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Nikhil Bاندodkar

Clemson University, nbandod@g.clemson.edu

Renu Singh

South Carolina State University, rsingh2@scsu.edu

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THE IMPACT OF WEBPAGE VISUAL CHARACTERISTICS ON CONSUMER'S INITIAL TRUST IN E-VENDORS

Nikhil R. Bandodkar
Clemson University
nbandod@g.clemson.edu

Renu Singh
South Carolina State University
rsingh2@scsu.edu

ABSTRACT

In making decisions regarding transacting with web-based vendors, consumers typically consider the uncertainty about vendor behavior or the perceived risk of having personal information misused by vendors. To mitigate these concerns vendors convey cues to improve consumer trust at a very early stage. Initial trust plays a central role in helping consumers overcome perceptions of risk and insecurity and makes them feel comfortable about interacting and transacting with an e-vendor. Therefore, initial trust is critical to both researchers and practitioners. The present paper describes a research-in-progress study that concentrates on webpage visual complexity and order as central factors in the design of web pages to enhance consumers' initial trust in an online e-vendor.

Keywords

Webpage design, initial trust, situational normalcy, webpage complexity, webpage order, elaboration likelihood model

INTRODUCTION

Online purchasing has increased exponentially over the last decade and a half (Van der Heijden, Verhagen, and Creemers, 2003). Research in e-commerce has investigated why customers choose online medium over traditional brick and mortar stores and why consumers keep returning to a particular e-vendor site (Schlosser, White, and Lloyd, 2006). Research has also investigated the role of individual differences, technology features and trust on customer retention (Bosnjak, Galesic, and Tuten, 2007; Chen, Hsu, and Lin, 2010; Haubl and Trifts, 2000; Chen and Barnes, 2007). However, a key cog in the chain of events leading to customer retention is the first impression that a web site's homepage has on the potential customer. This is crucial given that most customers arrive at an e-vendors site by using a search engine. Frequently, customers browse multiple e-vendor sites before settling on a particular e-vendor. In selecting an e-vendor, the customer relies on a quick assessment of whether they want to conduct business with the merchant based on, among other factors, whether or not they trust the vendor. Thus a favorable initial trust assessment is crucial for the e-vendor to procure business from online users. This raises the question about the potency of web visual design in creating initial trust in the e-vendor (Hausman and Seikpe, 2009). In this paper, we describe a proposed study to investigate how the visual design characteristics of an e-vendor's home page affects a user's initial trust in the vendor. Specifically, the aim of this study is to investigate the role of webpage order and complexity on user's initial trust in an e-vendor.

LITERATURE REVIEW

Trust and its Importance for E-vendors

Previous research on buyer-seller trust has conceptualized it in a variety of ways. Crosby, Evans, and Cowles (1990) define trust as confidence that the trusted party will behave in the interest of the customer. Ganesan (1994) describes it as a person's willingness to rely on a partner emanating from their belief in the partner's competence, benevolence and integrity. Schurr and Ozanne (1985) describe trust as a belief that the trustee's promises are reliable and obligations will be fulfilled. Zaheer, McEvily, and Perrone (1998) include expectations of predictability, fairness and non-opportunistic behavior in their definition of trust. Trust is thus seen as a multidimensional construct that encompasses 1) general belief regarding the trustworthiness of the other party, 2) specific beliefs regarding the other party's integrity, competence and benevolence, and 3) an affect manifesting itself as confidence in the other party (Gefen, Karahanna, and Straub, 2003).

