big five personality traits that have been widely adopted by researchers for their studies have been neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness (Costa and McCrae, 1986).

Based on their review of voluminous literature, Costa and McCrae summed up and defined the big five personality traits as follows. Neuroticism is the number and intensity of stimuli needed to spur a person's negative emotions. The more neurotic a person is, the harder it is for the person to control his/her emotions and purchases on a whim, the easier it is for the person to feel inferior complex, to be sensitive to other people's reproaches and ridicules and to be able to handle stress. Extraversion refers to the degree of at ease feeling that a person perceives about his relationship with others. The more extroverted a person is, the more sociable he is, he tends to be more lively, vocal, action-oriented, enthusiastic, and he is more inclined to seek sensory excitements and gratifications. Consequently, he values his external images more, and he is more receptive to new things, ideas, and changes. Openness to experience refers to the number of a person's interests and the extent to which the person pursues those interests. The more open a person is, the more varied his interests are,

the more iconoclastic he is, the higher his inclination to challenge authority, and he is more willing to consider different opinions and viewpoints. Agreeableness is the degree with which a person complies with rules established by others. The more agreeable a person is, the more polite he is, the more people trust him, the more friendly he treats others, and the better people get along with him. This type of people easily maintains friendly relationships with others, believe that all men are born righteous, like to help others, and are considerate. Conscientiousness is the intensity with which a person pursues his goals. The more conscientious a person is, the more he is individualistic, detail-oriented, efficient, responsible, highly organized, and self-controlled (Costa and McCrae, 1992, 1989).

Purchase motivation

Some scholars viewed the mission of purchasing as to obtain goods (Bloch and Richins, 1983). Tauber (1972) defined shopping as a series of processes to procure valuable merchandise. Hirschman and Holbrook (1982) further characterized shopping to include the pursuit of excitement, experiences, aesthetic, emotions, enjoyment, and such hedonic motives for making a purchase. They also compared traditional utilitarian consumption with hedonic consumption. Babin et al. (1994) described the value of purchasing in terms of utilitarian values versus hedonic values. Scholars after Babin et al. (1994) further pushed the study of purchasing into the realm of motivation. This study therefore, will classify purchase motivation into utilitarian and hedonic. Babin et al. (1994) argued that the consumer accomplish a purchase mission with careful deliberation and efficiency. Hence this study contends that utilitarian motivation is a key mission of purchasing, and it is a motivation that inclines to compel the consumer to pursue products or services that are instrumental, functional, and cognitive, a motivation that nudges the consumer to achieve the mission of purchase reasonably and efficiently (Hirschman and Holbrook, 1982; Batra and Ahtola, 1991; Engel et al., 1993). Hoffman and Novak (1996) advocated that utilitarian motivation could specifically explain the consumer makes online purchases deliberately, that is, the consumer weighs product quality, services, and prices, and other practical factors before committing to the purchase. Hedonic motivation contrasts sharply with the practical utilitarian motivation. Many scholars were of the opinion that shopping was more than the boring mission of purchasing or the boring completion of the act of purchasing (Babin et al., 1994) and that the consumer seeks feelings, fantasies, and fun in the process of making a purchase; the hedonic motivation of shopping (Strahilevitz and Myers, 1998). Babin et al. (1994) found out that hedonic values could influence impulsive buying while utilitarian values would not. With the prevalence of

the Internet, scholars argued that hedonic purchase motivation was one of the important factors that drove the consumer to make online purchases (Burke, 1999; Hoffman and Novak, 1996).

Relationships between personality traits and utilitarian motivation and hedonic motivation

People who are more neurotic are more self-conscious and more vulnerable to emotional hurt or inflictions (Costa and McCrae, 1985), and they have stronger negative emotional reactions, keep their word, and tend to display negative emotional responses (Violet et al., 2004). Therefore, this study hypothesizes that people who are more neurotic, to negate the negative emotional reactions, will seek psychological stimuli via price-bidding for merchandise, and they enjoy the gratification of receiving the goods delivered to them.

Furthermore, because of their more marked negative emotional reactions, people who are more neurotic tend to pay more heed to the comparison among their contemporaries. Hence, in the process of consumption, they will assess whether or not their pending purchase will attract attention from other people. They also strive to reduce the negative cognitive reactions of consumption by price-shopping various vendors or buying bargain-priced products. Consequently, this study hypothesizes that more neurotic consumers incline to be utility-motivated and proffers the following hypotheses:

H_{1a}: Neuroticism has a positive correlation with hedonic purchase motivation.

H_{2a}: Neuroticism has a positive correlation with utilitarian purchase motivation.

Extraversion belongs to interpersonal dimension, and it relates closely with the quality of social interactions (Costa and McCrae, 1989). Matzler et al. (2006) found out that extroverted consumers were more inclined towards hedonic consumption, that such consumers had a higher degree of socialization, were more willing to share their experiences with others, that when they were buying things, they were more willing to take other people's suggestions into consideration. Therefore, consumers with a higher degree of extraversion tend to also possess a higher degree of utilitarian and hedonic purchase motivation. Thus,

H_{1b}: Extraversion has a positive correlation with hedonic motivation.

