

**WEBSITE CHARACTERISTICS AND WEBSITE SATISFACTION:
ROLE OF COMPUTER SELF-EFFICACY**

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Website Characteristics and Website Satisfaction: Role of Computer Self-Efficacy

Abstract

The objective of the present study was to investigate whether computer self-efficacy of the users has moderating effect on the relationship between website's informativeness and entertainment properties, and website satisfaction. A conceptual framework exhibiting the above relationships was proposed and empirically tested. The websites identified by Shukla, Swami, and Sharma (2010) were used in the present paper. Data was collected through online survey and 500 valid responses were obtained. Multivariate regression analysis revealed significant results showing the moderating effect of computer self-efficacy on the relationship between website satisfaction and informativeness and entertainment properties of websites. The effect was more for entertainment properties than informativeness.

Key words: Informativeness, Entertainment Properties, Computer Self-efficacy, Website Satisfaction

Introduction and Objectives

Fast and dynamic technological change breeds in the demand of broad flexible skills, transferable skills and the related confidence to adapt to new applications and environments (Rush, 1998). In the current scenario, 'information technology literacy' has become the centerpiece of 'professional literacy' and 'workforce readiness' (Resnick & Wirt, 1996). Information in the virtual world comes from the websites. A website comprises information and entertainment characteristics (Shukla, Swami, & Sharma, 2010) which lead to website satisfaction. As demonstrated in many studies, significant correlations have been shown between informativity, playfulness, sociality and computer self-efficacy (Compeau & Higgins, 1995a; Compeau, Higgins, & Huff, 1999; Johnson & Marakas, 2000, Eastin & LaRose, 2000). Individuals feel confused and a loss of personal control when they encounter technology (Sproull, Zubrow, & Kiesler, 1986) and suffer from technophobia (DeLoughry, 1993). People with little confidence in their ability to use computers might perform more poorly on computer-based tasks, thus would be low on computer self-efficacy (Compeau & Higgins, 1995). In

contradiction to the general belief 'the more is better', Seyal, Rahim, & Rahman (2002) showed that there is no empirical evidence to support this assumption of internet usage levels and self-efficacy. Possibly, other factors such as the types of application used, the purpose for using, and the role of satisfaction, could also influence computer self-efficacy and computer anxiety (Sam, Othman, & Nordin, 2005).

The present study investigates the relationship between website characteristics, namely, informativeness and entertainment properties, computer self-efficacy, and website satisfaction. The objectives of the present study are as follows:

1. To propose a conceptual framework exhibiting the relationship between website characteristics, computer self-efficacy, and website satisfaction and then empirically testing the framework.
2. To examine the effect of website characteristics, namely, informativeness and entertainment properties on website satisfaction.
3. To examine the moderating role of computer self-efficacy in the relationship between website characteristics and website satisfaction.

Conceptual Framework

The website is a simulation of an online storefront leading to a virtual shopping experience. Many authors have shown the significance of providing relevant, up-to-date, complete, and trustworthy information in websites (Albert, Goes & Gupta, 2004; Haubl & Trifts, 2000; Lynch and Ariely, 2000). Internet-based electronic shopping environments offer drastically reduced cost of search for information about market offerings (Bakos, 1997; Häubl & Trifts, 2000). Studies have also focused on the contribution of affective feelings like interesting themes, flashy graphics, or appealing website design on website success. Studies have shown that individuals who experience pleasure and joy from using the computer are likely to use it more extensively than others (Davis, Bagozzi, & Warshaw, 1999; Malone, 1981; Webster, 1989). Research has shown that the design of the user interface often impacts the users to use an online service in an enjoyable manner (Chen, Clifford & Wells, 2002; Huang, 2005; Lin, Sheng, & Tsai, 2005). Hoffman and Novak (1996) asserted that users who exhibit high degrees of pleasure

while using a website spend a longer time visiting it and are more likely to revisit it. Research has also found that the perceived entertainment value and informativeness of the website mediates the influence of the online avatars on the satisfaction with the retailer, attitude towards the product, and purchase intention (Holzwarth, Janiszewski, & Neumann, 2006). Website and user characteristics comprising information and entertainment aspects lead to website satisfaction (Shukla, Sharma, & Swami, 2010; Shukla, Swami, & Sharma, 2010). Thus we propose,

Hypothesis 1: The higher the website on informativeness, the higher would be user's perceived online website satisfaction.

Hypothesis 2: The higher the website on entertainment properties, the higher would be user's perceived online website satisfaction.

