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Effect of Presentation Flaws on Users' Perception of Quality of On-Line Stores' Web Sites: Is it Perception that Really Counts?

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ABSTRACT

Presentation flaws are abundant in web sites, but there has been no study to determine how presentation flaws affect consumers' perceptions of quality of an on-line store, trust in the store, and ultimately the intention to purchase. The theoretical foundation stems from various relevant streams of literature: trust and credibility, impression formation, and impression management. A laboratory experiment examined three main factors, incompleteness, error, and poor style, and used 160 student subjects in a completely balanced, fully factorial design (2x2x2). It was found that error, incompleteness, and poor style affected consumers' perceived quality of the web site. Furthermore, it was found that the relationship between the factors and perceived quality was mediated by the perception of the flaws. The perception of flaws rather than the actual flaws influenced users' perception of quality.

Keywords

Presentation flaws, perception, web site quality, trust, intention to purchase.

INTRODUCTION

Many of the activities performed over the Internet involve financial and confidential transactions; it is of crucial importance that users perceive such systems to be credible. Credibility, often equated with believability, is composed of trustworthiness (perceived accuracy and goodness) and expertise (perceived knowledge, skills, and competence of the developer) (Fogg & Tseng, 1999).

Before divulging personal or confidential information, users need to judge a web site worthy of trust. Hoffman, et al. (1999) suggest that the main reason consumers are resistant to providing personal information and to buying on-line is a fundamental lack of trust (Garbarino & Johnson, 1999; Doney & Cannon, 1997).

PRESENTATION FLAWS

While credibility and trust can be enhanced by users' perceptions of reliable and accurate information being supplied by the computer, flaws in the information

provided may serve to destroy that trust. In some extreme cases, flaws could prevent users from using the system in a meaningful manner (Molich & Nielsen, 1990).

For this research, presentation flaws are grouped into three categories: (1) Poor Style, (2) Incompleteness, and (3) Error. Poor style includes graphical and visual elements such as backgrounds that interfere with page text, inconsistent word and line size and spacing, and improperly formatted tables. Incompleteness addresses missing structural elements of the web site, including images that fail to load, "under construction" pages, and tables with empty cells. The third type of flaw, error, includes typographical, grammatical, and factual errors.

LITERATURE REVIEW

Relevant to the study of the effect of presentation flaws is research on trust and credibility, impression formation and impression management.

Trust

Trust has been defined in various ways, often depending on the context in which it appears (Rousseau, et al., 1998). Sultan and Mooraj (2001) found that managers distinguish between two types of trust environments: trust in the relationship among businesses, consumers, and other stakeholders; and trust in the web site and its functionality. The view adopted in this research is of the latter kind, trust in the on-line store via its web site.

Impression Formation

Research on impression formation dates back to 1946 (Asch) and considers the way people perceive others as a process by which an integrated impression is formed from stimulus information that is provided. Early models of impression formation (Asch, 1946; Anderson, 1965) assume that when an individual is presented with information about a previously unknown or unfamiliar person, the individual creates a sort of mental slot in which information is received and processed.

Research has shown that attributes that are negative and that have extreme evaluative meaning weigh more heavily on an individual's impression than neutral items, because of their novelty and unusual nature (Fiske, 1980).

One reason that impression formation is so important is that, according to Cotlier (2001), the first seven seconds that a visitor views a firm’s web site are the most crucial as it is within that time period that a prospective customer can be turned off for good.

Impression Management

Impression management, also referred to as self-presentation, is the process whereby individuals seek to control the impressions that other persons form of them (Goffman, 1959; Rosenfeld et al., 2002). The information provided on the web site tends to be imperfect and incomplete and thus requires the consumer to make inferences based on the information presented (Jarvenpaa & Tractinsky, 1999).

RESEARCH MODEL

This study explores the effects of flaws on several outcomes. The research model for this study is shown in Figure 1. From left to right, the user’s perception of the different presentation flaws (poor style, incompleteness and error) affects the users’ perception of quality of the on-line store. This perceived quality in turn affects the user’s level of trust in the on-line store which in turn influences the users’ intention to purchase from the on-line store.