H_{2b}: Extraversion has a positive correlation with utilitarian motivation.

People with a higher degree of agreeableness are more able to form friendly relationships with others (Digman and Inouye, 1986), and more trusting. Put it another way,

less agreeable people are less trusting and more suspecting (Pervin et al., 2004). Consequently, more agreeable consumers are more easily trusting and influenced by the visual and aesthetic effects on shopping websites, and they enjoy more the gratification that arises from the interaction with others while carrying out online purchases. Therefore, consumers possessing a higher degree of agreeableness are easier to have their hedonic purchase motivation invoked. Furthermore, Violet et al. (2004) advocated that agreeable people tended to engage in activities that were beneficial and courteous. Karl et al. (2007) found that consumers with higher degrees of agreeableness tended to, in the process of online shopping, form or learn such things as cognition, information processing, alternative evaluation, etc (Shu-Hui and Kuan-Ping, 2008). This study proposes that consumers who are more agreeable also tend to have utilitarian purchase motivation. Hence,

H_{1c}: Agreeableness has a positive correlation with hedonic motivation.

H_{2c}: Agreeableness has a positive correlation with utilitarian motivation.

People who are more open to experience have more imagination and curiosity, like variability, and are less likely to be prejudiced (Barrick and Mount, 1991; Costa and McCrae, 1985). Furthermore, the more open to experience a person is, the more he is willing to consider various viewpoints and opinions, accept new experiences, and seek out opportunities to learn new things. Therefore, this type of consumers tend to be knowledge-seeking, unsatisfied with the rut of everyday life, and unceasingly comparison shopping on the Internet for the latest and the greatest or the best values. Matzler et al. (2006) pointed out that consumers with more openness to experience showed stronger reaction to emotional stimuli and that it would be easier to induce such consumers to seek out hedonic values and gain gratification via online searching and shopping. Hence, the study put forth

H_{1d}: Openness to experience has a positive correlation with hedonic motivation.

H_{2d}: Openness to experience has a positive correlation with utilitarian motivation.

Consumers with higher degrees of conscientiousness tend to be more organized, cautious, and tenacious (Pervin et al., 2004). This type of people tends to be less sensitive in interpersonal relationships, and so they tend to seek satisfaction of achievements by being conscientious about their work. Consumers with higher degrees of conscientiousness tend to, in the process of online shopping, form or learn such things as cognition, information processing, alternative evaluation, etc. (Karl et al., 2007). For example, this type of consumers, while

shopping online, will utilize their knowledge to evaluate whether products are appropriate for their social standing in order to assess alternative products and make product selections. Therefore, more conscientious consumers tend to be utility- motivated, and not hedonism-motivated. Hence, the study put forth

H_{1e}: Conscientiousness has a negative correlation with hedonic motivation.

H_{2e}: Conscientiousness has a positive correlation with utilitarian motivation.

The relationships between purchase motivations (hedonic and utilitarian) and search intention

Informational search can be put into two categories: goal-directed search and exploratory search (Jamiszewski, 1998) . With goal-directed search, the consumer has made a plan for purchase before conducting the search for, collecting information about, and evaluating the functions and characteristics of goods or services that may meet the requirements (Brucks, 1985). With exploratory search, the consumer has no specific plan or ideas for a purchase. Moe (2003) pointed out that goal-directed search and exploratory search would influence consumers' purchase intention.

A review of literature reveals that hedonic purchase motivation has been widely used in the study of physical stores (Babin and Attaway, 2000) . But with Internet becoming ever more popular, more and more scholars are of the opinion that hedonic purchase motivation is one of the important factors affecting online shopping (Burke, 1999; Hoffman and Novak, 1996). Studies have shown that background music stimulates consumers and sways consumption behavior, and fast- tempo music makes people happier, more cheerful, and more excited (Morris and Boone, 1998). Research has shown that hedonically motivated consumers will browse websites and conduct search before making a purchase. In the process of providing services and answering customers' questions, the ability of web pages to invoke sensory stimulation and excitement on consumers and the ability of web sites to offer a positive visit experience to the consumers are both factors that actively affect the search intention of the consumer (Wofingbarger and Gilly, 2001). Therefore, the paper hypothesize that

H₃: Hedonic motivation has a positive correlation with search intention.

Mathwick et al. (2001) purported that the purchasing behavior, and hence, the online purchasing behavior, of consumers would be influenced by external values such as utility. Thus, it would be necessary to further analyze utilitarian values to identify the hidden values embedded therein and to package various utilitarian values to stimulate purchase — values such as getting more than your

money's worth (Zeithaml, 1988), ease with which the consumer makes a purchasing decision, and saving time (Pui- Lai et al., 2001). Via search engines consumers can look for products and services, do multiple-store comparison shopping, evaluate the prices and quality, and therefore effectively save time and energy spent on shopping (Grewal et al., 2003). Therefore, this study believes that online shopping, given its associated convenience, time savings, bargain values, comparison shopping, and such utilitarian incentives, is instrumental in driving up consumers' search intention. Therefore, the hypothesize that:

H₄: Utilitarian motivation has a positive correlation with search intention.