Hypothesis 3: The higher the informativeness of a website, and higher the entertainment properties of a website, the greater would be user's online website satisfaction.

Among the various individual factors examined in past research on computer-aided technology, the relevance of computer self-efficacy (CSE) has been identified. Based on Bandura's (1982, 1986, 1997) theory of self-efficacy, it follows that the easier a system is to use, the greater is one's perception of self-efficacy and personal control over computer-related knowledge and skills. Computer Self-efficacy refers to individuals' perceptions about their ability to use a computer to perform a computing task successfully (Compeau & Higgins, 1995). However, despite the fact that most of the studies use computer self-efficacy as an outcome variable, research has shown that self-efficacy is also an important moderating variable in the stress process (Bandura, 1997; Grau, Salanova & Peiro, 2000; Jex & Bliese, 1999; Speier & Frese, 1997).

There is a dearth of research revealing the moderating effect of computer self-efficacy on the relationship between website features and website satisfaction. The present study has filled in the research gaps by examining this relationship. Thus we propose,

Hypothesis 4: Computer self-efficacy will have a significant moderating effect on the relationship between informativeness of website and website satisfaction.

Hypothesis 5: Computer self-efficacy will have a significant moderating effect on the relationship between entertainment properties of website and website satisfaction.

We also propose a conceptual framework showing the aforementioned relationships of variables as shown in Figure 1 and then test it empirically.

INSERT FIGURE 1

Method

Participants

Five hundred respondents participated in the study out of which 408 were males and 92 were females. The participants were majorly in the age group of 18–24 (58%) and 25-34 (36%). Around 73% of the respondents had prior experience of using internet for more than four years and 59.4% of them used internet for more than five times a day.

Design

Moderated regression analysis was employed to verify the effect of the moderator variable². Three regression equations were examined for equality of regression coefficients (R^2) (Zedeck, 1971) and R^2 change (Sharma, Durand & Gur-Arie 1981). The equations verified were:

$$WS = \beta_0 + \beta_1 INF/EP \quad (I)$$

$$WS = \beta_0 + \beta_1 INF/EP + \beta_2 CSE \quad (II)$$

$$WS = \beta_0 + \beta_1 INF/EP + \beta_2 CSE \\ + \beta_3 INF/EP \times CSE \quad (III)$$

where, β = regression coefficients

The significance of the overall model was verified by the following criteria:

- (1) Equation II and equation III must be significantly different for CSE to be a moderator variable.
- (2) Equation I and equation II should not be significantly different for CSE to be a pure moderator.
- (3) Equation I, equation II, and equation III should be significantly different from one another for CSE to be classified as a quasi moderator (Sharma et al., 1981).

²WS= Website Satisfaction; INF: Informativeness; EP= Entertainment Properties; CSE=Computer Self-efficacy.

The moderating effect of CSE on the specific relationships was evaluated by the following criteria:

- (1) The regression coefficient of INF/EP is significant and higher in Equation I than III,
- (2) The regression coefficient of CSE is non significant in Equation II,
- (3) The regression coefficient of the interaction of INF/EP and CSE is significant.

Measures

The four-item scale of computer self-efficacy was adapted from Compeau and Higgins (1995). The five-item scale adapted from Chen and Wells (1999) measured informativeness of the website. Five-item entertainment properties scale was adapted from Chen and Wells (1999). Website satisfaction was measured using one-item scale adapted from Parasuraman, Zeithaml, and Berry (1994). Responses were obtained on 1 to 6 Likert Scale. The items of computer self-efficacy, informativeness, and entertainment properties questionnaires were scored on six-point scales ranging from 'very strongly disagree (1)' to 'very strongly agree (6)'. The items of website satisfaction were scored on a six-point scale ranging from 'extremely dissatisfied (1)' to 'extremely satisfied (6)'.

Procedure

The study was conducted using an online survey where a hyperlink of the questionnaire was floated on the internet over a period of 1 month. The survey was designed so that the survey submission was accepted only if all the questions were answered, thus there was no item-level non-response. The websites identified by Shukla, Swami, and Sharma (2010) were used in the present study which were high or low on information and entertainment aspects. Each participant was assigned a website. The participants were instructed to browse the website before proceeding to fill out the survey.

Findings

A preliminary analysis was conducted to examine the psychometric properties of the measures employed in the study. Thus Cronbach's coefficients alpha and descriptive statistics (mean and standard deviations) were computed as reported in Table 1. The results showed high reliability for informativeness (.74), entertainment properties (.81), and computer self-efficacy (.85).

