

8-6-2011

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Fone Pengnate

*Oklahoma State University*, Fone.pengnate@okstate.edu

Rathindra Sarathy PhD

*Oklahoma State University*, rathin.sarathy@okstate.edu

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## Recommended Citation

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*AMCIS 2011 Proceedings - All Submissions*. 122.

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# Form and Function: How Website Characteristics Impact User Behavior

**Supavich Pengnate**

Oklahoma State University  
Fone.pengnate@okstate.edu

**Rathindra Sarathy, PhD**

Oklahoma State University  
Rathin.sarathy@okstate.edu

## ABSTRACT

This research aims to investigate the effects of website elements, visual appeal and ease of use, as central factors in website trust formation and subsequent behaviors. Drawing on existing theories and empirical findings in psychology, information systems, and human-computer interaction literature, a research model is developed and proposed to explain the relationships among website visual appeal and its ease of use with trust, perceived usefulness, and intention to purchase. To gather data, an online experiment was conducted to test the proposed model and hypotheses. The findings of the study reveal that even though both website visual appeal and ease of use are significant determinants for website trust, visual appeal produces a much stronger impact.

## Keywords

Website design, website visual appeal, usability, ease of use, trust

## INTRODUCTION

Online vendors have faced the challenge of engendering customers' trust, especially for newly established websites. Even though practitioners have proposed various Web strategies for establishing trust in relatively unknown online stores, the mechanisms by which trust is built in such computer-mediated environments and their effectiveness are still not well understood. In this article, we develop a theoretical framework for investigating how website characteristics influence customers' trust in an online commerce context. We illustrate the important of trust antecedents that have been largely overlooked in the information systems literature, but are key to understanding how trust can be established in online commerce settings. Specifically, building on Rempel et al. (Rempel, Holmes, and Zanna, 1985), we posit that online trust in customer-vendor relationships has cognitive and affective dimensions and argue that different website characteristics can influence different trust dimensions which in turn leads to a vendor's trustworthiness and online purchase intentions.

The human-computer interactions (HCI) discipline has examined the relationship between user experience and evaluation of website's trustworthiness, particularly on usability of a website which can help or hinder users as they interact with a website (Cyr, 2008; Garrett, 2003). Until recently, traditional HCI has been focused more on the usability of a system which represents a cognitive aspect of mental model, while overlooking the role played by affective aspects, such as user experience (e.g., fun, helpful, or aesthetically pleasing). However, in recent years, user experience has received increasing attention as emotion-based user interface design and the positive correlation between usability and the affective aspects, such as aesthetics, have been reported (Norman, 2003).

In information systems literature, users' evaluation of a website's trustworthiness is further complicated by the fact that the website's trustworthiness may be assessed based on various elements of the website other than its usability. There are several dimensions of the interaction between a website and its users that are not necessarily task-oriented (e.g., content quality, arousal, and emotions) that can influence the users' evaluation process and behavioral responses (Karat, 2003; Norman, 2003). Relevant to the current investigation, several studies have tried to broaden theoretical perspectives of users' evaluations of systems that move beyond the technology acceptance model (TAM) (Davis 1989) into the realm of affective dimension (Cyr, Head, Larios, and Pan, 2009); for example, website elements as they contribute to the user's hedonic experience (van der Heijden, 2004), emotional design and its potential to contribute to user's experience (Norman, 2002), and the interactions between user-perceived usability, hedonic attributes, goodness, and beauty of systems (Hassenzahl, 2004).

Additionally, numerous studies have attested to the significant effects of website quality, such as perceived ease of use on trust (Gefen, Karahanna, and Straub, 2003), intentions (van der Heijden, 2004), and e-loyalty and user satisfaction (Cyr,

2008; Flavián, Guinalú, and Gurrea, 2006). On the other hand, only few studies have investigated the affective aspects of website design such as color appeal (Cyr, Head, and Larios, 2009), enjoyment (Childers, Carr, Peck, and Carson, 2001), and human images and perceived social presence (Cyr, Head, Larios, et al., 2009; Hassanein and Head, 2007). Furthermore, to the best of our knowledge, there is no previous research in which different combinations of website usability and visual appeal are examined related to their effect on online trust and purchase intention.