The relationship between search intention and purchase intention

Purchase intention refers to the probability of a consumer inclining to make a purchase. Higher purchase intention implies higher probability of purchase. Purchase intention is often used as a metric in the prediction of purchasing behavior (Morwitz and Schmittlein, 1992). In physical stores, what salespeople do and the information provided by the stores all influence consumers' purchase intention while in virtual online stores, the attributes of the website and the Q and A provided also influence purchase intention (Wakefield et al., 2004).

Goal-directed and exploratory search can influence consumers' purchase intention (Moe, 2003). Therefore, the promotion activity on web sites, the services provided by online stores, and web page design all influence the intention and willingness of consumers to visit the web site and search, and hence their purchase intention. Thus, this study posits

H₅: Search intention has a positive relationship with purchase intention.

On the basis of the aforementioned literature review and hypotheses inferred, the conceptual model of this study is as shown in Figure 1.

METHODOLOGY

Development of measures

This study includes six parts: personality traits, utilitarian motivation and hedonic motivation, search intention, purchase intention, and demographic data. On personality traits, this study refers to the five-element framework (NEO-PI-R) of Costa and McCrae (1986): neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. There were concerns that the NEO-PI-R scale used metaphorical language-language that had permitted unlimited room for imagination-which hindered the precise definition of the situations under discussion, making the concepts overlapping and entangled (Vassend, 1995). Therefore, this study adopted the

list modified by Tom Buchanan et al. (2005) of metrics for measuring personality traits, which included 40 items on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The utilitarian motivation and hedonic motivation were adapted from the research of Kevin et al. (2003), Mark and Kristy (2003), and Pui-Lai et al. (2007). In all, 21 survey items were placed on a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). On search intention, the study divided the questions into goal-directed and exploratory categories as Janiszewski (1998) did. With goal-directed search, the consumer has already made a specific and concrete purchase plan, and with exploratory search, the consumer has not. From Rong and Feng (2003) and Pui-Lai et al. (2007) the study adapted and placed six items on a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). As for purchase intention-the likelihood that the buyer will purchase the products/services-subjects responded to three items on seven-point Likert scale ranging from 1 (very low) to 7 (very high).

Before the questionnaire was officially handed out to subjects for this study, 109 questionnaires were given to students or adults who had prior experience shopping online in order to test the reliability of the dimensions in the questionnaire. 72 valid responses were received. The test run helped us modify and refine the questionnaire. In general, if Cronbach's coefficient is between 0.5 and 0.7, the scale complies with the reliability requirement. The questionnaire is highly reliable if the coefficient is greater than 0.7 (Cuieford, 1965). On questions about personality traits, those items with a coefficient of less than 0.5 were removed from the questionnaire because the five dimensions for measuring personality traits could vary between different countries. These filters disqualified 10 items from and kept 30 in the questionnaire. Items about other constructs on the questionnaire-utilitarian motivation, hedonic motivation, search intention, and purchase intention- were more mature, and therefore, the filter threshold was raised to 0.7 on the coefficient. Consequently, only 12 items of the original 21 on utilitarian motivation and hedonic motivation remained. The filter did not disqualify any question about search intention and purchase intention, which had six and three items, respectively.

Data collection

All subjects for this study were consumers with online shopping experience in Taiwan. However, there was unavailability of a list of such shoppers in the population as the sample frame forced this research to take a convenience sampling approach, and the questionnaires were given to subjects either face-to-face or delivered online. A total of 734 questionnaires were handed out, and 429 (58.4%) valid responses were received. The sample size was at least five times the number of variables being observed, which met the suggested range of five to ten times (Hair, 1998).

Of the subjects in the sample, 58.5% were female and 41.5% male, 34.7% were between 21 and 25 years of age, 21.9% between 26 and 30, reflecting the fact that online shopping was still dominated by younger groups. And 73.2% of the subjects were college-educated. Students were the largest occupation groups at 39.9 and 20% were in the service industry. Close to half of the subjects (45%) had a monthly income of less than 15,000 TWD (473.30 USD), properly reflecting the dominating, lower-income student subgroup. A majority (56.2%) of the subjects had more than seven years of experience using the Internet. The largest group (39.4%) of the subjects had more than one but less than five years of online shopping experience. The largest group (35.2%) of the subjects had an annual online shopping spending of between 1,001 and 3,000 TWD (31.66 and 94.88 USD) per person. Furthermore, the proportions of the subjects that have made online purchase of clothing and accessories, electronics, and books and magazines were 59.2, 45.9 and 42.4%, respectively.