Trust is important in e-commerce transactions between a buyer and seller. Using the theory of reasoned action McKnight, Cummings, and Chervany (1998) demonstrate how a buyer's trusting beliefs in a seller leads to trusting intentions which in turn result in trust-related behaviors such as purchasing from the seller. Similarly, Jarvenpaa, Tractinsky, and Vitale (2000) extrapolate from TRA and view trust as an antecedent belief that creates a positive attitude towards transaction behavior leading to transaction intentions. Reichheld and Scheffer (2000) also endorse the prominent role of trust in e-commerce

transactions "to gain the loyalty of customers, you must first gain their trust. That's always been the case, but on the Web, where business is conducted at a distance and risks and uncertainties are magnified, it's truer than ever. On-line, customers can't look a sales clerk in the eye, can't size up the physical space of a store or office, and can't see and touch products. They have to rely on images and promises, and if they don't trust the company presenting those images and promises, they'll shop elsewhere" (pg. 107). Gefen (2000) describes how buyers, when faced with uncertainty regarding seller behavior, use trust as a mechanism for subjectively ruling out possible undesirable behavioral outcomes by the sellers. By reducing the set of possible undesirable behaviors, buyers are then better able to make rational assessments of the seller and determine whether they want to engage in transaction behavior with the seller. Thus, trust plays a critical role in helping consumers overcome perceptions of risk and uncertainty and engage in trust related behaviors with web based vendors. Furthermore, perceptions of risk and uncertainty may be especially prominent when a user interacts with an unfamiliar vendor's website making initial trust an important determinant of subsequent trust related behaviors with the vendor (McKnight, Choudhary, and Kacmar., 2002). The current research paper focuses on initial trust in vendor.

The Antecedents of Trust

Extant literature on trust describes institution-based trust and disposition to trust as the primary antecedents of trust formation. Institution-based trust is the belief that the structural conditions necessary to enhance the likelihood of achieving a successful or intended outcome exist. Literature on institution-based trust in the e-commerce context focuses on beliefs regarding the technological and legal safeguards provided by a website. Such safeguards have been shown to produce institution-based trust in the web consumer. Two dimensions of institution-based trust are described in literature: structural assurance and situational normalcy.

Structural assurance is the user's belief that the website has structures such as guarantees, regulations, promises, legal recourse, or other procedures in place to promote success (McKnight et al., 2002). As an example, a website with protections such as prominently displayed data privacy assurances (Google checkout), third party SSL certification logos (VeriSign), links to web vendor rating sites (such as eBiz & Bizrate) and prominently displayed contact information and links to online support would be considered to be high in web-related structural assurance. When interacting with such websites a user is more likely to feel protected from loss of privacy, identity, or money.

Situational normalcy is the user's belief that the web-based environment is in proper order and success is likely because the situation is normal or favorable. "A consumer who perceives high situational normalcy would believe that the web based environment is appropriate, well ordered, and favorable for doing personal business" (McKnight et al., 2002 pg. 339). Existing literature also espouses that the higher a user's belief about the situational normalcy, the more likely it is that they would believe that vendors in the web environment have the attributes of competence, benevolence, and integrity. From an initial trust point of view, the dimension of competence is influenced the most when users first interact with the website. In the first few minutes of interaction with a new website, users evaluate the structure and visual normalcy of the website. This interaction helps them to create initial evaluations about the vendor, of which vendor competence, as exhibited through the websites look and organization, is a critical dimension (Koufaris and Hampton-Sosa, 2004). A user's initial impression of a website (and vendor competence) is akin to the first impression that an interviewer has of candidates appearing for a job interview. A very casually dressed candidate leaves something to be desired while an overdressed candidate may be perceived as trying too hard. Structural assurances may have a positive effect on the benevolence and integrity dimensions of situational normalcy during initial interaction with the website while the competence dimension dominates the assessment of situational normalcy.

Another antecedent of trust described in literature is the user's disposition to trust. Disposition to trust is the extent to which a person displays a tendency to be willing to depend on others across a broad spectrum of situations (McKnight et al., 2002). Disposition to trust is endemic to individuals and is not built in a gradual manner through ongoing interactions. It is not situation specific and is described as "an individual's inclination to display faith in humanity and to adopt a trusting stance toward others" (Gefen, 2000). A person with high disposition to trust believes that people are trustworthy and that better results will be obtained by trusting them, irrespective of whether this trust is justified (McKnight et al., 1998). Some (Gefen, 2000) have likened disposition to trust to naiveté. Disposition to trust has been shown to be particularly important in the early stages of a relationship when the parties are still mostly unfamiliar with each other (Rotter, 1971).

