

**WEBSITE CHARACTERISTICS EFFECTS ON ONLINE CONSUMER
INTENTIONS AND ONLINE PURCHASES: AN EMPIRICAL LITERATURE
REVIEW**

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ABSTRACT

This review provides characteristics and summarizes results of the empirical literature on website characteristics effects on online intentions and purchases. Search results in 56 studies. Results show that usefulness, attitude towards website, utilitarian and hedonic values are the main drivers of online intentions. Limitations and future research areas are discussed.

INTRODUCTION

Numerous studies have recently been published examining online consumer behavior. Cheung, Chan, and Limayem (2005) identify five major domains explaining online intentions and online purchases: individual/consumer characteristics, product/service characteristics, environmental influences, merchant and intermediary characteristics, and website characteristics. Determinants of online intention and online purchase due to website characteristics are analyzed in this literature review.

Consumers elicit certain values, beliefs, and emotions while shopping online due to website characteristics. These include hedonic and utilitarian value, usefulness, ease of use, enjoyment, flow, pleasure, arousal, and attitude towards website. Their effects on online intentions and online purchase have been exhaustively studied. However, findings are contradictory and there is no study that tries to integrate and summarize the results. It is not well known which website characteristics are strong determinants of online intentions and online purchases based on the accumulated empirical studies conducted so far on topic. Characteristics of these empirical studies in terms of year, country, study design, methodology, sample, and theoretical basis have not been reviewed. Therefore, this review aims:

1. to provide the characteristics of the empirical studies between 1999 and 2011 and to summarize the overall results of stated website characteristics

effects on online intention, actual online purchase, and online impulse purchase,

2. to provide limitations in reviewed literature and areas for future research.
3. to provide new models aiming to fill the gap in the literature and to better explain online consumer behavior.

METHODOLOGY

Scope of the Review

This review focuses on the empirical literature concerning the effects of website characteristics; specifically hedonic and utilitarian value, perceived usefulness, ease of use, enjoyment, flow, pleasure, arousal, and attitude towards website on the online consumer intentions, online actual purchase, and online impulse purchase. Therefore, only empirical articles including one of the independent and dependent factors together are included in the review.

Identification of Studies

Electronic and manual searches were conducted to identify studies to be reviewed. Google Scholar search was used to identify studies in the initial stage with key words online marketing, online purchase intention, online impulse purchase, online purchase, hedonic value, utilitarian value, flow, and technology acceptance model. Electronic databases were used to access the articles found in Google Scholar. Other articles were identified manually. The search yielded 56 studies, which met two criteria: including the variables of interest; and being empirical in nature. Both marketing and information systems journals were included in review. The identified articles were published in journals including *Journal of Business Research*, *Information & Management*, *Journal of Marketing*, *Journal of Retailing and Consumer Services*, *Journal of Interactive Marketing*, *Journal of Retailing*, *Information Systems Research*, *International Journal of Electronic Research*, and *European Journal of Marketing*.

Methodology

The vote counting technique is used to explain and summarize the results. The vote-counting technique summarizes positive, negative, and insignificant effects of each independent variable on dependent variables in a clear and convenient way (Hedges and Olkin, 1980). A critical value is used in the vote-counting technique in order to reject the null

hypothesis of an independent variable with no effect on a dependent variable. Critical value depends on the ratio between the number of studies and the number of positive significant findings (Hedges & Olkin, 1980). This paper applies a hybrid approach as applied by Zou and Stan (1998), whereby the vote-counting technique and narrative approach of literature review are used together.

KEY CHARACTERISTICS OF THE STUDIES

Content analysis is conducted to demonstrate the characteristics of the studies (see Table 1 in Appendix). 56 studies reviewed in this paper are codified in terms of year, country of study, study design, sample type, sample size, website type, methodology, theoretical basis, independent, dependent, and moderating variables. Characteristics of the reviewed studies are explained below by each element.

Year

Since 1999, every year at least one study was published every year until today (see Figure 1 in Appendix). Most of the studies were published between years 2003 and 2009. Specifically, 6 studies were published in 2003, 2004, and 2006, while 8 studies were published in 2005, and 7 studies were published in 2007 and 2009. Only 2 studies were published in 2008.

