

A Cost-Benefit Analysis of Website Design and Its Effect on Revisit Intention

Paulus Insap Santosa
Department of Information Systems
National University of Singapore, Singapore
Email: santosa@comp.nus.edu.sg

Abstract

This paper presents a research in progress that investigates a cost-benefit analysis of website design and its effect on user revisit intention. It borrows the Social Exchange Theory in which visiting a website is considered as an exchange transaction where users may get benefits and incur some costs. To assess user revisit intention, this paper also borrows the Theory of Reasoned Action. It is hypothesized that user intention to revisit is positively determined by the benefit the users get from their previous visit and negatively determined by the incurred cost. Proposed methodology is discussed.

Keywords

Cost-benefit analysis, Social Exchange Theory, revisit intention, Theory of Reasoned Action

INTRODUCTION

Researchers have conducted a lot of study on Web design. Huizingh (2000) focused on two aspects of Website quality: content and design. Content refers to 1) the information in which commercial and non-commercial content distinction should be clear, 2) the feature comprises transaction-related features, or 3) the services that they are suppose to entertain Website visitors. He also mentioned about subjective perception of the content that can be measured as the degree to which the website is considered informative. Design refers to the way the content is made available to the users. It comprises three measures: quality of the navigation structure as perceived by Website visitors, multimedia capabilities, and presentation style.

When users visit a Website, they may find interesting stuffs that will prolong their visit. On the other hand, several things may also force users to stop their visit, or to move to other Websites. In term of cost-benefit analysis, users in the first case seem to get more benefit than the incurred cost. The reverse situation happens in the second case, where the incurred cost is greater than the perceived benefit. When this case happens, users may terminate their visit, and may never visit that website again. This is to argue that website revisit bounded by cost-benefit analysis. Therefore, this study addresses the following research questions:

- What is the theoretical basis that can be used to explain cost-benefit analysis of a Website surfing activity?
- How can we relate a cost-benefit analysis of previous Website visit to a Website revisit?

THEORETICAL BACKGROUND AND RESEARCH MODEL

In exploring user revisit intention, we use two theories from sociology and psychology, particularly the *Social Exchange Theory*, or SET, (Molm 1997) and the *Theory of Reasoned Action*, or TRA, (Fishbein and Ajzen 1975). Drawing on SET, we argue that users are bonded by a cost-benefit analysis related to Website design elements. These beliefs about cost and benefit of online activity may, then, influence attitude toward website revisit, and subsequently influence revisit intention.

We argue that when users surf a Website, they are bounded by a cost-benefit analysis. Thus, we divide underlying beliefs associated with attitude into beliefs about perceived online benefit and perceived online cost. Perceived online benefit refers to the perception that users will get benefit from surfing a Website. The perceived benefit includes learning new knowledge thus shaping up their mental model (Borgman 1999), enjoyment (Csizkszentmihalyi 1990), and felt empowered (Zhang and Dran 2000). Perceived online cost refers to the perception that the users will incur cost when they surf a Website. The incurred costs include slow download (Turban and Gehrke 2000), plug-in incompatibility, privacy, and security concern (Rose et al. 1999), navigation difficulties that lead to disorientation (Ransom et al. 1997) and digression problem (Foss 1989).

The TRA includes beliefs about normative influence. Subjective norm refers to “the perceived social pressure to perform or not to perform the behavior” (Ajzen 1991, p. 188). Karahanna et al. (1999) found that attitude was more important, while subjective norm became less important, with increasing experience. However, since users might be the first timer, and they surf a Website because they want to find information as suggested by their peers, we include informational belief as one of belief construct in the conceptual model.

Web design elements are defined as any information, components, and features used in developing Websites. These elements may influence users online behavior through the reinforcement of their salient beliefs. Many studies, with different emphasizes, have been conducted to identify design elements that pleased users (e.g. Aladwani and Palvia 2002).

Zhang and Dran (2000) categorize website design elements into motivators and hygiene factors. The motivators are those elements contributing to user satisfaction. The presence of these elements will enhance user satisfaction, while their absence not necessarily contributes to user dissatisfaction. The presence of the hygiene factors makes a Website useful and serviceable, while their absence contributes to users' dissatisfaction. Apart from these two categories of Web design elements, presented content may also influences users' belief and motivation. By using a Website content we can influence our peers to visit a Website. Figure 1 depicts the research model to answer the above research questions.

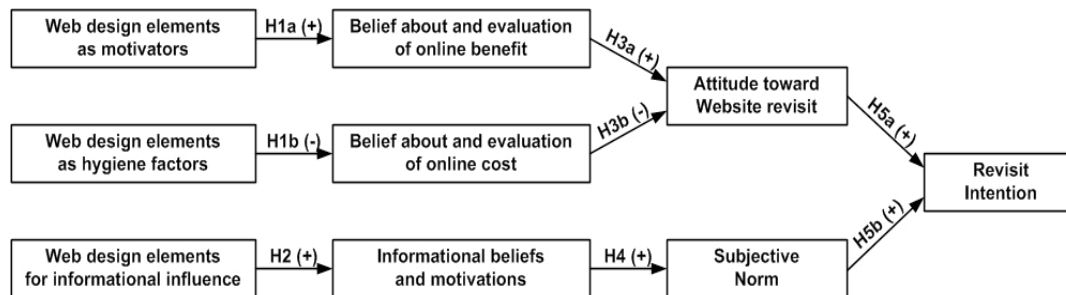


Figure 1. Research model.