In investigating the central thesis of this paper that the visual characteristics of a website have an effect on a user's initial trust in vendor, some lessons from the cognition based trust literature are particularly relevant. The cognition based trust literature posits that trusting beliefs may form as a result of first impressions (Meyerson, Weick, and Kramer, 1996), i.e. before parties have meaningful information about each other, via categorization and illusions of control processes (McKnight et al., 1998). Based on commitment-trust theory, the categorization process describes how when individuals are faced with uncertainty or lack first hand information they place more trust in people that are similar to themselves and assess

trustworthiness based on stereotypes (Morgan and Hunt, 1994). Additionally, in the absence of first-hand information, individuals create illusions of control by forming trusting beliefs. To do this individuals actively search for and observe cues that may confirm the other person’s trustworthiness (Langer, 1975). When such cues are found, individuals form beliefs (often over inflated) about that person's trustworthiness.

Prior web experience is another antecedent of trust formation that emerges from the e-commerce literature. In previous research involving e-commerce sites, greater experience using web sites has been shown to promote trust in web sites (Jarvenpaa, 2000; McKnight et al., 2000). Web experience impacts trust by influencing both components of institution based trust. It is suggested that web experience is positively related to institution-based trust because experience provides the consumer a feeling that dealing with the web is proper and normal, which is represented by situational normalcy. Also, web experience will assure most people that the web is safe, positively affecting structural assurance (McKnight et al., 2002).

The Elaboration Likelihood Model of Persuasion

In the chain of events leading from website visual characteristics to initial trust formation, we briefly introduce the perspective provided by the elaboration likelihood model (ELM) of persuasion (Petty and Cacioppo, 1986). After a careful review of the literature on persuasion, Petty & Cacioppo found two distinct routes to persuasion. The first type of persuasion results from careful and thoughtful considerations of the true merits of the information that is presented to them in support of an advocacy (or stimuli). In this processing mode, also termed as the central route or heightened “elaboration-likelihood”, people allocate considerable cognitive resources to the evaluation of the stimuli. They scrutinize and elaborate the arguments presented in the stimuli and draw inferences from this elaboration which informs their attitude toward the stimuli. In cognitive psychology literature such analysis is termed as “controlled”, “deep” or “effortful”. The second type of persuasion derived from the “lazy organism” concept is termed as “peripheral route” processing. In this mode, people are likely persuaded without scrutiny as a result of simple cues (normality of message or attractive source) in the stimuli. Such analysis of the stimuli is described as “automatic”, “shallow”, “heuristic-driven” or “mindless”. A notable point in the theory is that people may be more likely to engage in peripheral processing and switch to central processing only when the stimuli is atypical and requires more elaboration. In other instances people may develop an unfavorable attitude toward stimuli that require them to engage in central processing.

MODEL & RESEARCH PROPOSITIONS

We take a theory informed approach to proposition development by drawing on literature elucidated in the literature review section. This study is based on a scenario where users make initial trust related judgments based on the visual features of the website's homepage. It is assumed that customers utilize a search site to arrive at the e-vendors site and make assessments in a short amount of time. It is also assumed that customers are goal driven and do not spend a substantial amount of time evaluating the website. The research model proposed for this study is illustrated in figure 1.