ANALYSIS AND RESULTS

Reliability and validity

Three methods-exploratory factor analysis (EFA), Cronbach's reliability, and confirmatory factory analysis (CFA)-were used to select and assess the final items that would be used for testing the hypotheses. First, an exploratory factor analysis was performed by using the principal components with varimax rotation because this has been the recommended method for personality measurement. Criteria consistent with those recommended by Hair et al. (1995) and Comrey (1988) led us to a five-factor solution. Specifically, the screening plot and the eigenvalue-greater-than-one criterion both suggested retaining five factors, supporting the prior five-dimensional conceptualization. Using the criterion of .30 or greater as significant (Hair et al. 1995), items that loaded highly on multiple factors, or whose loading was less than .30, were eliminated from further analysis. The application of this criterion left 20 questions on the questionnaire (Table 1). Second, Cronbach's reliability coefficients were calculated for the items of each construct. As illustrated in Tables 1 and 2, all coefficient alpha estimates, ranging from 0.70 to 0.92, were greater than or equal to 0.7, making each construct in compliance with the requirement of internal consistency (Nunnally, 1978).

Then, CFA was applied to detect the unidimensionality of each construct (Anderson and Gerbing, 1988). This unidimensionality check verified the validity and reliability of our nine constructs. PRELIS was used to generate the correlation matrix, and LISREL8.72 maximum-likelihood method was used to produce a completely standardized solution (Jöreskog and Sörbom, 1993). The results are provided in Tables 1 and 2. Average variance extracted (AVE) and composite reliability (r_c) are also provided.

As shown in Tables 1 and 2, the measurement properties of the nine constructs indicated that the factor loadings (lambdas) were high and significant (the t values for factor loading ranged between 9.07 and 45.94), which satisfied the criteria for convergent validity (Simonin, 1999). Content validity was established through a literature review and by experienced researchers and managers. Discriminant validity is given when the shared variance among any two constructs (that is, the square of their intercorrelation) is less than the AVE of each construct (Fornell and Larcker, 1981). As shown in Tables 3 and 4, the AVE of the underlying construct was larger than the shared variance with other constructs. This implied that the nine constructs had exhibited discriminant validity. Fornell and Larcker (1981) also stressed the importance of examining composite reliability and AVE. Bagozzi and Yi (1988) suggested two criteria: composite reliability (r_c) should be greater than or equal to 0.60, and

AVE should be greater than or equal to 0.50. For this study, all nine composite reliability values (r_c) were greater than or equal to 0.69, and all AVE figures were

Table 1. Scale items and measurement properties of personality traits.

Item	Standardized loadings	T value	b
Neuroticism ($\rho_c = 0.88$; AVE = 0.74)^a			
X1 Have frequent mood swings.	0.65	...	0.85
X2 Dislike myself.	0.67	12.11	
X3 Seldom feel blue.	0.68	12.24	
X4 Panic easily.	0.66	11.98	
X5 Am often down in the dumps.	0.85	14.66	
X6 Often feel blue.	0.88	14.89	
Extraversion ($\rho_c = 0.69$; AVE = 0.54)^a			
X7 Am the life of the party.	0.69	...	0.74
X8 Am skilled in handling social situations.	0.70	11.99	
X9 Make friends easily.	0.63	11.01	
X10 Know how to captivate people.	0.69	11.85	
Agreeableness ($\rho_c = 0.86$; AVE = 0.85)^a			
X11 Respect others.	0.53	...	0.70
X12 Insult people.	0.75	9.48	
X13 Get back at others.	0.68	9.13	
X14 Cut others to pieces.	0.67	9.07	
Conscientiousness ($\rho_c = 0.85$; AVE = 0.67)^a			
X15 Am always prepared.	0.84	...	0.81
X16 Make plans and stick to them.	0.83	18.89	
X17 Carry out my plans.	0.80	18.07	
X18 Never put off till tomorrow what you can do today.	0.57	11.88	
Openness to experience ($\rho_c = 0.78$; AVE = 0.69)^a			
X19 I have unlimited creative ideas.	0.88	...	0.72
X20 I have ample imagination.	0.71	9.69	
Goodness-of fit: $\chi^2 = 451.22$ /df = 1.05 PNFI = 0.78 NFI = 0.95 NNFI = 0.95 CFI = 0.95 RFI = 0.92			

^aFor each construct, scale composite reliability (ρ_c) and average variance extracted (AVE) are provided. These are calculated using the formulae provided by Fornell and Larcker (1981) and Bagozzi and Yi (1988). ^b Cronbach's (ρ) means internal consistency. (429)

greater than or equal to 0.54.

Two chi-square tests were significant ($\chi^2_{(429)} = 451.22, p < 0.01$; $\chi^2_{(429)} = 1210.30, p < 0.01$), which has not been surprising, given the large sample size ($n = 429$) (Bentler, 1990). Other fit indices are also shown in Tables 1 and 2. These indices indicate a reasonable level of fitness in favor of these two models (Bagozzi and Yi, 1988).

Structural model and tests of hypotheses

The fit of the structural model

The structural equation model (SEM) was used to estimate the parameters of the structural model shown in Figure 1, and the completely standardized solutions computed by the LISREL 8.72 maximum-likelihood method are reported in Table 5. The structural model specified

Table 2. Scale items and measurement properties of other constructs.