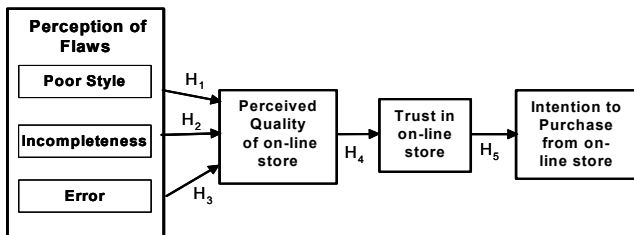


Figure 1. Research Model

Because it is strategically crucial to manage consumers’ impressions of the web site, firms need to ensure that any factors that may convey a lack of integrity are reduced. Lynch and Horton (2002) recommend that to convey to users that what the firm is offering is accurate and reliable, high editorial and design standards need to be achieved; “a site that looks sloppily built, with poor visual design and low editorial standards, will not inspire confidence” (p.25).

They further state that the overall organization of the site will have the greatest impact on the user’s experience visiting the web site. Furthermore, because of the higher importance of early information and negative information (Anderson, 1965; Fiske & Taylor, 1991), it is important that on-line stores present web sites that are properly formatted and that have an overall organized look.

H1: A web site that is perceived to be in poor style will result in lower perceived quality of the on-line store than a web site that is not perceived to be in poor style.

On-line stores can manage the impressions that

consumers form of the store’s web site by establishing legitimacy. Cotlier (2001) asserts that a firm can establish legitimacy by providing users with a finished product in terms of its web site; this can be achieved by avoiding broken links, “coming soon” pages, and images that do not load. Broken links shake the user’s confidence with respect to the user’s validity and timeliness of the web site’s content (Lynch & Horton, 2002). The web site serves as a signal to the consumers; for this reason, Lynch and Horton (2002) warn against letting a site go stale, that is, not checking periodically whether the links to pages outside of the firm’s web site are still working. It is important for on-line stores to maintain high standards for their web sites; otherwise the impressions that users have will fall (Rosenfeld, et al., 2002). Users are less likely to come back to the site if they are disappointed with their initial visit; it is always more difficult to attract users back to the site once they have been disappointed (Fiske & Taylor, 1991).

H2: A web site that is perceived to be incomplete will result in lower perceived quality of the on-line store than a web site that is not perceived to be incomplete.

As Molich and Nielsen state, “spelling errors distract users and make them suspect a generally poor quality” of a system (1990, p.344).” Moreover, spelling errors can be used to form impressions about competency and attention to detail (Liu & Ginther, 2001). In computer-mediated communication, communication style (for example, word choice, paralinguistic cues, typographic information) can beget impression-relevant information; for example, if messages contain several errors, it may be interpreted that the sender is careless or incompetent (Lynch & Horton, 2002). Moreover, Goffman (1959) warns “... we must be ready to examine the dissonance created by a misspelled word...” (p.55) and that “...the impression of reality fostered by a performance is a delicate, fragile thing that can be shattered by very minor mishaps.” (p.56).

H3: A web site that is perceived to contain errors will result in a lower perceived quality of the on-line store than a web site that that is not perceived to contain errors.

Trust is increasingly becoming a significant strategic issue in organizational web site development. Not only is it fragile, as Goffman (1959) stated, but it is also hard to generate, easily lost, and once lost, difficult to regain (Hanowski et al., 1994; Muir & Moray, 1996; Shneiderman, 2000). Fogg and Tseng (1999) concentrate on the trust that forms between individuals and that is mediated by technology: “trust indicates a positive belief about the perceived reliability of, dependability of, and confidence in a person, object, or process” (p.81). It follows that reliability, dependability, and confidence will increase its perceived quality. Furthermore, McKnight et al., (2002) assert that perceived web site quality should positively influence the users’ trusting beliefs and trusting intentions as using the web site provides the first

experiential feel of the on-line store's presence and confirms first or initial impressions: "if consumers perceive the Web site is of high quality, they will assume that the Web vendor has positive attributes and will form trusting intentions" (p.341). Thus,

H4: Perceived quality of the on-line store will influence the user's trust in the on-line store.