This research contributes to knowledge of online user behavior by applying Norman's "emotional design" framework which posits that human attributes result from three different levels of brain mechanism: visceral level, behavioral level, and reflective level (2003). The visceral is the first and most primitive affective processing such as visual appeal, and then it signals the behavioral and reflective levels which involve more cognitive processing of human behavior. These three levels of emotional design are described in more detail in later sections. However, at the visceral level, the first lowest level of the three, the halo effect of the emotional response toward an object is demonstrated and can further influence individuals' perception of the object and general attitude to the object such as the users' perceptions of website qualities, usability, or trustworthiness (Fogg et al., 2003; Norman, 2003; Tractinsky and Lowengart, 2007; Vilnai-Yavetz and Rafaeli, 2006).

In summary, the research has the following objectives:

1. To test a theoretical model in which visual appeal and usability are included and connected to trust, usefulness, and intention to purchase. While past studies have considerably focused on website usability which represents cognitive aspects of trust antecedents, much less attention has been devoted to affective aspects such as the design of user experiences for websites with a state of intense emotions involved in an activity.
2. To examine how website visual appeal and usability influence the users' trust formation. And in turn, does increase in those website characteristics impact important intentions to purchase such as trust and usefulness? While the dominant paradigm in explaining user acceptance of information systems is TAM, this study proposes a theoretical model which includes the hedonic nature of a website and investigates how the hedonic nature of a website affects the TAM model.

## THEORETICAL FRAMEWORK AND RESEARCH MODEL

This study aims to validate a theory-based model for trust in online settings and examines two specific website characteristics, website visual appeal and perceived ease of use, as antecedents to trust, perceived website usefulness, and intention to purchase. The proposed research model, depicted in Figure 1, hypothesizes that the both website visual appeal and perceived website usability positively affect customers' trust. Trust, in turn, increases the customers' intention to purchase from the vendor.

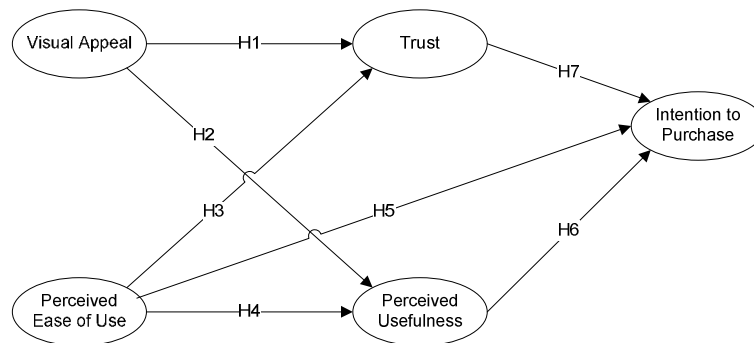


Figure 1. Proposed Research Model

Understanding how trust is established in customers is crucial issues in the online commerce context. Website trustworthiness has been conceived as a critical determinant of the customers' responses such as intention to use or buy from the website (Hong, Thong, and Tam, 2004; Kim, Ferrin, and Rao, 2009; Ratnasingham, 1998). In psychology, researchers have argued that trust develops and emerges over time (Jones and George, 1998; McAllister, 1995). However, according to McKnight et al., a high level of trust can be formed when people first meet (initial trust), which may be explained by institutional cues (McKnight, Cummings, and Chervany, 1998). Adapting the definition of trust from Mayer et al. (1995) and Lim et al. (Lim, Sia, Lee, and Benbasat, 2006) to the online shopping context, we define trust as "the belief that an online customer has in an online vendor and is willing to engage in a purchasing transaction, even with the possibility of loss, based on the expectation

that the vendor will engage in generally acceptable practices, and will be able to deliver the promised products or services” (Lim et al., 2006).

The focus of this study is to examine trust that first-time website visitors have in a website that has no established reputation. Therefore, the trust in which we focus is initial trust proposed by McKnight et al. (1998). According to McAllister (1995), trust has both cognitive and affective dimensions. Cognition-based trust relies on rational evaluation, available knowledge, and good reasons (Jeffries and Reed, 2000) while affect-based trust refers to emotional attachment and emotional bonds between individuals (Lewis and Weigert, 1985). This study adopts the perspective that online trust is constructed with both dimensions and different website elements have impact on formation of both cognition- and affect-based trust.