HYPOTHESES

According to Zhang and Dran (2000), categories under motivators include enjoyment, cognitive outcome, credibility, and user empowerment. Enjoyment is an “act of receiving pleasure from something” (<http://www.cogsci.princeton.edu/cgi-bin/webwn>). It is an extrinsic motivator when it comes to the domain of IT (Davis et al. 1992). Csizkszentmihalyi (1990), with his flow construct, has captured an individual’s subjective enjoyment of the interaction with the technology that can significantly predicts attitude and extent of technology use (Trevino and Webster 1992). Cognitive outcome relates to learning (Zhang and Dran 2000). Learning (or training) relates to the formation of a mental model (Borgman1999) of a particular system, e.g. a Website. With better mental model, users may have better performance on certain tasks (Olfman and Shayo 1997) relates to identity, recognition (Zhang and Dran 2000), and reputation (Lafferty and Goldsmith 1999). User empowerment is a source of joyfulness, and encourages users to explore websites in-depth (Nielsen, 2002). As such, we hypothesize that

H1a: *Perceived motivators would have a positive impact on the belief about online benefit.*

Technical aspects, navigation, privacy, security, and information organization fall into hygiene factors (Zhang and Dran 2000). Technical aspects relate to the basic function of Websites. It includes how fast information (textual and graphical) is downloaded, plug-ins and browsers compatibility, and link functionalities. We realize that not all Websites are easy to navigate. They often confusing that may cause disorientation. The way information is organized may cause problems to users, i.e. digression and art museum problem (Foss, 1989). Giving away personal information may threaten users’ privacy and security. However, if they perceived that their personal data would be kept secret, they probably are willing to giving away their personal data. In other word, the more perceived hygiene factors are present in a Website, the less worry the users about Website functionalities, compatibility, privacy and security threats. Based on these assertions, we hypothesize that

H1b: *Perceived hygiene factors would have a negative impact on the belief about online cost.*

The Internet provides its users with a huge volume of any kind of information. However, due to various reasons, not all information is up to date and trustworthy. By referring to a specific content, their peers could give a suggestion to go to a Website owned by certain company or individuals rather than others. We hypothesize that

H2: *Information content will have a positive impact on the belief about informational influence.*

Benefit is something that promotes well-being (<http://www.websters.com>). Benefit can “increase the frequency of the behavior on which [users] are contingent,” (Molm 1997, p. 17). Several benefits the users can get from their online activity include positive cognitive outcome where users can shape up their mental model to ease the next navigation task (Dillon 1991), felt entertained (Zhang and Dran 2000), and enjoyment (Agarwal and Karahana 2000). Online activity enjoyment can predict intention to return (Koufaris 2002). As such, we argue that the more users get the benefit from previous web surfing, the more likely they will use the same website in the future.

On the other hand, cost “decreases the frequency of the behavior on which [users] are contingent,” (Molm 1997, p. 17). Slow download speed is just one problem users have to deal with. Slow download speed leads to users frustration (Campbell and Maglio 1999). More experience users are more prone to the slow download speed than do less experience users (Nah 2003). On the other hand, the more costly the previous Web visit, the least likely users will revisit that Website. Therefore, we hypothesize that

H3a: *Favorable belief and evaluation about online benefit will have a positive impact on attitude toward website revisit.*

H3b: *Favorable belief and evaluation about online cost will have a negative impact on attitude toward website revisit.*

Users are often ask opinion from different experts to help them in decision making process, A study by Glily et al. (1998) revealed that users decision is influenced by information they obtain from experts. Very often, worth-of-mouth is a powerful tool in spreading both good and bad news. However, as the users’ expertise increase, users are less dependent on worth-of-mouth. In an online shopping, information provided by the merchants can influence individuals’ views, behavior, comments, and ratings of products. As such, we hypothesize that

H4: *Informational belief and motivation will have a positive impact on subjective norm.*

Finally, based on various applications of the TRA, and its extension, i.e. the Theory of Planned Behavior (Ajzen 1991), and the Technology Acceptance Model (Davis et al 1989), we hypothesize that

H5a: *Attitude toward website revisit positively influences revisit intention.*

H5b: *Subjective norm positively influence revisit intention.*

OPERATIONALIZATION

For the purpose of this study, Web design elements categorization by Zhang and Dran (2000) will be used. Table 1 shows the theoretical constructs used in this proposed study and how these constructs are operationalized.

Table 1. Constructs operationalization.

Theoretical Construct	Operational Definitions	Source
Belief about and evaluation of perceived online benefit	Belief regarding online benefit and evaluation of having online benefit	Ajzen (1991), Zhang and Dran (2000)
Belief about and evaluation of perceived online cost	Belief regarding online cost and evaluation of the incurred cost	Ajzen (1991), Zhang and Dran (2000)
Informational belief and motivation	Belief regarding other opinion about using a website and motivation to comply with them	Ajzen (1991)
Attitude toward website revisit	Users’ favorable/disfavorable view regarding website revisit	Mathieson (1991)
Revisit intention	Probability, likelihood, willingness to revisit the same website	Song and Zahedi (2001)

PROPOSED METHODOLOGY

In order to answer the above research questions that are expressed on the mentioned hypotheses, a survey will be conducted. In order to have a good external validity we will try to survey several groups of people. Up to this moment, the questionnaire items are being designed.

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