INSERT TABLE 1

Univariate analysis of variance was done to compute the main and interaction effects of informativeness and entertainment properties on website satisfaction. The results as presented in Table 2 reveal significant main effects of informativeness ($F=5.26$; $p<.01$) and entertainment properties ($F=6.24$; $p<.01$) and significant interaction effects of informativeness and entertainment properties ($F=1.39$; $p<.001$) on website satisfaction. Thus, Hypotheses 1, Hypothesis 2 and Hypothesis 3 are accepted. Informativeness accounted for 26% of the variance, while entertainment properties and the interaction of the two website characteristics accounted for 40% of the variance each.

INSERT TABLE 2

Hypothesis 4 and Hypothesis 5 deal with the moderating effects of computer self-efficacy on the relationship between website satisfaction, and informativeness and entertainment properties. The results of multiple regression analysis showing the above relationship are given in Table 3.

INSERT TABLE 3

The results revealed significant quasi moderator effects of computer self-efficacy on the relationship between website satisfaction, and informativeness ($\beta= .59$, $R^2= .33$, $p< .01$) and entertainment properties ($\beta= .58$; $p< .01$). Thus, Hypotheses 4 and 5 are accepted. Equations II and III were significantly different from each other, thus computer self-efficacy had a moderating effect on the relationship of informativeness and entertainment properties with website satisfaction. As Equations I, II and III were also significantly different, the moderator effect was not pure but a quasi effect. The variance explained by computer self-efficacy in the relationship between informativeness and website satisfaction was 33% ($R^2= .33$) and entertainment properties and website satisfaction was 43% ($R^2= .43$). Equation I in Table 3 shows the bivariate relationships between informativeness and entertainment properties, and website satisfaction. The results revealed that R^2 of entertainment properties (.65) was greater than R^2 of informativeness (.33). Thus, entertainment properties of a website play more important role in determining website satisfaction than informativeness of the website.

Discussion

Gaining new customers is much expensive than retaining current customers (Parthasarathy & Bhattacharjee, 1998; Reichheld & Schefer, 2000). Therefore, in order to win the support of customers, exploring how to stimulate the customers for continuous and repeat visits and on-line shopping is a critical issue for the e-commerce businesses. Studies have also revealed the significance of website and user characteristics on website satisfaction and purchase intention (Shukla, Sharma, & Swami, 2010). The present study has also revealed significant main and interaction effects of informativeness and entertainment properties of a website on satisfaction with the website. Thus, if a website is high on information aspects and high on entertainment, then the user's satisfaction with that website will be more. The results also revealed that entertainment properties of a website have more influence on website satisfaction than information aspects.

Eastin and LaRose (2000) analyzed four e-commerce activities, i.e. network shopping, electronic banking, network investment, and on-line services, showing that internet self-efficacy has a significant influence upon them. Bandura (1986) defined self-efficacy as a generative capability in which cognitive, social, and behavioral sub skills must be organized into integrated courses of action to serve innumerable purposes. Murphy, Coover, and Owen (1989) defined computer self-efficacy as one's perception of one's capabilities regarding specific computer-related knowledge and skills. The results of the present study have shown that computer self-efficacy has significant moderator effects when tested for individual components of website characteristics, namely, informativeness of the website and entertainment properties of the website. This implies that the computer self-efficacy of the user interacts with the information and entertainment properties of the website which leads to website satisfaction. Thus, if users perceive themselves competent and efficient to handle the technical aspects of internet and computer, are given a website which is high on information and entertainment aspects, their satisfaction with the website will be more. Results also revealed that satisfaction will be more for the user high on computer self-efficacy if the site is more entertaining than informative. This is in consistency with the earlier studies which define satisfaction as pleasurable fulfillment (Oliver, 1997). Thus, satisfaction is more related to enjoyment aspects than informative aspects.

Limitations

The present study has examined the moderating effect of computer self- efficacy only on one variable, website satisfaction. The websites were classified only in terms of information and entertainment profiles.

Further Research

Further research can be done encompassing the effects of some more personality variables like personal innovativeness, cognitive complexity, extraversion and introversion on website satisfaction, affect, online buying behavior. The websites can also be classified on some more technical dimensions like complexity, user-friendliness, number of hyperlinks, etc.

Managerial Implications

The results aid the academia by showing the moderating effects of computer self-efficacy. For marketers, the present findings suggest the design features: websites that are high on information and entertainment, and target users who are high on computer self efficacy, will enhance website satisfaction leading to repeat visits and purchase from the websites.

