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ABSTRACT

It is now generally recognized that online shopping has both utilitarian as well as hedonic components. In this research we created and tested a model in which perceived social presence resulted in enjoyment (hedonic component) as mediated by involvement, and alternatively perceived social presence resulted in effectiveness (utilitarian component) as mediated by trust. All paths in the model were confirmed. Involvement was found to have a medium effect on enjoyment and trust had a medium effect on effectiveness. In addition, the impact of whether a task is framed to be utilitarian or hedonic in nature was tested. While questionnaire data revealed no significant differences, eye-tracking data indicated that users spent more time viewing hedonic versus utilitarian zones. Finally, time constraints in website viewing were examined and users in an unlimited time group (versus 5 seconds of viewing time) experienced higher levels of involvement, enjoyment, trust and effectiveness toward the website.

Keywords

Hedonic, utilitarian, website design, perceived social presence

INTRODUCTION

Online retail shopping is recognized to encompass both utilitarian and hedonic components (Childers et al. 2001; Kim et al. 2007; Sun and Zhang 2006; Tractinsky 2004; Zhang and Li 2004). Utilitarian consumption is focused on achievement of predetermined outcomes typical of cognitive consumer behavior. Alternately, hedonic elements of the consumption experience are focused on affective consumer behavior as elicited from emotive and multi-sensory elements.

Based on dual components for utilitarian and hedonic experience as part of an online consumer experience, we propose a model that has two endogenous variables of enjoyment and effectiveness. The model is designed to examine the hedonic (enjoyment) and utilitarian (effectiveness) outcomes of social presence. We examine if involvement mediates the relationship between perceived social presence and enjoyment. Alternately, does trust mediate the relationship between perceived social presence and effectiveness? One expected contribution of this research is an enhanced understanding of perceived social presence in a model when both hedonic and utilitarian constructs are simultaneously considered.

As a second contribution, we seek to understand how user preferences and behavior are shaped depending on utilitarian or hedonic framing of the experience. More specifically, users are required to either think about purchasing an item on the Internet as a task that must be accomplished versus a task to be enjoyed. In short, does the framing and context of the task matter in online shopping? A third contribution of this research is to examine if time matters when users view a website. We examine the impact of time constraints versus prolonged viewing times as they relate to users impressions of website social presence.

RESEARCH MODEL

Social presence implies a psychological connection with the user, who perceives the website as "warm", personal, sociable, thus creating a feeling of human contact (Yoo and Alavi, 2001). Within our given theoretical framework, one goal of the current investigation is to model the relationship of perceived social presence for dual paths to either a hedonic variable represented by enjoyment, or to a utilitarian variable represented by effectiveness. While some of the hypothesized paths have been supported in previous research, they are now tested in a joint model. Further, we explore whether involvement mediates between social presence and enjoyment and if trust mediates between social presence and effectiveness. The proposed model for this effort appears in Figure 1.

Hedonic Outcomes of Website Social Presence

Hassanein and Head (2004, 2007) examined the impact of social presence on enjoyment on a product website selling apparel, with positive results. Higher levels of social presence led to higher levels of perceived enjoyment of the shopping website. Thus, it is hypothesized that

H1: *Higher perceived social presence will result in higher website enjoyment*

In other work, Kumar and Benbasat (2002) propose that a relationship is expected between perceived social presence (or para-social presence) with media characteristics including involvement. In addition, extrapolating from involvement as an element of social presence, website involvement is expected to impact on

user perceptions of website enjoyment (i.e. Cyr et al. 2007; Hassanein and Head 2004). Thus, we hypothesize:

H2: *Higher perceived social presence will result in higher website involvement.*

H3: *Higher website involvement will result in higher enjoyment of the website*

Utilitarian Outcomes of Website Social Presence

Cyr et al. (2007) found a very strong relationship (p<.001) between perceived social presence and perceived usefulness. Thus, we hypothesize:

H4: *Higher perceived social presence will result in higher website effectiveness.*