Country of Study

All studies reviewed were conducted in a single country. The USA was the most researched country. Out of 56 studies, 34 were conducted in the USA. However, the number of studies from Asia was not negligible. 8 studies were conducted in Taiwan, 3 in South Korea, and one in Hong Kong. This demonstrates the growing importance of online marketing in Asia. 7 papers researched particular European countries, 2 researched Canada, and 1 researched Australia.

Study Design

Most studies used surveys or online surveys for data collection. Only 11 of the 56 studies applied experiments. It can be concluded that surveys are the most preferred study design in analyzing the effects of website characteristics on online consumer intentions, actual purchase, and impulse purchase.

Sample Type

Most studies reviewed used undergraduate students samples for convenience. In addition, undergraduate students use Internet heavily, they are technology savvy, and they constitute present and future online shoppers. Besides undergraduate students, 23 studies collected data from general Internet users and online shoppers together. Only one study used customers of an existing website (Koufaris, Kambil, and LaBarbera, 2001).

Sample Size

The sample size of the studies varies from a low of 64 to a high of 2610 participants, while this high sample size is an exception. Most of the studies had a sample size between 150 and 300 participants.

Website Type

Website type indicates whether the study used: 1) an existing website, 2) created a new website for the study, 3) created a new website based on the elements of an existing website or 4) whether the study did not use any website. In the last option, the participants were generally requested to complete a survey based on their last purchase. Most of the studies (28/56) did not use any website. 17 studies used an existing website, 5 used the elements of an existing website to create a new one, and 6 created a new website. It can be argued that this demonstrates the preference of not using a website for the sake of convenience and saving time.

Methodology

Structural equation modeling (SEM) is the most applied methodology. Most of the studies tested models and only 10 studies included neither mediating nor moderating variables. This explains the choice of the researchers to use SEM as an analytical approach. It can be also concluded that model development and model testing is highly common in the online marketing literature studying the effects of website characteristics on online consumer intentions, actual and impulse purchase, and attitude. Regression analysis follows SEM as one of the most used methodologies. The other widely used analytical approach is ANOVA.

Theoretical Basis

16 of the reviewed studies used the Technology Acceptance Model (TAM) as a theoretical basis. 12 studies did not build upon any theoretical basis. Other studies have built

their hypotheses and models upon various other theories and conceptual frameworks. There are 23 other theoretical and conceptual frameworks observed among the studies.

Moderation Effects

Besides the main independent and dependent variables, moderation effects are examined in this review. There were 9 studies which analyzed moderation effects. Moderating variables observed in the studies were demographics, adoption duration, customer tenure (new vs. old), hedonic or utilitarian shopping orientation, product involvement, buying tendency (visual or verbal preference), value perception, online shopping experience, and shopping frequency.

THE EFFECTS OF INDEPENDENT VARIABLES ON ONLINE CONSUMER INTENTIONS, ONLINE PURCHASE, AND ONLINE IMPULSE PURCHASE

The results of this review are summarized based on the vote-counting method (see Table 3 in Appendix for details). None of the independent factors had a negative effect on online consumer intentions and attitude. TAM variables of perceived usefulness, perceived ease of use, and attitude are heavily used in understanding online consumer intentions. Positive significant results of perceived usefulness and attitude towards the website demonstrate the success of TAM in explaining online consumer intentions. Particularly, perceived usefulness and attitude towards website have been used exhaustively to explain purchase intention. Positive attitude towards website is the strongest factor, among all variables, for online purchase intention. Perceived usefulness is another strong factor in explaining online purchase intention and patronage intention. Perceived usefulness is also significant for the creation of positive attitudes towards website.

Effects of perceived ease of use and enjoyment on online intentions are less clear. The ratio of positive results to insignificant results is low. In the studies reviewed, perceived ease of use has been shown to be a positive significant indicator of perceived usefulness and attitude rather than having direct effects on online intentions and actual purchase.