Trust facilitates cooperative behavior (Shneiderman, 2000). By trusting someone or something, individuals make themselves vulnerable in a variety of ways. However, individuals trust when, although they are aware that they are vulnerable to harm from others, they do not believe that these others would harm them even if they could (Friedman et al., 2000). Technology designers aim to inspire a cognitive state of trust in users so that users will engage in trusting behaviors, which will enable the transaction to progress without problems (Cassel & Bickmore, 2000).

Low trust leads to hesitation or failure to complete a purchase or disclose personal information (Cassel & Bickmore, 2000; Jarvenpaa & Tractinsky, 1999; Doney & Cannon, 1997). Gefen (2000) examined the relationship between familiarity and trust on electronic commerce and found that trust was a good predictor of intention to purchase. Others demonstrate that trust influences intentions to purchase (Dwyer, et al., 1987; Ku, et al., 2002).

H5: Trust in the on-line store will influence the user's intention to purchase from the on-line store.

RESEARCH METHODOLOGY

Hypothesis testing was carried out using a between-subjects 3-way fully factorial laboratory experiment, with 20 subjects per cell. Participants were used only once and were randomly assigned to one of eight experimental conditions. This between-subject design avoids any order or learning effects and prevents contamination of subjects' responses on the main task due to manipulation check questions. Eight different versions of the web site were designed, with all possible combinations of presentation flaws (each of 3 flaws absent or present).

The experimental materials consisted of a fictitious web site, with which participants were asked to find specific information on the web site and record the answers. To answer the questions participants had to browse the web site. The task was followed by an on-line questionnaire with questions pertaining to dependent variables measuring perceived quality, trust, and intention to purchase, as well as control variables (computer experience, web experience, and computer efficacy) and three manipulation checks (one for each condition).

Data Analysis

Reliability analyses were calculated for the scales used. All alphas were well over .8, showing adequate reliability

for further analysis.

Perception of Flaws

The participants' perceptions of the three types of presentation flaws were recorded by their answers to the manipulation check questions. We were reassured that when a flaw was present, participants perceived the flaw. However, when the flaw was not present participants seemed wary of declaring the site to be flawless. We speculate that participants were reluctant to commit to either the presence or the non-presence of a flaw, for example, in the Incomplete, No Errors, Good Style cell, the score with the highest frequency was 4 (12 out of 20 participants), which suggests that participants did not feel comfortable declaring an absence of flaws. Instead they preferred to "straddle the fence." The same phenomenon occurred with the Complete, No Errors, Poor Style and the Complete, Errors, Poor Style treatments.

RESULTS

Perception of poor style and perception of errors were found to be significant predictors of perceived quality of the site ($\beta = -.274, p = .001$ and $\beta = -.556, p = .000$, respectively). Contrary to our predictions, perception of incompleteness was not found to be a significant predictor of perceived quality of the site.

Regression was used to test Hypotheses 4 and 5. In testing H4 (perceived quality affects trust), a model with site quality as independent variable was significant ($F = 141.562, p = .000$), and explained 63.9% of variance in trust in the on-line store. Perceived quality of the site was found to be a significant predictor of trust in the on-line store ($\beta = .654, t = 7.050, p = .000$).

In testing H5 (trust affects intention to purchase), a model with trust as the independent variable was significant ($F = 159.337, p = .000$), and explained 49.9% of the variance in intention to purchase from the on-line store.

Table 1 summarizes the findings and indications of support by the data.

| H | Expectation | Result |
|----------------|---|---------------|
| H ₁ | Perceived Site Quality: Perceived Good Style > Perceived Poor Style | Supported |
| H ₂ | Perceived Site Quality: Perceived Complete > Perceived Incomplete | Not Supported |
| H ₃ | Perceived Site Quality: Perceived No Errors > Perceived Errors | Supported |
| H ₄ | Perceived Site Quality as an antecedent of Trust | Supported |
| H ₅ | Trust as an antecedent of Intention to Purchase | Supported |

Table 1. Summary of Findings

ACTUAL FLAWS VS. PERCEPTION OF FLAWS

In addition to the analysis presented above, we also investigated whether it is the perception of the flaw rather than the actual flaw that influences the users' perception of quality of the web site. Furthermore, a test of mediation was used to determine whether the perception of the flaws

mediates the relationship between the flaws and the users' perception of quality.