Item	Standardized loadings	T value	b
Hedonic motivation ($R^2=0.93$; AVE=0.77)^a			
X21 I want to achieve cheerfulness via online purchasing.	0.82	...	
X22 I want to feel happiness via online purchasing.	0.84	20.79	
X23 I want to be amazed via online purchasing.	0.84	20.85	0.92
X24 I want to get an enjoyable feeling via online purchasing.	0.90	23.03	
X25 I want to find fun things via online purchasing.	0.73	17.01	
X26 I want to feel exciting via online purchasing.	0.83	20.29	
Utilitarian motivation ($R^2=0.91$; AVE=0.77)^a			
X27 I want to buy the product that I want effectively via online purchasing.	0.72	...	
X28 For me, online purchasing is practical.	0.83	16.96	
X29 I want to be productive via online purchasing.	0.82	16.70	0.89
X30 For me, online purchasing is functional.	0.81	16.45	
X31 For me, online purchasing is necessary.	0.77	15.57	
X32 I want online purchasing to be helpful in buying the product that I want.	0.83	16.81	
Search intention ($R^2=0.94$; AVE=0.78)^a			
X33 I will browse the Internet for information about products and services.	0.82	...	
X34 Before making a purchase from an online store, I will use a search engine to find more information about the product.	0.90	23.50	
X35 I feel that browsing information about products and services is a wonderful thing.	0.84	20.86	
X36 I will get online and acquire more information to ascertain whether or not I should buy a product/service.	0.88	22.73	0.92
X37 I will not buy directly from an online store unless I have had a chance to get online to gather information and seriously compare alternatives.	0.75	17.79	
X38 In the future, I will continue to browse online for information about products and service.	0.85	21.33	
Purchase Intention ($R^2=0.92$; AVE=0.80)^a			
X39 The probability that I will continue to purchase merchandise or services online is (from very low to very high).	0.98	...	
X40 The probability that I will continue to consider buying products or services from online stores is: (from very low to very high).	0.95	45.94	0.89
X41 The likelihood that I will recommend online purchasing of products/services to others is: (from very low to very high).	0.73	20.67	
Goodness-of fit: $\chi^2(429) = 1210.30$ /df = 2.82 PNFI = 0.83 NFI = 0.96 NNFI = 0.96 CFI = 0.96 RFI = 0.95			

For each construct, scale composite reliability (ρ_c) and average variance extracted (AVE) are provided. These are calculated using the formulae provided by Fornell and Larcker (1981) and Bagozzi and Yi (1988). ^b Cronbach's (α) means internal consistency.

Table 3. Fornell/Lacker test for the five constructs of personality traits.

	Neuroticism	Extraversion	Agreeableness	Conscientiousness	Openness to experience
Neuroticism	0.74				
Extraversion	0.152	0.54			
Agreeableness	0.22	0.006	0.85		
Conscientiousness	0.084	0.16	0.078	0.67	
Openness to Experience	0.005	0.336	0.036	0.01	0.69

Average variance extracted on diagonal; the square of their intercorrelation below the diagonal.

Table 4. Fornell/Lacker test for other constructs.

	Hedonic motivation	Utilitarian motivation	Search intention	Purchase intention
Hedonic motivation	0.77			
Utilitarian motivation	0.593	0.77		
Search intention	0.24	0.504	0.78	
Purchase intention	0.348	0.608	0.476	0.8

Notes: Average variance extracted on diagonal; the square of their intercorrelation below the diagonal.

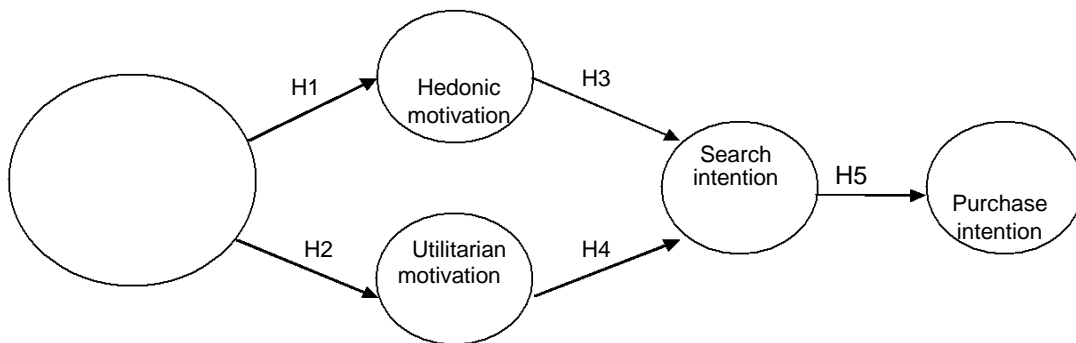


Figure 1. Conceptual model.

personality traits as five sub-constructs (ξ_1 to ξ_5) as the exogenous constructs. Four endogenous constructs were specified as hedonic motivation (η_1), utilitarian motivation (η_2), search intention (η_3), and purchase intention (η_4). As shown in Table 5, all fit measures in the structural model had a reasonable fit to the data ($\chi^2(429)$