The idea that website elements may affect cognition and affection aspects of trust was drawn from the human-computer interaction (HCI) literature. HCI provides guidelines for efficiently designing a system and understanding the users and classifies the objective of system design in two distinct dimensions, usability and user experience. The first dimension, usability, is concerned with the capability of the system to meet specific usability criteria, e.g. efficiency, utility, or learnability, whereas the second dimension, user experience, is broadly concerned with stimulating the nature of the user experience, e.g. fun, helpful or aesthetically pleasing (Sharp, Rogers, and Jenny, 2007). Supporting the view that website elements have the ability to impact user psychological reactions, Norman (2003) proposed a framework of emotional design which was created based on the psychological processes of human brain mechanisms. Within the scope of the emotional design, human attributes result from three different levels of brain mechanism: the visceral level, the behavioral level, and the reflective level. Each level plays a different role in the total functioning of people (Norman, 2003). The visceral is the first layer of the emotional design which makes rapid judgments of what is good or bad and alerts the rest of the brain. At the visceral level, physical features of a system dominate human perceptions, such as graphics, cleanliness, and beauty so that this is the start of affective processing. The behavioral level is in the second layer and is the site of most human behavior which is the start of human’s cognitive processing. At the behavioral level, function of the system comes first and therefore the system’s ease of use can influence the users’ perception of how well the system satisfies their needs. The last layer, the reflective level, the highest level of the emotional design, is the start of the contemplative part of the brain. At this level, the users’ evaluation regarding the overall impression of the system plays a major role and then, in turn, leads to the users’ responses to the system, such as trust, satisfaction, or other behavioral intentions.

While website appearance is an important part of the affective dimension of trust, website usability also plays an important role in the cognitive dimension of trust. Perceived website usability can be formed in the behavioral layer of the emotional design (Norman, 2003). Over the years, the term “usability” has been defined and used differently in various domains. According to Sharp et al. (2007), IT system usability involves the effectiveness, efficiency, safety, utility, learnability, and memorability. Palmer (2002) suggested that website usability should include consistency and the ease of getting the website to do what the user intends, clarity of interaction, ease of reading, arrangement of information, speed, and layout. More recently, it has been suggested that website usability “is a quality attribute that assesses how easy user interfaces are to use” (Nielsen, 2003). These definitions show the concurrence between the concept of “ease of use” and usability. While the term covers a broad range of phenomena, in this paper we refer to “perceived ease of use” as a dimension of usability and follow Davis’s definition of perceived ease of use in its narrowest sense as “the degree to which a person believes that using a particular system would be free of effort” (Davis, 1989), so “perceived ease of use” will be used instead of “usability” in this paper.

Following the formation of trust, the dominant model in prediction of an IT system adoption is the technology acceptance model (TAM) (Davis, 1989). According to TAM, perceived usefulness and perceived ease of use are antecedents of the system adoption. In this study, we consider a website to be an information technology and argue that the same user-antecedents that apply across IT, perceived usefulness and perceived ease-of-use, apply to the system use or online purchasing behavior from an online vendor as well (Gefen, et al., 2003). In addition to the role of perceived usefulness and perceived ease-of-use, Gefen et al. (2003) extended TAM by including the concept of trust into an integrated model. Their study provides evidence that these variable sets together explain a considerable proportion of variance in intended behavior.

Building on these theories and assumptions, we propose our theoretical research model. The proposed model is developed to test the impact of website elements on trust and perceived usefulness, which ultimately leads to online purchasing intention.

## **HYPOTHESIS DEVELOPMENT**

We clarify our position regarding website visual appeal by considering user experience with the overall appearance of the website, not specific elements such as font, colors, photographs, shapes, or layout. Several studies suggest a relationship between a website visual appearance and trust, especially for the first-time visitors. Website visual design can create favorable first impressions (Norman, 2003) and create a favorable bias in the visitors’ perception (Loken, 2006; Tractinsky

and Lowengart, 2007). The website visual design also serves as an antecedent of trust which is an indicator of site credibility (Fogg, et al., 2003). Cyr (2008) also found a significant relationship between website visual design and trust across cultures. Therefore in this study, it is posited that website's visual appeal will result in the users' perception of trust.

**Hypothesis 1:** *Website visual appeal will result in website trust.*

In addition to trust, we also posit that website visual appeal positively influences perceived usefulness. Website design can positively influence customers' perception of an online vendors' abilities which is one of the three dimensions of trusting beliefs that has been studied in the literature (McKnight et al., 2002), and intentions to make quality products or services (Schlosser, White, and Lloyd, 2006). Thus, it can increase the customers' confidence in the promises of the expected usefulness of the products or services delivered by the online vendor.