Cyr et al. (2007) and Hassanein and Head (2007) found that higher levels of perceived social presence for users on websites resulted in both website trust, as well as positive attitudes toward the website which we extrapolate also relate to effectiveness. Additionally, trust in the adoption of online recommendation agents resulted in perceived effectiveness of the agents (Wang and Benbasat 2005). Hence, we propose:

H5: *Higher perceived social presence will result in higher website trust.*

H6: *Higher website trust will result in higher website effectiveness*

Impacts of Framing

In the context of utilitarian or hedonic elements on a website, a utilitarian view of Web-store design focuses on the completion of tasks and transactions effectively and efficiently. Similarly, a system that aims to provide self-fulfilling rather than instrumental value to the user focuses on the fun-aspect of using the system rather than productive use (van der Heijden 2004). This suggests that the context in which a user considers a task will have an impact on perceptions of that task. Thus, we propose:

H7: *Hedonic framing will result in increased emphasis on hedonic outcomes (involvement and enjoyment).*

H8: *Utilitarian framing will result in increased emphasis on utilitarian outcomes (trust and effectiveness).*

Impacts of Time Constraints

In a series of experiments Lindegaard and her colleagues (2006) determined whether or not users liked a web page in as little as 50 milliseconds. However in a longer 500 millisecond condition users were able to evaluate more information related to content and the purpose of the web page. Further, considering timing in website viewing and as noted above, van der Heijden (2004) outlined that for hedonic information systems prolonged use is desirable. It would seem that in order for users to absorb hedonic elements of the website that result in perceived social presence outcomes, then longer viewing times will be superior to shorter viewing times. This results in our final hypothesis:

H9: *Social presence outcomes (involvement, enjoyment, trust and effectiveness) will be less when viewing time is constrained compared to when viewing time is not constrained.*
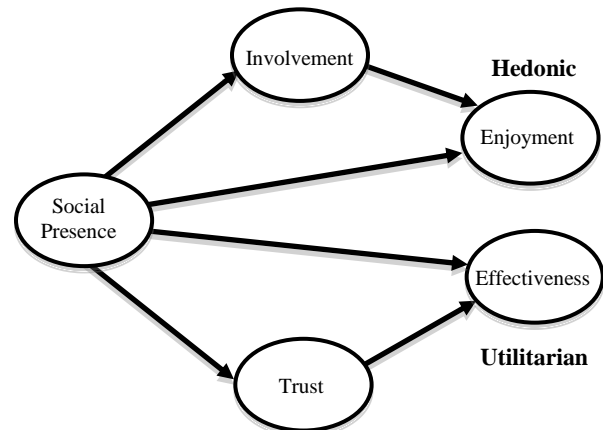

Figure 1. Proposed Research Model

METHODOLOGY

Sixty participants took part in this laboratory experiment. To avoid confounding of results due to gender differences, this study only focused on female participants. The laboratory experiment was conducted in a controlled setting where participants browsed a web page or website in a usability laboratory. The study was designed as a partially-repeated measures two-factorial experiment with two levels for each factor. The first factor was framing, where two scenarios were created to frame the shopping experience as either hedonic or utilitarian in nature. The second factor was time, where subjects were given 5 seconds to view a single apparel webpage or unlimited time to browse an apparel website comprised of 15 pages. Each subject participated in two treatment groups, where they experienced both hedonic and utilitarian framing as well as limited and unlimited time constraints.

The Ann Taylor website (http://www.anntaylor.com) was the basis for the experimentally manipulated websites, where each webpage was divided into areas of hedonic or utilitarian interest. As shown in Appendix A, three hedonic zones were defined as: (1) emotive text that describes a pleasant scene involving the garment (Zone C); (2) user comments of customers that had previously purchased the garment, sharing their experiences (Zone D); and (3) a picture of the garment being worn on a human model expressing pleasure (Zone B). Five utilitarian zones were defined as: (1) the name of the website (Zone A); (2) a text navigation bar at the top of the page focused on site functional elements (Zone B); (3) a text navigation bar at the left of the page focused on the garment content of the website (Zone C); (4) bullet points outlining the garment functional attributes (Zone G); and (5) an order specification area for the garment (Zone H).