$= 2836.98$; $\chi^2/df = 3.75$; CFI = 0.94; GFI = 0.76; AGFI = 0.72; NFI = 0.91; NNFI = 0.93). With the exception of GFI and AGFI which were slightly low, all other indices met the criteria (Bagozzi and Yi, 1988). Furthermore, in analyzing the 184 SEM-based papers written between 1977 and 1994 about marketing and consumers, Baumgartner and Homburg (1996) suggested that some GFIs and AGFIs, even though lower than the literature-suggested levels, were still within the acceptable range if the shortfalls are less than 24 and 48%, respectively (Hung and Yu, 2006). Therefore, even though the GFI and AGFI of this study were lower than the literature-

suggested 0.9, they are still within the reasonable and acceptable range.

Hypotheses tests

Antecedents of motivation

The standardized estimates for the various paths and their associated t-values are provided in Table 5 and Figure 2. As expected, the causal path from neuroticism to hedonic and utilitarian motivation are significant ($\beta_1 = 0.31$, $t = 3.06$; $\beta_2 = 0.23$, $t = 2.55$). Thus, H_{1a} and H_{2a} are supported. As is evident in Table 5, extraversion significantly and positively affects hedonic motivation ($\beta_{12} = 0.30$, $t = 2.34$) but does not significantly affect utilitarian motivation ($\beta_{22} = 0.15$, $t = 1.29$). Thus, H_{1b} is accepted, and H_{2b} is not supported.

Table 5. Structural parameter estimates and goodness-of-fit indices.

Hypotheses		Paths	Estimate ^a
			T value
H1-a	Neuroticism Hedonic motivation	0.31	3.06 *
H1-b	Extraversion Hedonic motivation	¹¹ 0.30	2.34 *
H1-c	Agreeableness Hedonic motivation	¹² 0.16	1.34
H1-d	Conscientiousness Hedonic motivation	¹³ -0.01	-0.16
H1-e	Openness to Experience Hedonic motivation	¹⁴ 0.18	2.3 *
H2-a	Neuroticism Utilitarian motivation	¹⁵ 0.23	2.55 *
H2-b	Extraversion Utilitarian motivation	²¹ 0.15	1.29
H2-c	Agreeableness Utilitarian motivation	²² 0.28	2.53 *
H2-d	Conscientiousness Utilitarian motivation	²³ 0.01	0.17
H2-e	Openness to experience Utilitarian motivation	²⁴ 0.22	2.97 *
H3	Hedonic motivation Search intention	²⁵ -0.02	-0.4
H4	Utilitarian motivation Search intention	³¹ 0.86	13.16 *
H5	Search intention Purchase intention	³² 0.85	16.42 *
		⁴³	

Goodness-of fit:
 $\chi^2(429) = 2836.98$ $\chi^2/df = 3.75$ GFI = 0.76 AGFI = 0.72 RMSEA = 0.08 NFI = 0.91 NNFI = 0.93

^a Standardized estimate.

* Significant at $p < .05$ ($t > 1.96$ or $t < -1.96$).

The path from agreeableness to hedonic motivation is not significant ($t_{13} = 0.16$, $t = 1.34$), but the path to utilitarian motivation is positive and significant. Thus, H2c is supported. Unexpectedly, two paths from conscientiousness to hedonic and utilitarian motivations are not significant ($t_{14} = -0.01$, $t = -0.16$; $t_{24} = 0.01$, $t = 0.17$). Thus, H1d and H2d are not supported. As proposed, openness to experience significantly and positively affects hedonic and motivations ($t_{15} = 0.18$, $t = 2.3$; $t_{25} = 0.22$, $t = 2.97$). Hence, H1e and H2e are both accepted.

Antecedents of search intention

Unexpectedly, hedonic motivation is not positively and significantly related to search intention ($t_{31} = -0.02$, $t = -0.4$), and therefore, H3 is not accepted. Utilitarian motivation has a significant and positive relationship with search intention ($t_{32} = 0.86$, $t = 13.16$), validating H4. Based on our findings, the hedonic motivation of online consumers does not drive their subsequent intention to search for specific products. Conversely, utilitarian motivation does invoke consumers' subsequent intention to search.

Impacts of on purchase intention

As hypothesized, search intention is positively and

significantly related to purchase intention ($t_{43} = 0.85$, $t = 16.42$), supporting H5. This confirms that the greater the degree of purchase intention that online shoppers have, the greater the level of purchase intention to shop in e-stores.

DISCUSSION

Summary of findings

This study used the big five personality traits as its antecedents to explore their impact on hedonic and utilitarian purchase motivation and the effect of purchase intention on subsequent purchases. The data in this research show that hedonic purchase motivation is positively influenced by three of the big five traits: neuroticism, extraversion, and openness to experience. That is to say that people who are more neurotic, more extroverted, or more open to experience incline to seek out fun, excitement, and enjoyment during online shopping. Researchers such as Karl et al. (2007) found that consumers with higher degrees of extraversion and openness to experience would actively engage in activities such as entertainment and games that confer hedonic value-findings that are confirmed by this study.