**Hypothesis 2:** *Website visual appeal will result in perceived usefulness.*

The technology of acceptance model (TAM) (Davis, 1989) predicts that the perceived usefulness and the perceived ease-of-use are determinants of new IT system adoption. In a wide variety of settings, TAM is both a parsimonious and a robust model that predicts IT adoption (Gefen and Straub, 2000). An integrated model of trust and TAM has been proposed in previous research (Gefen, et al., 2003), we hypothesize that paths predicted by the integrated model also apply to this study.

Perceived ease of use is related to a website ability to interact with its users especially to help the users minimize learning curve. Greater ease of use offers a comfortable atmosphere that might color the customers' perception of website quality and consequently influences perceived usefulness, trust, and intention to purchase (Bellizzi and Hite, 1992; Flavián, et al., 2006). In addition, perceived ease of use also results in satisfaction and e-loyalty in a cross-cultural context which is supported by Yoon's and Cyr's studies (Cyr, 2008; Yoon, 2002).

**Hypothesis 3:** *Perceived ease of use will result in website trust.*

**Hypothesis 4:** *Perceived ease of use will result in perceived usefulness.*

**Hypothesis 5:** *Perceived ease of use will result in intention to purchase.*

Previous research has consistently argued that there is a positive relationship between perceived usefulness with acceptance of IT system (Davis, 1989; Gefen, et al., 2003; Pavlou, 2003). Applied to online customer behavior context, an online vendor that is perceived as being capable of providing high quality products or services is likely to be accepted by customers. Therefore in this study, we hypothesize a positive path between perceived usefulness and online purchasing intention.

**Hypothesis 6:** *Perceived usefulness will result in intention to purchase.*

Based McKnight et al., it is hypothesized that trust directly affect people's intention which can also affect online shopping (McKnight, et al., 1998). The study defined trust as the belief that an online customer has in an online vendor that will be able to deliver the promised product or services (Lim, et al., 2006) and cited the theory of reasoned action; TRA (Fishbein and Ajzen, 1975) which links beliefs with intention to support the relationship. Thus, we posit the following hypothesis:

**Hypothesis 7:** *Website trust will result in intention to purchase.*

## **METHODOLOGY**

An empirical study was conducted to investigate the proposed research model. The study was designed as a 2x2 factorial experiment. We manipulated the website treatment by varying the levels of website visual appeal and ease of use.

### **Participants**

An experimental approach was used in testing the proposed research model presented in Figure 1. Subjects consisted of 131 third- and fourth-year undergraduate students in business major at a major Midwestern University. Subjects are experienced online shoppers. Once refined, excluding repeat questionnaires and missing data, there were 92 valid samples.

### **Website Treatment and Task**

To investigate how visual appeal and ease of use influence users' responses, the website treatment needed to (1) vary only in terms of visual appeal and ease of use, (2) represent as a legitimate unfamiliar online vendor, (3) evoke the subjects' perception of the vendors' product/service quality. Following the aforementioned criteria, a design expert created four versions of an apartment rental company's websites which were designed to vary at two levels of visual appeal and two levels of ease-of-use. Each of the four websites displayed the same content but varied in the quality according to the levels of visual

appeal and ease-of-use. The experiment was conducted entirely online and subjects could complete the study from any computer with an internet connection, thus increasing the online transaction task realism. Following the completion of the task (acquire an apartment rental reservation number), subjects completed a questionnaire about their experiences on the apartment rental company's website they visited.

## ANALYSIS AND RESULTS

### Instrument Validity and Reliability

Measures for all constructs came from existing literature where they had been repeatedly tested and strong content validity exhibited (the survey instrument may be obtained upon request from the author). In order to demonstrate that the measures have construct validity, we tested for both convergent and discriminant validity. Convergent validity is a judgment based on relatively high correlations between indicators of the same construct while discriminant validity refers to the low correlations between indicators of different constructs (Straub, 1989). Table 1 exhibits the results of the verimax rotation on the items of the constructs. As suggested by Hair et al., construct items are considered to load highly if the loading coefficient is above 0.6 (Hair, Tatham, Anderson, and Black, 1995). Therefore, the constructs in the survey demonstrate convergent validity. Further, we evaluated the construct reliability by using Cronbach's alpha which is also presented in Table 1. The alpha values ranged from 0.909 to 0.969 while the suggested value should be higher than 0.7 (Hair, et al., 1995). Therefore, all constructs possess construct reliability.

