The Impact of Color and Product Congruency on User Trust in B2C E-Commerce

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Abstract

User concerns regarding the safety of business-to-consumer (B2C) e-commerce transactions remain a hindrance to its continued expansion. Drawing upon the color and schema-congruity theories, this study examines the role of website design color and product line in influencing user trust in B2C e-commerce websites. Results indicate that color has an impact on trust, with blue engendering greater trust than green or black. Also, websites with schema-congruent color-product combinations engendered greater trust in the user than websites with schema-incongruent color-product combinations. The association of website design color with schema-congruent product lines can serve to enhance user trust in B2C e-commerce websites.

Introduction

With over a quarter of the world population and three-quarters of the North American population having access to the Internet, e-commerce is fast becoming an integral part of our professional and personal lives (Internet World Stats, 2010). The bulk of e-commerce transactions are in the business-to-business (B2B) sector and conducted through Electronic Data Interchange (EDI) systems, while the remaining are in the business-to-consumer (B2C) sector and transacted through the World Wide Web. Though small in comparison to the B2B sector, B2C e-commerce has registered an average annual growth rate of 20% for the past few years and double-digit growth is projected until 2013 with a market size of $250 billion (Mulpuru & Hult, 2010; Reitsma, 2010). It has overtaken traditional brick-and-mortar retail sales for product lines such as books, clothing, computer equipment, travel, electronics, office equipment, and sporting goods (US Census Bureau, 2010). The economic downturn has not negatively impacted B2C e-commerce, as the convenience offered by online shopping, coupled with comparison shopping agents that make available lower prices to the consumer, have led to online retail sales remaining steady or increasing for most product lines (Rainie & Smith, 2009; Wansink, 2009).

While B2C e-commerce has been growing in size and scope, there have been increasing concerns regarding the safety of financial and personal information transferred over the Internet, as well as potential misuse of such information by online merchants (Horrigan, 2008; Princeton Survey Research Associates, 2005; Wansink, 2009). Recent reports indicate significant increases in global phishing and malware attacks (Microsoft Security Intelligence

Report, 2009) and one-tenth of online users have suffered financial losses due to security breaches and data misuse (Kountz, 2009). These issues have resulted in a "trust gap" between consumers and online merchants to the extent that over three quarters of consumers are reluctant to divulge their personal or financial details to online merchants and over a quarter of consumers have discontinued online purchases (Fox & Beier, 2006; Horrigan, 2008; Kountz, 2009). Though website designers have implemented numerous functional techniques to enhance user trust in e-commerce websites (Lauer & Deng, 2007; Lee & Turban, 2001; Lim, Sia, Lee, & Benbasat, 2006), these have had not the desired impact (Horrigan, 2008; Kountz, 2009). Based on the color and schema-congruity theories, this empirical study examines the role of website design color and its interaction with the product line in influencing user perceptions of trust in a website.

The remainder of this paper is structured as follows. The trust literature pertaining to B2C e-commerce is first reviewed. This is followed by a review of color theory and its potential role in shaping user perceptions of trust towards a website. Drawing upon the schema-congruity theory, the possible interaction of color with the website product line is discussed. Testable hypotheses are then presented, the experimental method outlined, and the research methodology described. The results are reported and analyzed. The paper concludes with a discussion on study limitation and avenues for further research.

B2C E-Commerce and Trust

In an organizational context, trust has been defined as "*the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or confront that other party*" (Mayer, Davis, & Schoorman, 1995, p 712). When adapted to the B2C e-commerce context, the vulnerability of the consumer in the hands of the online merchant has been emphasized – for example, trust has been defined by researchers as the "*Psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another*" (Walczuch & Lundgren, 2004) and as the "*Willingness of a consumer to be vulnerable to the actions of an Internet merchant in an Internet shopping transaction, based on the expectation that the Internet merchant will behave in certain agreeable ways, irrespective of the ability of the consumer to monitor or control the Internet merchant*" (Lee & Turban, 2001).

Researchers have also viewed e-commerce trust as an inherent belief – for example Gefen, Karahanna, and Straub (2003) defined trust as "*The expectation that other individuals or companies with whom one interacts will not take undue advantage of a dependence upon them*" and Stewart (2003) conceptualized trust as the "*Belief about the extent to which a target is likely to believe behave in a way that is benevolent, competent, honest and predictable*". Acknowledging the multifaceted nature of trust, McKnight, Choudhury, and Kacmar (2002) proposed that institution-based trust (an individual's perceptions of the structural characteristics of the online environment) and disposition to trust (the general propensity of an individual to trust others) led to trusting beliefs in the competence, benevolence, and integrity of the online merchant.