When consumers have higher degrees of neuroticism, agreeableness, or openness to experience, they tend to be utility-motivated to shop online. That is to say when

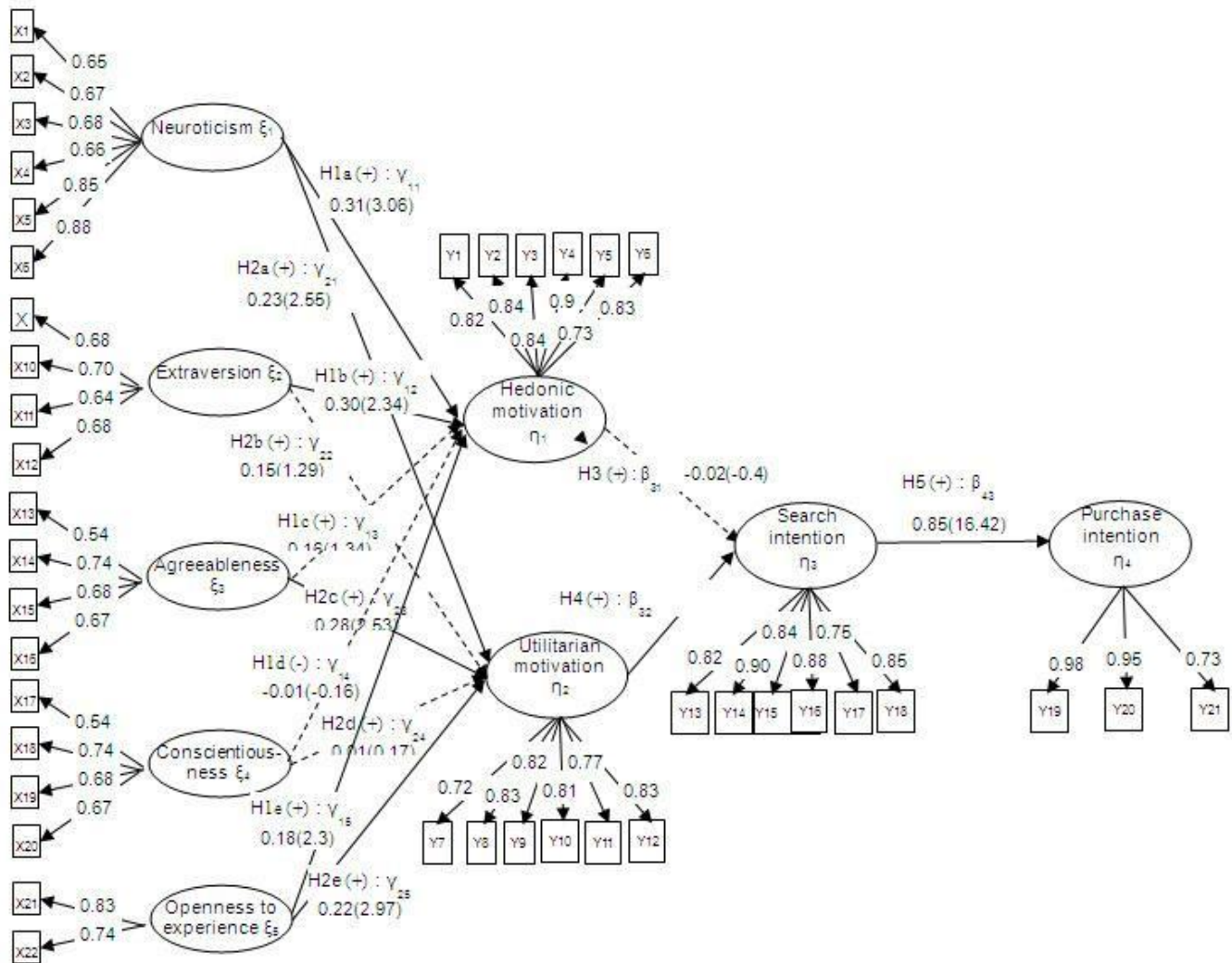


Figure 2. Results of the research mode. Continuous lines are supported paths and dotted lines, unsupported.

consumers are experiencing negative emotions such as frustration, depression, panic, and inferior complex, they are highly agreeable and personable, or they are highly imaginative, curious, and creative, they tend to use online purchasing to satisfy their needs for practicality, productivity, functionality, and for more information about products or services so that they can buy products that meet their expectations at bargain prices. Karl et al. (2007) contended that consumers possessing higher degrees of conscientiousness and agreeableness would tend to conduct activities in search of utilitarian value such as cognition, information processing, alternative evaluation, etc. However, this study cannot bear out the hypothesis that conscientiousness has a positive correlation with utilitarian motivation. The paper suspect that it was because those consumers might have been concerned about online fraud, leaking of personal information or the quality obtained being less than promised, all this causing conscientious consumers to

hold back on their online purchases.