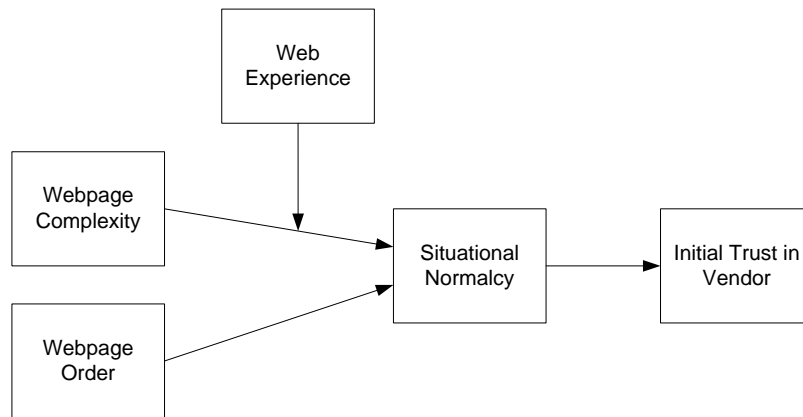


Figure 1. Research Model

Initial trust in vendor is defined as trust in an unfamiliar vendor where a user does not yet have credible, meaningful information or affective bonds with the vendor (McKnight et al., 1998). From, the literature on initial trust we highlight

situational normalcy as a predictor of initial trust in vendor. Situational normalcy is a user's belief that the webpage environment is in proper order and task success is likely because the situation is normal or favorable. In evaluating whether a desired task will be completed successfully in a dyadic relationship, a person evaluates the competence of the other party in being able to fulfill its commitments. This is similar to the dynamic in a two person team selection process where a selector might select a team mate (selectee) based on information he has regarding the selectee's competence. In the absence of any prior information the selector will place initial trust based on the selectee's perceived normality. In the same vein vendor websites that are seen as normal will engender greater trust in the vendor. Thus,

Proposition 1: Situational normalcy is positively related to initial trust in vendor.

Using the definition provided by Geissler, Zinkhan, and Watson (2001) web page complexity is defined as the amount and diversity of the different types of webpage elements (text, graphics and links) present on a webpage. Increasing the number of elements on a page increases the stimulus that is perceived by the users. According to the elaboration likelihood model of persuasion, this causes the users to move from peripheral processing of stimulus cues to a more central processing mode. Employing more cognitive resources towards figuring out the information contained on the website can be undesirable for users in a goal oriented state and may lead them to view the website unfavorably. This relationship will be true especially for users with lesser web experience, as in the absence of experiential cues they will have to resort to central processing far earlier than experienced users. Hence, we propose that

Proposition 2: User web experience moderates the relationship between webpage complexity and situation normalcy such that webpage complexity is negatively related to situational normalcy for users with lower web experience.

On the other hand, users with more web experience may demonstrate a higher threshold for web page complexity where, in fact, lower complexity may be unappealing. These users will react positively to increasing website complexity up to a certain level. Beyond this level, experienced users will begin to demonstrate an unfavorable attitude due to website complexity as they exhaust their reliance on experiential cues and begin to place greater strain on their cognitive resources to interpret the information on the website. Thus,

Proposition 3: User web experience moderates the relationship between webpage complexity and situation normalcy such that webpage complexity will demonstrate an inverted U relationship with situational normalcy for users with higher web experience.

Webpage order is defined as the logical organization (layout) and clarity of webpage content and information. The order of the website is related to the degree of organization of the web page content, as reflected in the extent of coherence, congruity, legibility, and clarity it exhibits. Research suggests that there is a natural tendency in humans to prefer those environments that are most favorable for understanding (i.e., having coherence and legibility) (Deng and Poole, 2010). Webpage order is also related to the logical organization of the webpage and by extension the intuitiveness and understandability of the webpage organization (Deng and Poole, 2010). Given that situation normalcy is described as the user's belief that the web-based environment is in proper order and success is likely because the situation is normal or favorable we propose that,

Proposition 4: Webpage order is positively related to situational normalcy.

PROPOSED METHODOLOGY

The proposed model will be tested using a controlled laboratory experiment. Webpage visual stimulus will be manipulated by varying the levels of webpage visual complexity and order using the methodology employed by Nadkarni and Gupta (2007) and Deng and Poole (2010).