Drawing upon these conceptualizations, research has indentified various functional and design factors that could influence user perceptions of trust in B2C e-commerce websites. The former includes features that directly address privacy and security concerns, such as branding alliances with reputable websites and organizations, third-party Web assurance seals, and peer endorsements (Kimery & McCord, 2002; Lauer & Deng, 2007; Lee & Turban, 2001; Lim et al., 2006). Providing unbiased information about competing products, user feedback and discussion boards, and customization based on user preferences and purchase patterns also serves to allay user perceptions of risk (Gefen & Straub, 2003; Urban, Sultan, & Qualls, 2000). Apart from these functional features, website design aspects such as usability, ease of use, visual attractiveness and style, and navigational structure can serve to reduce user concerns (Casaló, Flavián, & Guinalíu, 2008; Everard & Galletta, 2005; Vance, Elie-Dit-Cosaque, & Straub, 2008). Other recommended best practices include avoiding confusing language and images, obtaining informed consent for use of confidential information, and providing users with detailed information regarding return policies, dispute resolution and mediation services, privacy practices, security precautions, and compensation procedures (Shneiderman, 2000; Suh & Han, 2003). While prior research has focused primarily on the functional aspects of e-commerce websites, this research study examines the role of color and product line in influencing user perceptions of trust in e-commerce websites.

Color Theory

Humans are subject to very specific emotional and behavioral patterns when confronted with color. Color plays a pivotal role in shaping beliefs, perceptions, and actions (Johnson, 2007; Nicholson, 2002; Wagner, 1991; Walker, 1991). Prior research has indicated that color enhances motivation by up to 80%, learning by 75%, and willingness to read by 80% (Green, 1984). More often than not, color forms the critical factor in any visual experience and can make the difference between the acceptance and rejection of an object.

Human response to color has its roots in childhood conditioning and physiology. For example, consider the color red. Red symbolizes danger – a red traffic light is the signal to stop and a red light on a device indicates malfunction. Children are taught to associate red with danger; these lessons of childhood persist into adulthood and become part of their subconscious behavioral pattern. Physiologically, the color red results in an increased secretion of adrenaline and other stress hormones, provoking in humans the "fight or flight" response, leading to increased heart rate and blood pressure, as well as a perceptible sharpening of the senses (Grossman & Wisenblit, 1999; Kido, 2000; Singh, 2006).

Another color that evokes specific behavioral patterns in humans is blue. Blue has an association with trust, security, credibility, calmness, and loyalty (Johnson, 2007; Nicholson, 2002; Wagner, 1991; Walker, 1991). This association is reflected in blue being the preferred uniform color for security and service personnel and the recommended dress code for professional meetings and job interviews. Physiologically, the color blue leads to an increased secretion of tranquilizing hormones, leading to lowered pulse rate, breathing, and reduced perspiration. Due to its calming and relaxing effects, blue is the preferred color for formal restaurants, where a longer stay for the customer usually translates into larger meals

(Kido, 2000; Singh, 2006). The color green has an association with life, growth, nature, environment, health, youth and vigor (Nicholson, 2002; Johnson, 2007). The physiological effects of green are similar to blue: calming and relaxing. For obvious reasons, red is considered to be a "warm" color, while blue and green are considered to be "cool" colors (Costigan, 1984; Davidoff, 1991).

Among the other major colors, black is associated with anger, unhappiness, mourning, power, and wealth, and yellow with joy, happiness, and hope. Yellow is the most visible color to the human eye, and physiologically it arouses cheerfulness and stimulates mental activity. White has connotations close to blue: goodness, safety, and purity; while orange is viewed as vibrant, warm, and cozy.

As color plays a leading role in shaping human thoughts and perceptions, the dominant color used to design a website could influence user perceptions of trust in the website (Sasidharan & Dhanesh, 2007). For example, a color such as blue, with its connotations of trust, security, and credibility can be expected to invoke greater trust in the user than say, black, with its connotations of anger, unhappiness, and mourning, or green, with its connotations of life, growth, and the environment.

Schema-Congruity Theory

Schemas refer to structured knowledge about the attributes of an event and encompass related emotions, feelings, and attitudes. Humans unconsciously develop schemas based on prior knowledge and experience of events (Goodman, 1980; Stayman, Alden, & Smith, 1992). When faced with a new episode of a previously developed schema, they subconsciously draw upon their schema-based knowledge to evaluate the new episode - such schema-based processing permits efficient information processing as there is no need to re-evaluate the new episode (Fiske & Pavelchak, 1986). For example, if an instructor has an existing schema as to what constitutes an "excellent" student; the instructor evaluates the degree of "excellence" of new students based off his or her pre-existing schema.

The congruity theory proposes that humans aspire for harmony and constancy in their actions, beliefs, feelings, and perceptions (Osgood & Tannenbaum, 1955). When consumers are faced with a new event that is in congruent (or compatible) with an existing schema, they are able to efficiently process the event (Baker, 2001; Dacko, 2008). Schema-congruity reduces the information-processing and cognitive load on the consumer and results in a transfer of affective feelings from the existing schema to the new instance of the schema. On the other hand, a new event that does not match an existing schema can place additional information-processing and cognitive load on the consumer. Such schema-incongruity (or incompatibility) can result in confusion, psychological distress, and negative evaluations about the event (Hastie, 1980; Mandler, 1982; Meyers-Levy & Tybout, 1989).