Construct Items	Factor				
	1	2	3	4	5
VA1	0.259	0.219	<b>0.816</b>	0.248	0.097
VA4	0.185	0.277	<b>0.856</b>	0.153	0.154
VA5	0.296	0.216	<b>0.821</b>	0.296	0.157
EASE1	0.327	<b>0.680</b>	0.199	0.148	0.117
EASE2	0.188	<b>0.829</b>	0.067	0.050	0.098
EASE3	0.250	<b>0.858</b>	0.078	0.109	0.041
EASE4	0.222	<b>0.781</b>	0.217	0.193	0.128
EASE5	0.174	<b>0.838</b>	0.239	0.117	0.012
EASE6	0.230	<b>0.861</b>	0.185	0.157	0.084
USEFUL1	<b>0.705</b>	0.219	0.254	0.229	0.135
USEFUL2	<b>0.794</b>	0.269	0.221	0.188	0.080
USEFUL3	<b>0.908</b>	0.182	0.113	0.075	0.101
USEFUL4	<b>0.889</b>	0.264	0.124	0.203	0.141
USEFUL5	<b>0.872</b>	0.308	0.184	0.211	0.121
USEFUL6	<b>0.858</b>	0.263	0.197	0.116	0.114
TRUST1	0.163	0.091	0.165	<b>0.867</b>	0.016
TRUST2	0.234	0.205	0.185	<b>0.780</b>	0.160
TRUST3	0.191	0.200	0.254	<b>0.778</b>	0.241
INTENT2	0.434	0.277	0.327	0.382	<b>0.693</b>
INTENT3	0.350	0.173	0.373	0.366	<b>0.620</b>
Alpha	<b>0.969</b>	<b>0.948</b>	<b>0.955</b>	<b>0.909</b>	<b>0.942</b>

Notes: VA = visual appeal, EASE = ease of use, USEFUL = usefulness, TRUST = trust, INTENT = purchasing intention.

**Table 1. Construct Validity**

Discriminant validity refers to statistically testing whether two constructs differ. Evidence of discriminant validity is shown if correlation between any two constructs lower than the square root of the average variance extracted (AVE) by the correlated construct (Hair, et al., 1995). In Table 2, the square root of the AVE between a construct and its items is greater than the correlations between the construct and the other constructs in the model. Therefore, this demonstrates sufficient discriminant validity between the construct measures of the research model.

	Intention	Trust	Ease of Use	Usefulness	Visual Appeal
Purchasing Intention	<b>0.972</b>				
Trust	0.657	<b>0.919</b>			
Ease of Use	0.506	0.412	<b>0.891</b>		
Usefulness	0.653	0.471	0.558	<b>0.931</b>	
Visual Appeal	0.666	0.530	0.507	0.533	<b>0.958</b>

Note: Diagonal elements in boldface represent the square root of AVE

Table 2. Correlation and Square Root of AVE

**Structural Model Analysis**

Once the measurement model scales were validated, we adopted a structural equation modeling (SEM) approach to test the hypotheses. The variance-based PLS method was chosen over covariance-based methods such as LISREL. PLS is relatively robust to deviations from a multivariate distribution (Cyr, Head, and Larios, 2009; Gage, 1999). The PLS model is shown in Figure 2.

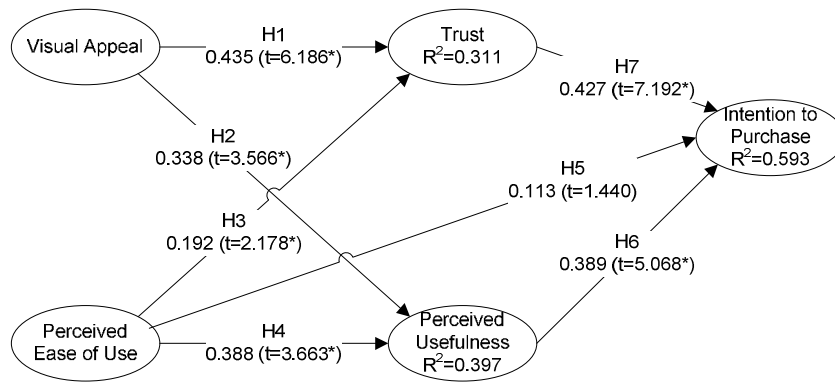


Figure 2. PLS model results for hypothesis testing (\* p-value < 0.05)

With regard to the proposed hypotheses, it was noted that trust and perceived usefulness positively and directly depended on visual appeal and ease of use, as shown by the significance path estimates. Therefore, hypotheses H1, H2, H3, and H4 are supported. It was also observed that as levels of trust and perceived usefulness improved as did the intention to purchase, thus, hypothesis H6 and H7 are supported. On the other hand, hypothesis H5 is not supported as they did not show sufficient statistical significance. With respect to the variance explained, the results demonstrate approximately 31% of the variance explained in trust (R-square = 0.311), 40% of the variance explained in the perceived usefulness (R-square = 0.397), and 59% of the variance explained in the intention to purchase (R-square = 0.593). All R-square values of the endogenous constructs in the proposed model exceed the 10% threshold recommended by Falk and Miller (Falk and Miller, 1992).