The amount of screen space occupied by hedonic and utilitarian elements was approximately equal.

For the experiment participants were fitted with eye-tracking equipment that recorded their eye movement. After each experimental task was completed, participants completed an online questionnaire and answered interview questions that were geared towards the experimental condition (determined by the time factor). Thus, the survey and interview questions were completed twice by each participant. While the details are not provided here due to length limits, the survey utilized in this study exhibited satisfactory content validity (established through literature reviews); satisfactory convergent validity (demonstrated by the principle component factor analysis, α-values and AVE values); and satisfactory discriminant validity (shown from inter-construct correlation analysis).

RESULTS

Hedonic and Utilitarian Outcomes of Website Social Presence (H1-H6)

A structural equation modeling (SEM) approach was adopted to test H1 through H6. Table 4 summarizes the results of the model's hypotheses testing. All path coefficients of the hypothesized causal links were significant. Thus, H1 through H6 were supported. Approximately 52% of the variance in the enjoyment construct and 35% of the variance in the effectiveness construct are accounted for by the variables in the model. All R^2 values of the endogenous constructs in the model exceed the 10% benchmark recommended by Falk and Miller (1992).

Table 1: Results of Model Hypotheses Testing

H	Causal path	Path	*t*-value	Supported
H_1	PSP → Involvement	0.521	7.941***	Yes
H_2	Involvement → Enjoyment	0.538	7.469***	Yes
H_3	PSP → Enjoyment	0.275	2.889**	Yes
H_4	PSP → Trust	0.376	4.826***	Yes
H_5	Trust → Effectiveness	0.493	6.914***	Yes
H_6	PSP → Effectiveness	0.196	2.180*	Yes

* denotes significance at the .05 level; ** denotes significance at the .01 level; *** denotes significance at the .001 level

In the proposed and validated model it was hypothesized that involvement would mediate the hedonic relationship between perceived social presence and enjoyment, while trust would mediate the utilitarian relationship between perceived social presence and effectiveness. Following the approach outlined by Baron and Kenny (1986), we found the utilitarian relationship between perceived social presence and effectiveness was partially mediated by trust and the hedonic relationship between perceived social

presence and enjoyment was partially mediated by involvement. Additionally, using Cohen's calculation for effect size (Cohen 1988) we found that involvement has a medium effect size on enjoyment and trust has a medium effect size on effectiveness.

The Impact of Hedonic and Utilitarian Framing (H7, H8)

Examining differences between hedonic and utilitarian framing, ANOVA results of questionnaire data revealed no significant differences for perceived social presence, involvement, enjoyment, trust or effectiveness (p>.05 in all cases). Based on the questionnaire alone, it would seem that framing does not result in increased emphasis on hedonic or utilitarian outcomes. Turning to eye-tracking analysis we found that, overall, users exhibited higher number of fixations and longer viewing times on hedonic zones versus utilitarian zones (p<.001 for fixation counts, total time and time proportions).

In addition to a general viewing preference toward hedonic zones, eye-tracking analysis revealed some interesting differences between hedonic and utilitarian framed groups. For the unlimited time group, the time spent viewing hedonic design elements versus utilitarian design elements was significantly higher with the hedonically-framed group compared to the utilitarian-framed group (p=.034*). This difference was not statistically significant for the limited time group (p>.05). Therefore, for the 5-second treatment, framing did not impact viewing behavior but for the unlimited time treatment viewing behavior was significantly impacted by hedonic/utilitarian framing.

The Impact of Time Constraints (H9)

Comparing means between the two time groups, there were significant differences in the perceived outcomes of website social presence. For all outcomes, the unlimited time group demonstrated significantly higher levels than the 5-second time group. For the unlimited time group, participants experienced higher levels of perceived involvement (p=.000***), enjoyment (p=.004**), trust (p=.012*) and effectiveness (p=.000***). As expected, there were no differences in the perceptions of social presence between the two groups.