While attitude towards website and perceived usefulness have been known as influential factors in online intentions and purchases, there is lack of consensus regarding the effects of utilitarian value versus hedonic value. It has been argued that online shoppers are very goal-driven and therefore a focus is given to the utilitarian aspects of websites. Some studies have found utilitarian value to be more significant than hedonic value for online intentions and purchases (Overby and Lee, 2006; Bridges and Florsheim, 2008). Other studies state that even

in utilitarian activities, hedonic aspects play an important role and they call for reconsidering the divide of hedonic and utilitarian systems, to a more balanced view towards websites that provide both utilitarian and hedonic value (Novak and Schmidt, 2009). Findings of this review show that, overall, both utilitarian and hedonic values have positive effects on online intentions and purchases. However, the ratio of positive results to the total number of studies is higher for utilitarian value than hedonic value. It should be noted that utilitarian and hedonic values are not studied as exhaustively as TAM variables. Literature needs more studies to analyze effects of perceived utilitarian and hedonic values.

Flow, pleasure and arousal are mostly studied as determinants of impulse purchase intention and patronage intention. The hypotheses of the studies (Mazaheri, Richard, and Laroche, 2010; Koufaris, 2002; Hausman and Siekpe, 2009; Bridges and Florsheim, 2008) are often based on Mehrabian and Russels's (1974) Pleasure-Arousal-Dominance (PAD) framework and flow theory (Csikszentmihalyi 1990; Novak, Hoffman, and Yung 2000). Flow is also a significant determinant of online purchase intention. However, the number of studies including flow (telepresence), pleasure and arousal to explain online intentions, attitude, and actual online purchase is low.

Results demonstrate that there is a lack of studies analyzing actual purchase and impulse purchase. The difficulty of measuring actual purchase in online shopping might explain this phenomenon. There are only a few studies measuring actual purchase.

DISCUSSION, LIMITATIONS, AND FUTURE RESEARCH

In the last decade the literature on the effects of website characteristics on online purchase and intentions progressed significantly in terms of theory, framework, and model development. This review presented over 20 frameworks, models, and theories upon which hypotheses and research questions were based. Although there were some studies without clear theoretical reasoning behind the hypotheses, the majority of the studies use explicit conceptual models. Without a doubt, TAM is the most applied conceptual model. However, apart from TAM, there is no conceptual model that is commonly used as a theoretical basis. Nearly all other conceptual models were used by one single article each. The application of other theoretical frameworks in this present field of online marketing should be further empirically tested in the future.

The conceptualization of the analyzed independent and dependent factors has also advanced in the literature. In general, there is a common agreement on the labeling of

independent and dependent factors. However, there is some confusion between the variables of enjoyment and hedonic value, which are very similar concepts. Therefore, there is a need for a clear distinction between these two variables. Although the conceptualization of the reviewed independent factors is good, there are over 50 other independent factors included in the reviewed studies with various names. For the sake of simplicity and for the scope of this review, these other independent factors are not listed. However, there is a need to conceptualize relevant independent factors.

Another limitation of the reviewed literature is the lack of cross-cultural research. There is no single cross-cultural research. The majority of the studies are conducted in the US and the number of studies conducted in Asian countries has risen in recent years. However, there is a common assumption regarding the homogeneity of online consumer behavior. Cross-cultural research, in which culture is added as a moderating variable, should be conducted in order to assess cultural variance or invariance in online consumer behavior relative to website design effects.

One characteristic of the reviewed literature is the dominance of surveys in study design. In the majority of the studies, participants were requested to complete surveys based on their general online shopping experience or on their last online purchase. This is a big limitation in the literature as there is no vivid memory or experience analyzed regarding the effects of website characteristics. Therefore, computer lab studies should be conducted in which participants are directly exposed to websites to measure vivid online shopping experiences. Only 11 out of 56 studies conducted an experiment. More experiments may be performed to directly measure the effects of specific website design elements individually.

Although there is a growing number of studies measuring online intentions, there are a few studies directly measuring the actual purchase and impulse purchase intention. Reliable measurement techniques should be developed in order to analyze online actual purchase and online impulse purchase. It has been found that consumers are more impulsive in online shopping than offline shopping (Donthu and Garcia, 1999). Therefore, impulse purchase is an important phenomenon in online shopping context and it should be further investigated

Another characteristic of the reviewed literature is the lack of division between information systems (IS) and marketing disciplines. Being a new domain, e-commerce lies between information systems and marketing. This phenomenon is represented in the type of journals where studies are published. These two disciplines nurture each other and help e-

commerce literature to mutually progress. It is commonplace for specialists in marketing and IS to coauthor articles. Hopefully in time, the direction of e-commerce literature will be better shaped and defined by marketing and IS scholars.