Participants who were presented with a complete site and perceived it as such reported higher mean scores of perception of quality (3.31) than participants who perceived the site to be incomplete (1.04). Seventy-six participants out of a possible eighty who were presented with an incomplete site perceived it as incomplete. The mean score for perception of quality was 1.87. Interestingly, the mean scores for perceived quality for the incomplete site perceived as such are higher than the mean scores for perceived quality of the complete site perceived as incomplete.

Participants who were presented with a site without errors and perceived it as such reported higher mean scores of perception of quality (3.40) than participants who perceived the site to include errors (2.13). Participants who were presented with a site with errors and perceived the errors reported lower mean scores for perceived quality (1.73) than participants who were presented with the web site with errors but did not perceive them (3.67).

Participants who were presented with a good style site and who perceived it as such reported higher mean scores of perception of quality (3.80) than participants who perceived a poor style (1.61). Participants presented with a poor style site and perceiving it as poor reported lower scores on perceived quality (1.68) than those who did not perceive a poor style (3.25).

From the analysis above, what appears to matter is the participants' perception of some flaw rather than the actual occurrence of it. In all instances, whether or not the flaw was present it was the perception of the flaw that seems to have lowered the scores on perception of quality.

The next section provides the results of analysis of how the perception of flaws may mediate the relationship between the main factors and users' perception of the web site's quality. As per Baron and Kenny (1986), to test for mediation it is necessary to estimate the three following regression equations: (1) the mediator on the independent variable, (2) the dependent variable on the independent variable, and (3) the dependent variable on both the independent variable and on the mediator.

To test the effect of the factors and the perception of flaws on perceived quality of the site, a multiple regression model with perceived quality of the site as the dependent variable was significant ($F=28.36, p=.000$), and explained 50.8% of variance in perceived quality of the site. Both the perception of poor style and the perception of errors were found to be significant predictors of perceived quality of the site ($\beta=-.459, p=.000$ and $\beta=-.217, p=.006$, respectively).

In order to establish mediation, (1) the independent variable must affect the mediator in the first equation, (2) the independent variable must affect the dependent variable in the second equation, and (3) the mediator must

affect the dependent variable on the third equation (Baron & Kenny, 1986). The conditions all hold in the predicted direction, and we can state that the perception of the flaws mediates the relationship between the main factors and the dependent variable, perceived quality of the site.

These results illustrate that it is not the presence of a flaw, but rather the perception of the flaw, that affects users' perception of the site's quality. Actual flaws (whether they exist or not) must be perceived as such to affect the site's perceived quality. See Figure 2 for a revised model.

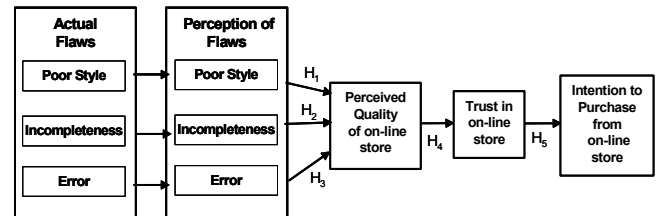


Figure 2. Revised Model

DISCUSSION

This research examined the effects that the perception of errors, incompleteness, and poor style had on users' perceptions of web site quality. More favorable perceptions of quality were reported for sites perceived to be without errors than sites that were perceived to contain errors. As stated in the literature, spelling errors can make users suspect a poor quality of a site.

The perception of poor style also affected users' perception of site quality. More favorable perceptions of quality were reported for users who were presented with good style than for those exposed to poor style.

As predicted, perceived quality of the site was a significant predictor of trust. Users who perceived the site favorably were more likely to trust the site. Consistent with this, users who perceived the quality of the site to be low were less likely to trust the site.

Trust was found to be a significant predictor of purchase intention. Just as predicted in the literature, users who trust the web site are more likely to purchase from the site than users who do not trust the site.

Finally, our results show that the perception of, rather than actual existence of flaws, affects users' perception of site quality. Whether errors, incompleteness, or poor style were actually present did not directly contribute to the users' perception of quality; rather what affected their perception of quality was their perception of the flaw. Because it is the perception of flaws on web sites rather than the actual presence flaws that affects users' quality perceptions it is fundamental for web stores to pay attention to how the features they present are perceived, as opposed to only following generally accepted web site design procedures.

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