While the quantitative analysis supports our hypothesis for time constraints, it is interesting to delve deeper with the eye-tracking and interview data. As noted above, there were differences in the unlimited time treatment, with utilitarian framing resulting in significantly more attention being paid to utilitarian zones (17.32 seconds on average) when compared to hedonic framing (9.78 second on average). However, there were no differences in the amount of time spent viewing utilitarian or hedonic zones in the 5-second time treatment across framing scenarios. This result can be explained by interview data analysis. At the end of each experimental treatment, subjects were asked where they looked most on the web page and why. From the 60 participants, 51 in the 5-second treatment group stated they looked at the hedonic picture because of

its prominence. The picture stood out on the page due to the choice of color, size, and contrast with the background, thus attracting immediate visual attention. Only 18 of the 60 participants in the unlimited time group commented on the picture's prominence. In contrast, 30 out of the 60 unlimited time participants commented that they looked at web page elements that best fit their assigned tasks, while only 9 of the 60 5-second time constraint participants made any reference to task-fit criteria. Therefore, it is reasonable to conclude that under normal circumstances (where viewers are not under strict time constraints), viewing attention would be influenced by the framing of their viewing session. However when time constraints are imposed, framing of the viewing session plays a less important role when compared to more salient eye-catching design elements

CONCLUSIONS

This research achieved all intended goals and provides a richer understanding of how users are influenced by both hedonic and utilitarian elements of website design. The contributions of this work include:

(1) Creating and successfully testing of a model in which dual components of both utilitarian and hedonic elements online consumer experience co-exist. A new finding is that involvement mediates the relationship between perceived social presence and enjoyment, and trust mediates the relationship between perceived social presence and effectiveness. Also newly tested is the relationship that higher perceived social presence leads to higher website involvement as speculated by Kumar and Benbasat (2002).

(2) Also new to this investigation is an examination of the impact of framing a task as either hedonic or utilitarian in nature, and subsequent impact on perceived social presence, involvement, enjoyment, trust or effectiveness. While no differences were found between hedonic versus utilitarian framing based on questionnaire data, eye-tracking results indicated that users had more fixations and longer viewing times on the hedonic zones over the utilitarian zones. This finding supports the use of multiple methodologies, as well as provides information that supports other researchers (Hassenzahl 2001; van der Heijden 2004) who suggest that website viewing can be a managed perceptual and cognitive process. Depending on the type of task (or frame) presented, the user may choose a different search process for gathering information.

(3) The time allowed for website viewing is another novel contribution as it relates to social presence on websites. Expanding the work by Lindgaard et al. (2006), we found that unlimited time viewing was more satisfactory for users and led to higher perceived involvement, enjoyment, trust, and effectiveness as outcomes of website social presence. It would appear that while "first impressions" are

made quickly, in more complex situations when users want to experience social presence on the website then more time is required.

(4) The combination of framing and time also revealed new and interesting results. For example, users in the 5 second treatment were not impacted by framing, however in the unlimited time treatment hedonic/utilitarian framing significantly impacted behavior. When viewing time is short, then the presence of pictures is especially important to provide information to the user.

Limitations to the research are a mostly student population and the use of a single website. While the Ann Taylor website was carefully chosen and experimentally controlled some of the participants in the study commented that the clothing was not in alignment with their personal style. Hence use of other websites for other types of products or services would increase the generalizability of the findings. In addition, we chose 5 seconds for the limited time viewing condition, increased from 50 milliseconds as used by Lindgaard et al. (2006). While this seemed to work well in the current study, other research might experiment with different viewing times to determine the optimal time required for users to absorb elements as presented on a website.

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APPENDIX: A SAMPLE EXPERIMENTAL WEBSITE WITH HEDONIC ZONES (BLUE) AND UTILITARIAN ZONES (GREEN) OUTLINES