Manipulating Webpage Visual Features

To investigate the effect of webpage visual complexity and order on initial vendor trust, it is necessary to first select e-commerce sites with products and content characteristics that users have experienced during the online purchasing activities. This is necessary to eliminate any confounding biases due to specific user experiences or affect. A pilot test will be conducted to select the appropriate content for the webpage that will be designed for the experiment.

To manipulate webpage visual complexity we will utilize Geissler et al.'s (2001) study on the effect of the amount of text, number of links, and number of graphics on user's perceived complexity of webpage. Increasing levels of complexity will be designed into the experimental stimuli by manipulating the number of links, number of graphics, and amount of text. According to definition, webpage order is related to the logical organization, coherence, and clarity of webpage content. Webpage order will be manipulated across increasing levels of order using the procedure described by Deng and Poole (2010). This includes the identification of the webpage elements to be included such as company identification, primary navigation, content navigation and content area; determining the logical position of each webpage element according to the

conventions of website design; and manipulating order by placing these elements in a free-form layout where each element is displaced from its logical position (low level of order) to grouping similar or related elements and differentiating unrelated elements (high order).

Experimental Procedure

A sample of students will participate in a laboratory experiment. The experiment will use 5(complexity) X 3(order) for a total of 15 different configurations of webpage visual stimuli. Subjects will be asked to examine a webpage stimulus (selected randomly) for an equal amount of time. The appropriate time duration for subjects to view the webpage stimuli will be determined during the pilot test. At the end of the experiment, users will be asked to rate their perception of webpage visual complexity and order, situational normalcy and initial trust in vendor. Additionally, users will answer questions pertaining to their web experience and disposition to trust.

Since the study is about visual webpage features, complexity and order will be the only two features that will be manipulated during the experiment. Other trust related visual features associated with structural assurances may be included in all web page configurations; however, the number and type of structural assurances will not be varied across the different webpage configurations.

Sample

The sample for this study will comprise of undergraduate students. The choice of student subjects is made for the following reasons. First, students represent a significant population of web users and their perceptions regarding trust and responses to visual stimuli can provide valuable insight for the research question in this study. Second, similar studies have reported the need for a significant sample size (in excess of 400) to achieve sufficient power for the study. Using student sample it will be possible to achieve an accessible and suitably large sample size. Finally, there is little evidence to expect the student sample to differ significantly from the general population with respect to the trust forming mechanisms described in this study.

Measurement

Measurement instruments will be developed by adapting existing valid and reliable scales. Measures of initial trust in vendor and web experience will be developed by adapting scales by McKnight et al. (2002). Measures for situational normalcy and propensity to trust (control variable) will be adapted from the scales developed by Gefen (2003) and McKnight et al. (2002). Measures of perceived webpage visual complexity will be adapted from Geissler et al.'s (2001) measure of perceived webpage complexity. Measures of perceived webpage visual order will be adapted from the measure of webpage order developed by Deng and Poole (2010). The perceived measure of visual stimuli described above will be used to confirm whether the objective visual stimuli manipulations have the intended effect on a subject's perception of visual complexity and order.

IMPLICATIONS AND CONCLUSION

For research, the implication of this study is that in spite of providing structural assurances such as data privacy assurances, third party SSL certification logos and links to web vendor rating sites, there can be a lack of perceived initial trust due to abnormal webpage visual features. The role of situational normalcy is presented as one that enables customers to gauge whether websites are typical or atypical. This idea of customers having notions of normality can be further explored in future research, particularly with respect to web experience. For practice, the visual features described here have significant implications. If anything, it suggests that e-vendors must ensure appropriate complexity and order in their homepage designs to appear trustworthy. Thus it is especially important to ensure that the visual design of web pages is consistent across different browsers as web pages that appear visually appropriate on one browser but more complex and disorderly in another browser may have a negative effect on the e-vendors online sales.

Finally, this research highlights the role of two specific webpage visual design characteristics that contribute to the formation of user's evaluation of situational normalcy in a typical purchase scenario. In doing so, it suggests two design attributes that can be used for webpage design in practice and, thus, addresses calls in the IS research community to form synergies between research and practice.

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