Proposed Models for Future Research

Two models are proposed based on the gap found in literature for future research. As stated earlier, there is no study analyzing the moderating role of culture. All of the studies are conducted in a single country and they assume the homogeneity of online consumer behavior worldwide. In addition, the number of studies measuring the effects of hedonic and utilitarian value together is low compared to number of studies measuring TAM variables. Therefore, this paper proposes a model (as depicted in Figure 2) in which the effects of hedonic and utilitarian value on WOM intention, purchase intention, and patronage intention are moderated by culture. Based on previous research (Usunier, Roulin, and Ivens, 2009; Singh, Zhao, and Hu, 2005), in online shopping settings, hedonic value is expected to be more influential for high-context and collectivistic cultures than utilitarian value, and vice versa. Therefore, moderation effect of culture in online impulse purchase context will be investigated with the same website design used as a stimulus for all countries.

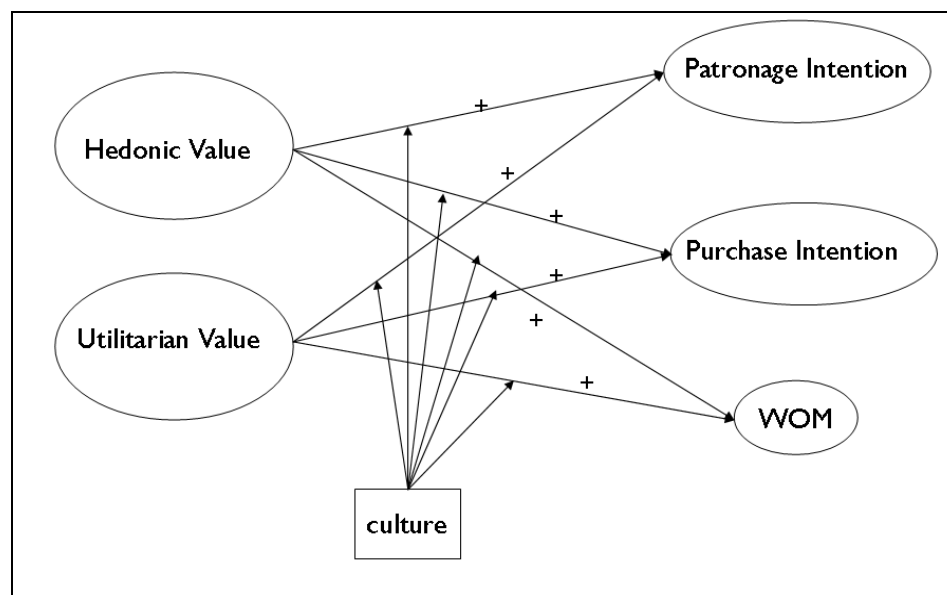


Figure 1: Model of testing cultural moderation

Findings of the review also demonstrate that there is lack of research understanding the drivers of online impulse purchase. It has been found that impulse purchases account for

about 40% of all online expenditures (for reasons such as easy access to products, purchase, use of credit cards, lack of social pressures, ease in delivery, etc) (Verhagen and Dolen, 2009). Therefore, it is necessary to better understand the effects of website characteristics on impulse purchase.

A second model is proposed in which hedonic value and attitude towards website are expected to positively affect online impulse purchase (Parboteeah, Valacich, and Wells, 2009; Koufaris, 2002; Adeelar, Chang, Lancendorfer, Lee, and Morimoto, 2003). In addition, perceived ease of use and utilitarian value are anticipated to indirectly affect online impulse purchase through increasing levels of perceived hedonic value and positive attitudes towards website (Chen and Lee, 2008; van der Heijden, 2004; Barkhi and Wallace, 2007).

Until now, studies have mainly focused on the pleasurable and enjoyable elements of online shopping such as flow, telepresence, pleasure, arousal, and dominance to explain online impulse purchase (Jung & Lim, 2006; Menon and Kahn, 2002; Khalifa and Shen, 2007). However, no study has empirically tested the effects of perceived utilitarian value on online impulse purchase. This is surprising because it has been found that ease of use and utilitarian value elements (anonymity, easy access, selection, ease of payment, price and marketing promotions) also encourage online impulse purchase (Koski, 2004). Therefore, this proposed model investigates the effects of utilitarian value, perceived ease of use, hedonic value, and website attitude together on online impulse purchase.