Furthermore, the research shows that consumers' utilitarian purchase motivation - their rational side can directly affect search intention while their hedonic purchase motivation - their emotional side cannot. Therefore, utilitarian purchase motivation is the real driver behind consumers' search and purchase intention. In other words, once the consumer has decided to purchase an item and he wants to carry out such purchase online efficiently and effectively, he actually gets online to search for the desired product, gather product information, and compare competing products in order to decide whether or not to purchase a particular item. On the other hand, going online shopping purely for hedonic reasons such as fun, joy, surprise, and interests does not directly induce the consumer to make the purchase.

Electronic Commerce Times (2008) pointed out that the risk of online purchase, including discrepancies between the expected and actual product or service, leaking of

personal information, and online fraud, led consumers to be more cautious while online shopping, for example, extended searching and comparison, before committing to a purchase. Pui-Lai et al. (2007) believed that the immaturity of online shopping in Taiwan was attributable to the fact that products and services had not been able to reflect consumers' liking, leading them towards purchase from their utilitarian motivation when they did get online and buying. The potential risk in online purchase further confirms the reasonableness of this and to other's studies. The findings of this study also agree with those of Alba et al. (1997), Keeney (1999), Morganosky and Cude (2000) and Blake et al. (2005). It can be inferred from the findings of this study that the motivation and considerations are different for consumers to engage in purchases online and in physical stores. Researchers in the past emphasized that hedonic purchase motivation played out more often in physical stores than online stores because of the perceived risk in the latter (Barnes, 2000).

Managerial implications

No scholar have ever used the big five personality traits as the antecedents of their studies to analyze the impact of the traits on online purchasing. This study filled that void and did exactly that which have never been done before. This study finds that the big five personality traits, save conscientiousness, have varying degrees of influence on hedonic purchase motivation and on utilitarian purchase motivation, and this influence applies to shopping in both physical stores and virtual online stores. This study finds that conscientiousness does not have a significant influence on online purchase, and the paper suspect that it is because of the manifestation of their personality cautiousness, regularity, responsibility, high self-requirement, efficiency, and goal-orientation and the existence of online purchase risk, which make them shun buying on the Internet in favor of buying from physical stores.

Additionally, this study finds that online consumers who are more neurotic, agreeable, and open to experience are more inclined to harbor utilitarian motivation, which drives their subsequent search intention. Therefore, on the strength of this study, it was suggested that online stores make personality traits variables in their market segmentation, targeting consumers who are highly neurotic, agreeable, and open to experience. The study also suggest that such stores devise marketing strategies that are more utilitarian, including bargain prices, convenience, practicality, and availability of product information in order to attract this type of consumers to visit their online stores and conduct online search for products and services.

This study also finds that utilitarian purchase motivation is the key factor that invokes the search intention in

consumers. It means that when the consumer gets online to purchase, he has already made a purchase plan, and he gets online mainly to help him effectively formulate a purchase decision. Therefore, shoppers are more likely to be lured to make purchases if online stores provide them with clear and specific utilitarian information such as product characteristics, prices, promotion activities, and shopping conveniences. For example, an online shopper is looking for a washing machine. When the website of an online store makes it clear to the prospective consumer the store's three-year product warranty and free delivery and installation, the website will more effectively attract the attention of shoppers, get more clicks, and raise the probability of making a sale.

Lastly, this study finds that search intention affects purchase intention, the same as what Jamisaewski (1998) and Pui-Lai et al. (2007) found. This finding means that the more active the consumer engages in the conduct of online search, the higher his purchase intention. Therefore, online stores can consider expanding their exposure on the Internet by beefing up their key word search, creative online advertising, or bulletin board system (BBS) publicity so as to enhance the probability of the stores being clicked on by the consumer. It is the hope of this paper that online merchants and stores can take advantage of the findings of this study.

Limitations and directions for further research

Because of the limited time and budget, the samples in this study were collected by non-probability sampling, and so they may not fully represent the general online consuming public. Therefore, this study employed larger number of samples to compensate for this deficiency. Another potential limitation is that the study mainly focused on online stores in the business-to-consume (B2C) e-commerce model; therefore, the conclusions may not be applicable to other online business models such as business-to-consume (B2C).

As this study finds that the influence of hedonic purchase motivation on search intention to be less than apparent, the study suggest that future researchers may consider trying to find out why that was the case.

Furthermore, other factors may also affect the relationship between purchase motivation and search intention, so future research may wish to expand the conceptual model to include other constructs in order to enhance the applicability of the model and boost the ability to predict/explain the online purchasing behavior of the consumer. It is possible that the involvement of the consumer with the product and the extent of the consumer's Internet usage may have exerted varying degrees of moderating effect on the model. Therefore, the research suggest that future researchers employ multiple-group analyses to make clear the moderating effects of those two variables on online purchasing

behavior. Lastly, this study focused only on business-to-consume (B2C). Future researchers may apply the conceptual model and structure of this study to study other types of electronic commerce such as consumer-to-consumer (C2C) and business-to-business (B2B).

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