**Additional Analysis: Mediation Effect of Trust and Visual Appeal**

One of the objectives of this study is to investigate how visual appeal and trust can be applied to the establish TAM constructs, perceived ease of use and perceived usefulness. In order to investigate the mediation effects of trust on the relationships between perceived ease of use and intention to purchase (hypothesis H5) which is not supported in the hypothesis testing, we tested the TAM constructs in a PLS analysis. All the paths show sufficient statistical significance. Approximately 49% of the variance for intention to purchase is accounted for by perceived ease of use and usefulness. Therefore, the effect of ease of use on intention to purchase seems to be conditioned by trust and visual appeal.

**DISCUSSION AND CONCLUSIONS**

The results of the experiment generally confirmed the proposition that website trustworthiness is evoked by website users' initial emotional responses and design elements of a website the user first encounters will have carry-over effects on the users' subsequent behavior. Gefen and his colleagues showed that trust has an effect on online customers' intention to purchase from a commercial website (Gefen, et al., 2003). This paper sought to investigate website interface elements that

influence trust and to examine their effect on subsequent user behaviors within an online shopping environment. Results from the PLS analysis show that website visual appeal and perceived ease of use appear to have positive significant effects on trust and perceived usefulness. However, in this study, the relative strength of visual appeal and perceived ease of use are examined and the results suggest that visual appeal (std. coefficient = .435) produces much stronger effect on trust than perceived ease of use (std. coefficient = .192). In alignment with Fogg et al.'s empirical study regarding website trust which represented as a dimension of credibility, it was expected that website visual appearance would be more important than other design elements in affecting trust. Results confirm that visual appeal is more important than ease of use in building trust. However, these results differ from those of Cyr (2008), who found that website's navigation elements have a stronger impact than visual design elements on trust of a well-known vendors' website (e.g. Sony). This study focuses on an unfamiliar vendor's website. These findings signal the importance for website designers to improve website visual appearance which is especially important in establishing the trustworthiness of a store particularly for the first-time visitors.

Another interesting point in the findings of this study is that trust presents a mediating effect on the relationship between perceived ease of use and the intention to purchase (t-value = 1.44). These findings disagree with earlier research by Gefen et al. (2003), who proposed an integrated model of trust and the technology acceptance model (TAM) (Davis, 1989) and found that website trust and perceived ease of use equally affect intention. Specifically, perceived ease of use proposed in TAM loses its predictive value in favor of trust and visual appeal. This disagreement with earlier findings could be attributed to the different nature of the website use (e.g. utilitarian vs. hedonic) and the product being studied (e.g. airline tickets vs. apartment rental) which is an important boundary condition to the validity of TAM (Hassanein and Head, 2007; van der Heijden, 2004).

The research has both theoretical and practical contributions. The major theoretical contribution of this study is the development of a research model of how website visual appeal and ease of use can influence the web users' trust and their subsequent behaviors toward the website. Trust and usefulness are confirmed as antecedents to the intention to purchase. While these relationships have been supported by others (Davis, 1989; Flavián, et al., 2006; Gefen, et al., 2003; Pavlou, 2003), this was the first study in which these relationships are validated with various website characteristic treatment manipulations. Second, website appeal and ease of use are shown to be significant determinants for website trust. In addition, our results also suggest that the website visual appeal produces a much stronger impact on trust than ease of use. This is a new finding for the literature carried out by Karvonen's (2000) on website aesthetics and trust, Cyr et al.'s (2009) related to the effectiveness use of color, trust, satisfaction, and e-loyalty, and Hassenzahl's (2004) with respect to beauty, goodness, and usability. Third, our research further goes beyond TAM by incorporating an experiential factor associated with website user experience. TAM primarily focuses on system characteristics rather than users' emotional responses to the sensory elements of systems (Deng and Poole, 2010).