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FIGURE

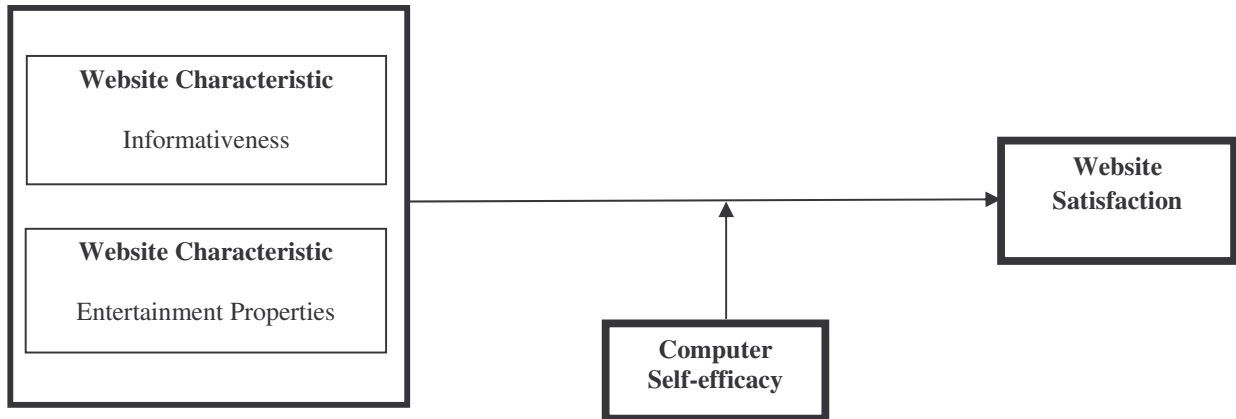


Figure 1 Proposed Conceptual Framework

TABLES

Table 1 Descriptive Statistics and Cronbach’s Alpha Reliability of the scales of Computer self-efficacy, Informativeness, Entertainment Properties and Website Satisfaction.

Variables	Mean	SD	Reliability
Computer Self-efficacy	4.72	.92	.85
Informativeness	4.09	.68	.74
Entertainment Properties	3.73	.62	.81
Website Satisfaction	3.99	.86	
N= 500			

Table 2 Summary of Results of ANOVA with Website Satisfaction as Dependent Variable

Variables	df	MS	F	η_p^2
Informativeness	20	1.76	5.26**	.26
Entertainment Properties	31	2.09	6.24**	.40
Informativeness X Entertainment Properties	140	0.46	1.39**	.40
Error	308	.334		
N=500; **p<.01				

Table 3 Summary of Regression Analysis Showing Moderating Effects of Computer Self-efficacy on the Relationship between Website Satisfaction, and Informativeness and Entertainment Properties

Step/ variable	B	SE (B)	β	R ²	ΔR^2	F	t	Tolerance
Informativeness								
WS= $\beta_0 + \beta_1$ INF (I)								
INF	.15	.01	.57	.33	.32*	237.68*	15.41*	1.00
WS= $\beta_0 + \beta_1$ INF + β_2 CSE (II)								
INF	.14	.01	.57	.32	.32*	118.73*	15.38*	.99
CSE	-.04	.01	-.02				-.42	.98
WS= $\beta_0 + \beta_1$ INF + β_2 CSE + β_3 INF X CSE (III)								
INF	.05	.05	.21	.33	.32*	80.89*	1.08	.99
CSE	-.10	.05	-.44				-2.01*	.98
INF*CSE	.01	.00	.59				1.96*	.98
Entertainment Properties								
WS= $\beta_0 + \beta_1$ EP (I)								
EP	.11	.01	.65	.65	.42*	366.92*	19.15*	1.00
WS= $\beta_0 + \beta_1$ EP + β_2 CSE (II)								
EP	.11	.06	.65	.42	.42*	183.43*	19.12*	1.00
CSE	-.01	.01	-.02				-.62	.99
WS= $\beta_0 + \beta_1$ EP + β_2 CSE + β_3 EP X CSE (III)								
EP	.05	.03	.30	.43	.43*	125.74*	2.06*	.99
CSE	-.10	.04	-.44				-2.60*	.98
EP*CSE	.00	.00	.58				2.53*	.99
N=500; *p<0.05; WS= Website Satisfaction; INF= Informativeness; EP= Entertainment Properties; CSE= Computer Self- efficacy								