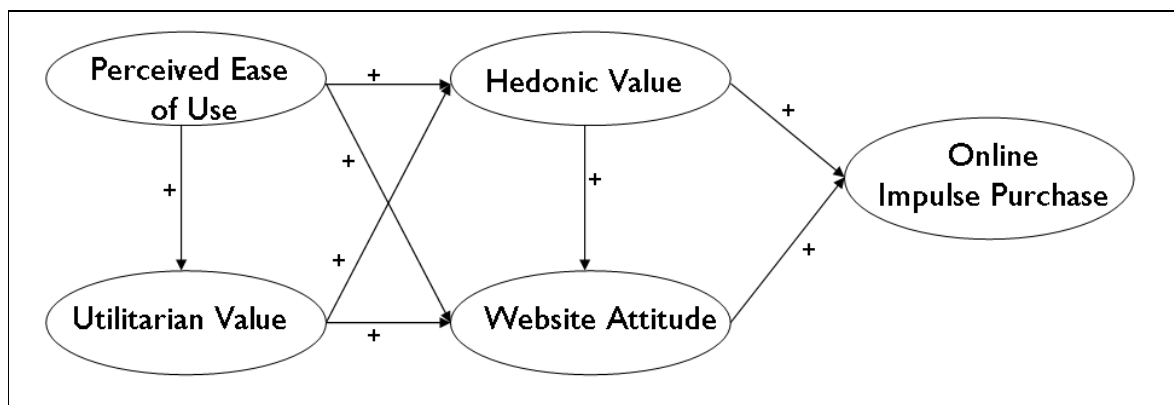


Figure 2: Model explaining online impulse purchase

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APPENDIX

Table 1: Characteristics of the reviewed articles

Authors	Year	Country of Study	Study Design	Sample Type	Sample Size	Website Type	Methodology	Theoretical Basis	Independent Variables	Dependent Variables
Li, Kuo, Russell	1999	US	Online survey	General Internet users	999	No website used	ANOVA	Channel theory	UV, HV	PUR
Heijde	2000	Netherlands	Online survey	General Internet users	887	Existing website used	SEM	TAM	PEOU, PU, ENJY	PAT
Lin, Lu	2000	Taiwan	Survey	Undergraduate students	145	Existing website used	Path analysis	TAM	PEOU, PU	PAT
Bhattacharjee	2001	US	Online survey	General users of online brokerage services	172	No website used	SEM	TAM & Expectancy Confirmation Theory	PU	PAT
Childers, Carr, Peck, Carson	2001	US	Survey	Undergraduate students	274	Existing website used	SEM	TAM	PEOU, PU, ENJY	ATT
Heijden, Verhagen, Creemers	2001	Netherlands	Survey	Undergraduate students	227	Existing website used	SEM	TAM & TRA	PEOU, PU ATT	PI
Koufaris, Kambil, LaBarbera	2001	US	Online survey	Customers of a website	332	Existing website used	Regression	No theory	ENJY	PAT, IP,
Koufari	2001	US	Online survey	General Internet users	280	Existing website used	Regression	TAM & Flow theory	PEOU, PU, ENJY	PAT, IP
Chen, Gillenson,	2002	US	Online survey	General online buyers	253	No website used	SEM	TAM & Innovation Diffusion	PEOU, PU, ATT	PUR

Shrerel								Theory		
Menon, Kahn	2002	US	Experiment	Undergraduate students	64	New website created	ANOVA/ MANOVA	Two dimensional framework	PLSR, ARO	IP
Adelaar, Chang, Lancendorfer, Lee, Morimoto	2003	US	Experiment	Undergraduate students	95	New website created	ANCOVA, Hierarchical regression	Environmental psychology approach	PLSR, ARO	IP
Heijden, Verhagen, Creemers	2003	Netherlands	Survey	NA	228	Existing website used	SEM	TAM	PEOU, PU, ATT	PI
Korzaan	2003	US	Online survey	Undergraduate students	342	No website used	SEM	No theory	FLOW, ATT	PI
O'Cass, Fenech	2003	Australia	Online survey	General Internet users	392	No website used	SEM	TAM	PEOU, PU, ATT	PUR
Pavlou	2003	US	Online survey	Undergraduate students	103	No website used	Partial least squares	TAM	PEOU, PU	PI, PUR
Zhang, Prybutok	2003	US	Paper & Online survey	General Internet users	241	No website used	SEM	TAM	PEOU, PU	PI, ATT
Ahn, Ryu, Han	2004	Korea	Online survey	General online buyers	932	No website used	SEM	TAM	PEOU, PU, ATT	PI
Chen, Tan	2004	US	Online survey	General Internet users	253	No website used	SEM	TAM	PEOU, PU, ATT	PI
Heijden, Verhagen	2004	Netherlands	Survey	Undergraduate students	312	Existing website used	Regression	TAM	PEOU, PU, ENJY PER	PI, ATT
Kim, Kim	2004	US	Survey	General Internet	303	No website	Path analysis &	No theory	UV, HV	PI