This study shows that website visual appearance can effectively evoke website trust and desirable user behaviors. Finally, while the results tend to be in the expected direction, visual appeal presents much stronger effects than those of ease of use which contradict Norman's suggestions that the effects from higher level (behavioral level) in the emotional design framework would override the effects of lower level (visceral level) (Norman, 2003). These findings can be supported by the halo effect which refers to the emotional first impression carries over to affect cognitive judgments of a website's other characteristics (Fogg, et al., 2003; Lindgaard, Fernandes, Dudek, and Brown, 2006).

As for practical contribution, the outcome of this research will be of interest to managers and website designers. A better understanding of the relationship between the website elements and trust can help website designers design websites that enable trust formation which is an essential factor for the customers' decision-making process regarding subsequent desired behaviors. This research provides significant implications for website design principles and helps the website designers to understand the importance of the website visual appeal and ease of use.

In conclusion, the impact of website design appears to be an increasingly important topic and deserves to be investigated. In previous IS studies, researchers have examined website usability which has been differently defined (Flavián, et al., 2006; Gefen, et al., 2003; Palmer, 2002), while other work has focused on website visual appearance (Karvonen, 2000; Tractinsky and Lowengart, 2007; van der Heijden, 2004). This research has provided empirical evidence on the interaction effects of website visual appearance with ease of use and explained how they impact website trust and subsequent behaviors through a theoretical model.

## REFERENCES

1. Bellizzi, J. A., and Hite, R. E. (1992) Environmental color, consumer feelings, and purchase likelihood. *Psychology and Marketing*, 9(5), 347-363.



2. Childers, T. L., Carr, C. L., Peck, J., and Carson, S. (2001) Hedonic and utilitarian motivations for online retail shopping behavior. *Journal of Retailing*, 77(4), 511-535.
3. Cyr, D. (2008) Modeling web site design across cultures: Relationships to trust, satisfaction, and e-loyalty. *J. Manage. Inf. Syst.*, 24(4), 47-72.
4. Cyr, D., Head, M., and Larios, H. (2009) Colour appeal in website design within and across cultures: A multi-method evaluation. *International Journal of Human-Computer Studies*, 68(1-2), 1-21.
5. Cyr, D., Head, M., Larios, H., and Pan, B. (2009) Exploring human images in website design: A multi-method approach. *MIS Quarterly*, 33(3), 539-566.
6. Davis, F. D. (1989) Perceived usefulness, perceived ease of use, and user accep. *MIS Quarterly*, 13(3), 319.
7. Deng, L., and Poole, M. S. (2010) Affect in web interfaces: A study of the impacts of web page visual complexity and order. *MIS Quarterly*, 34(4), 711-730.
8. Falk, R. F., and Miller, N. B. (1992). *A primer for soft modeling* (1 ed.): University of Akron Press.
9. Fishbein, M., and Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*: Addison-Wesley Pub. Co. (Reading, Mass.).
10. Flavián, C., Guinalú, M., and Gurrea, R. (2006) The role played by perceived usability, satisfaction and consumer trust on website loyalty. *Information & Management*, 43(1), 1-14.
11. Fogg, B. J., Soohoo, C., Danielson, D. R., Marable, L., Stanford, J., and Tauber, E. R. (2003). *How do users evaluate the credibility of web sites?: A study with over 2,500 participants*. Paper presented at the Proceedings of the 2003 conference on Designing for user experiences.
12. Gage, J. (1999). *Color and culture: Practice and meaning from antiquity to abstraction*. Berkeley, CA: The University of California Press.
13. Garrett, J. J. (2003). *The elements of user experience: User-centered design for the web*. Indianapolis, IN: New Riders.
14. Gefen, D., Karahanna, E., and Straub, D. W. (2003) Trust and tam in online shopping: An integrated model. *MIS Quarterly*, 27(1), 51-90.
15. Gefen, D., and Straub, D. W. (2000) The relative importance of perceived ease of use in is adoption: A study of e-commerce adoption. *Journal of the Association for Information Systems*, 1(8).
16. Hair, J. F., Tatham, R. L., Anderson, R. E., and Black, W. C. (1995). *Multivariate data analysis*. Englewood Cliffs, NJ: Prentice Hall.
17. Hassanein, K., and Head, M. (2007) Manipulating perceived social presence through the web interface and its impact on attitude towards online shopping. *International Journal of Human-Computer Studies*, 65(8), 689-708.
18. Hassenzahl, M. (2004) The interplay of beauty, goodness, and usability in interactive products. *Hum.-Comput. Interact.*, 19(4), 319-349.
19. Hong, W., Thong, J. Y. L., and Tam, K. Y. (2004) The effects of information format and shopping task on consumers' online shopping behavior: A cognitive fit perspective. *J. Manage. Inf. Syst.*, 21(3), 149-184.
20. Jeffries, F. L., and Reed, R. (2000) Trust and adaptation in relational contracting. *The Academy of Management Review*, 25(4), 873-882.
21. Jones, G. R., and George, J. M. (1998) The experience and evolution of trust: Implications for cooperation and teamwork. *The Academy of Management Review*, 23(3), 531-546.
22. Karat, J. (2003). Beyond task completion: Evaluation of affective components of use. In J. A. Jack & A. Sears (Eds.), *The human-computer interaction handbook*. Mahwah, NJ: Lawrence Erlbaum.
23. Karvonen, K. (2000). *The beauty of simplicity*. Paper presented at the Proceedings on the 2000 conference on Universal Usability.
24. Kim, D. J., Ferrin, D. L., and Rao, H. R. (2009) Trust and satisfaction, two stepping stones for successful e-commerce relationships: A longitudinal exploration. *Info. Sys. Research*, 20(2), 237-257.
25. Lewis, J. D., and Weigert, A. (1985) Trust as a social reality *Social Forces*, 63(4), 967-985.
26. Lim, K., Sia, C., Lee, M., and Benbasat, I. (2006) Do i trust you online, and if so, will i buy? An empirical study of two trust-building strategies. *Journal of Management Information Systems*, 23(2), 233-266.

27. Lindgaard, G., Fernandes, G., Dudek, C., and Brown, J. (2006) Attention web designers: You have 50 milliseconds to make a good first impression! *Behaviour & Information Technology*, 25(2), 115 - 126.
28. Loken, B. (2006) Consumer psychology: Categorization, inferences, affect, and persuasion. *Annual Review of Psychology*, 57(1), 453-485.
29. McAllister, D. J. (1995) Affect- and cognition-based trust as foundations for interpersonal cooperation in organizations. *The Academy of Management Journal*, 38(1), 24-59.
30. McKnight, D. H., Cummings, L. L., and Chervany, N. L. (1998) Initial trust formation in new organizational relationships. *The Academy of Management Review*, 23(3), 473-490.
31. Nielsen, J. (2003). Usability 101: Introduction to usability. from <http://www.useit.com/alertbox/20030825.html>
32. Norman, D. A. (2002) Emotion & design: Attractive things work better. *Interactions*, 9(4), 36-42.
33. Norman, D. A. (2003). *Emotional design: Why we love (or hate) every things*. New York: Basic Books.
34. Palmer, J. W. (2002) Web site usability, design, and performance metrics. *Information Systems Research*, 13(2).
35. Pavlou, P. A. (2003) Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce*, 7(3), 101-134.
36. Ratnasingham, P. (1998) The importance of trust in electronic commerce. *Internet Research: Electronic Networking Applications and Policy*, 8(4), 313-321.
37. Rempel, J. K., Holmes, J. G., and Zanna, M. P. (1985) Trust in close relationships. *Journal of Personality and Social Psychology*, 49(1), 95-112.
38. Schlosser, A. E., White, T. B., and Lloyd, S. M. (2006) Converting web site visitors into buyers: How web site investment increases consumer trusting beliefs and online purchase intentions. *Journal of Marketing*, 70, 133-148.
39. Sharp, H., Rogers, Y., and Jenny, P. (2007). *Interaction design: Beyond human-computer interaction* (2 ed.): Wiley.
40. Straub, D. W. (1989) Validating instruments in mis research. *MIS Quarterly*, 13(2), 147-169.
41. Tractinsky, N., and Lowengart, O. (2007) Web-store aesthetics in e- retailing: A conceptual framework and some theoretical implications. *Academy of Marketing Science Review*, 11(1).
42. van der Heijden, H. (2004) User acceptance of hedonic information systems. *MIS Quarterly*, 28(4), 695-704.
43. Vilnai-Yavetz, I., and Rafaeli, A. (2006) Aesthetics and professionalism of virtual servicescapes. *Journal of Service Research*, 8(3), 245-259.
44. Yoon, S.-J. (2002) The antecedents and consequences of trust in online-purchase decisions. *Journal of Interactive Marketing*, 16(2), 47-63.