				users		used	component factor			
Rosen, Purinton	2004	US	Survey	Undergraduate students	203	Existing website used	ANOVA/MANOVA	Preference framework	UV, HV	PAT
Vijayarathy	2004	US	Survey	General Internet users & non-users	281	No website used	Regression	TAM	PEOU, PU, ATT	PI
Chiu, Lin, Tang	2005	Taiwan	Survey	General Internet users	376	No website used	SEM	TAM	PEOU, PU,	ATT, PI
Elliott, Speck	2005	US	Survey	Undergraduate students	101	Existing website used	Hierarchical regression	No theory	PEOU, ENJY,	ATT
Fiore, Jin, Kim	2005	US	Experiment	Undergraduate students	103	Existing website used	Path analysis	Consciousness-Emotion-Value Model	ARO, PLSR	PI, PAT, ATT
Fiore, Kim, Lee	2005	US	Experiment	Undergraduate students	206	New website created based on existing one	SEM	No theory	UV, HV, FLOW	PI, PAT, ATT
Karson, Fischer	2005	US	Survey	Undergraduate students	325	Existing website used	SEM	Dual-mediation hypothesis	UV, HV, ATT	PAT
Mummalaneni	2005	US	Survey	Undergraduate students	250	Existing website used	Regression	Stimulus-organism-response framework	PLSR, ARO	PAT, PUR,
Richard	2005	Canada	Online survey	General Internet users	NA	Existing website used	SEM	Stimulus-organism-response framework	UV, HV, ATT	PI

Song, Zahedi	2005	US	Experiment	Undergraduate students	639	New website created	SEM	TAM&Belief-Reinforcement Model	UV, PEOU, ATT	PI
Cotte, Chowdhury, Ratneshwar, Ricci	2006	US	Survey	Undergraduate students	310	No website used	SEM	No theory	UV, HV	PUR
De Wulf, Schillewaert, Muylle, Rangarajan	2006	Belgium	Online survey	Panel users	610	No website used	SEM	No theory	PLSR	PAT
Jung, Lim	2006	Korea	Online survey	General Internet users	189	No website used	SEM	Beatty & Ferrell's Model of Impulse Buying	FLOW,	IP, actual IP
Lee, Fiore, Kim	2006	US	Experiment	Undergraduate students	206	New website created based on existing one	Maximum likelihood estimation	TAM	PEOU, PU, ENYM, ATT	PI, WOM, PAT
Overby, Lee	2006	US	Online survey	General online buyers	817	No website used	SEM	No theory	HV, UV	PI, WOM
Zhang, Prybutok, Koh	2006	US	Online and paper survey	Undergraduate students	294	No website used	SEM	TAM	PEOU, PU	PI, PUR
Bosnjak, Galesic, Tuten	2007	Croatia	Online survey	General Internet users	808	No website used	Maximum likelihood estimation	3M Model	UV, HV	PI
Khalifa, Shen	2007	Hong Kong	Experiment	Undergraduate students	151	New website created	MANOVA, SEM	Stimulus-organism-	PLSR, ARO, FLOW	IP, Actual IP

								response framework		
Kim, Fiore, Lee	2007	US	Experiment	Undergraduate students	206	New website created based on existing one	Maximum likelihood estimation	No theory	ENJY	PAT
Lin	2007	Taiwan	Survey	Undergraduate students	297	Existing website used	SEM	TAM&TPB	PEOU, PU, PI, ATT	PUR
Song, Fiore, Park	2007	US	Survey	Undergraduate students	86	New website created	Path analysis	Consciousness-Emotion-Value Model	FLOW, ENJY, PI	PAT
To, Liao, Lin	2007	Taiwan	Survey	General online buyers	101	No website used	SEM	No theory	UV, HV	PI
Wang, Baker, Wagner, Wakefield	2007	US	Experiment	Undergraduate students	337	New website created	SEM	Social response theory	UV, HV, FLOW, PLSR, ARO	PAT
Bridges, Florsheim	2008	US	Survey	Undergraduate students	337	No website used	Regression	Flow theory	UFLOW, HFLOW	PU
Koo, Kim, Lee	2008	Korea	Survey	General online buyers	279	No website used	SEM	Means-end-chain	UV, HV	PAT
Cheng, Wang, Lin, Vivek	2009	Taiwan	Survey	General Internet users	295	No website used	SEM	Sheth's five consumption values	UV, HV	PI
Ha, Stoel	2009	US	Online survey	Undergraduate students	298	No website used	SEM	TAM	PEOU, PU, ENJY, ATT	PI
Hausman, Siekpe	2009	US	Online survey	General Internet users	266	Existing website used	SEM	TAM & Flow & Uses-	FLOW, ATT	PI, PAT

								gratifications		
Jeong, Fiore, Niehm, Lorenz	2009	US	Experiment	Undergraduate students	196	New website created based on existing one	Maximum- likelihood estimation	Stimulus-org- response	HV, PLSR, ARO	PAT
Parboteeah, Valacich, Wells	2009	US	Experiment	Undergraduate students	264	New website created based on existing one	SEM/MANOVA	Environmental- psychology orientation	UV, HV, PU, ENJY	IP
Wang	2009	Taiwan	Survey	Undergraduate students	341	No website used	SEM	No	UV, HV	PI
Wu	2009	Taiwan	Online survey	General Internet users	875	No website used	SEM	No	UV, HV,	WOM, PAT
Liu, Forsythe	2010	US	Online survey	General Internet users	598	No website used	SEM	TAM	PU, ENJY	PUR
Lopez, Ruiz	2010	Spain	Survey	Undergraduate students	165	Existing website used	SEM	Dual-mediation hypothesis	UV, HV ATT	PI
Mazaheri, Richard, Laroche	2010	Canada	Online survey	Undergraduate students	2610	No website used	SEM	Pleasure- Arousal- Dominance	PLSR, ARO, FLOW, ATT	PI
Shih, Jin	2011	Taiwan	Online survey	General online buyers	150	No website used	SEM	Dual state view of affect and cognition	ENJY	PI

Table 2 : Main Independent and Dependent Variables

Independent Variables	Dependent Variables
UV: Utilitarian Value	ATT: Attitude
HV: Hedonic Value	IP: Impulse purchase
PEOU: Perceived ease of use	PAT: Patronage intention
PU: Perceived Usefulness	PI: Purchase intention
ENJY: Enjoyment	PUR: Actual purchase
ATT: Attitude	WOM: Word of mouth intention
FLOW	
UFLOW: Utilitarian flow	
HFLOW: Hedonic flow	
PLSR: Pleasure	
ARO: Arousal	

Table 3 : Summary of the Findings

Independent Variables	No. Studies	Dependent variables						
		Purchase Intention	WOM intention	Patronage intention	Actual purchase	Impulse purchase	Attitude	Total
		+ - 0	+ - 0	+ - 0	+ - 0	+ - 0	+ - 0	+ - 0
Utilitarian value	12	6		4	2	1	1 1	14 0 1
Hedonic value	14	4 2		4	2	1	3	13 0 2
Ease of use	17	3 2	1	1 2			11 2	15 0 6
Usefulness	21	9 2	1	4	1		10 3	24 0 6
Enjoyment	12	3 1	1	3 2	1	1 2	4	12 0 6
Flow	6	4		2		1	2	9 0 0
Hedonic Flow	1	1						0 0 1
Utilitarian Flow	1	1						1 0 0
Pleasure	7	1		4	1	2 1	1	9 0 1
Arousal	6	1		2 1	1	3	1	7 0 2
Attitude	16	13 2	1	3	1			18 0 2

Figure 1: Publication of studies per year