The marketing of retail consumer products has relied on specific color-product advertising, packaging, and presentation schemas to enhance product appeal (Grossman & Wisenblit, 1999). For example, businesses dealing with nature, food, and health have long used green backgrounds for their logos and building design, and their products are often advertised and

presented in different shades of green (e.g., The Body Shop, Wal-Mart Neighborhood Markets, Whole Foods, Greenpeace). Financial establishments investing in environment-friendly products describe such products as "green" (e.g. "green" trust funds). Similarly, the color blue has long been marketed as the color of "corporate" America as is reflected in its use by blue-chip corporations (e.g., IBM, Microsoft, Chase Bank). The ubiquitous and often intrusive nature of these traditional color-product schemas have led to their becoming ingrained in our subconscious mind, thereby establishing schema-congruence between specific colors and products (Grossman & Wisenblit, 1999). Thus, when a consumer encounters a billboard in green extolling the virtues of a health food (schema-congruence), it is something that is acceptable, however the same billboard in blue (schema-incongruence) can impose additional information-processing and cognitive load on the consumer leading to confusion and negative evaluations about the health food.

In the context of B2C e-commerce websites, certain colors might engender greater trust, however if their interaction with the product line fosters schema-incongruity, the resulting psychological distress and cognitive load on the consumer can lead to negative trust perceptions. For example, using green as a design color for a health-oriented, nature-friendly organic foods website (schema-congruity) might result in higher user trust when compared to using blue as the design color, as blue is not the traditional color-product schema for nature-linked products (schema-incongruity).

Research Hypotheses

A user-oriented B2C e-commerce website will incorporate the judicious application of multiple design elements: visual appeal (comprising color, typography, white space, and layout), presentation (comprising text, animation, video, audio, and images), navigational structures, interactivity, personalization, and accessibility (Brinck & Gergle, 2002; Gao, 2004). Visual appeal is created primarily through color; well-designed websites have an overarching color theme referred to as the dominant design color. As color shapes perception, inspires emotion, and influences behavior, the dominant color used to design a website could influence user perceptions of trust in the website; hence,

H1: *The dominant color used to design a B2C e-commerce website will influence user perceptions of trust in the website.*

The color blue is associated with trust, credibility, and loyalty; green with life, nature and youth, and black with anger, unhappiness, and mourning. When used as the dominant design color in an e-commerce website, it is expected that blue will engender higher trust than green, and green will engender higher trust than black. Thus,

H2a: *Blue as the dominant design color in a B2C e-commerce website will engender higher perceptions of trust than green.*

H2b: *Green as the dominant design color in a B2C e-commerce website will engender higher perceptions of trust than black.*

A website having a schema-incongruent, color-product combination places additional information-processing and cognitive load on the user, leading to psychological distress and negative trust perceptions of the website, when compared to a website having a schema-congruent, color-product combination, hence,

H3: *A B2C e-commerce website having a schema-congruent, color-product combination will engender higher perceptions of trust than a website having a schema-incongruent, color-product combination.*

An experimental study was conducted using five simulated B2C e-commerce websites: three dealing with banking products and two with outdoor-activity products.

Research Methodology

Experimental Design

A 2X2 factorial design comprising four simulated e-commerce websites was used in the experimental study. These were: (1) a banking website having blue as the dominant design color (referred to as BB) (2) a banking website having green as the dominant design color (referred to as BG) (3) an outdoor-activity website having blue as the dominant design color (referred to as OB), and (4) an outdoor-activity website having green as the dominant design color (referred to as OG). Apart from the two banking websites included in the 2X2 factorial design (BB and BG), there was a third banking website with black as the dominant design color (referred to as BL). Figure 1 depicts the 2X2 factorial design with the corresponding experimental conditions: BB, BG, OB, and OG.

Figure 1: 2X2 Factorial Design

		Color	
		Blue	*Green*
Product Context	*Banking*	**BB**	**BG**
	Outdoor	**OB**	**OG**

The banking websites were modeled after that of a popular commercial bank; it included information regarding standard financial products such as savings and checking accounts, CDs, loans, mortgages, and refinancing. All three banking websites (BB and BG that formed

part of the factorial design, and BL) were identical in all respects other than for the dominant design color (blue for BB, green for BG, and black for BL). The two outdoor-activity websites (OB and OG) provided information regarding mountaineering and hiking products. Here again, apart from the color (blue for OB and green for OG), the two websites were identical in all respects. Between the banking and outdoor-activity websites, apart from content (and color, where necessitated by the design), care was taken to ensure that all design elements were identical (including number of pages, layout, and navigational structure). Each webpage was of the same length and had approximately the same number of words delineated into the same number of paragraphs. Based on prior discussions, the banking website having blue as the dominant design color (BB) and the outdoor-activity website having green as the dominant design color (OG) would be schema-congruent, whereas the banking website having green as the dominant design color (BG) and the outdoor-activity website having blue as the dominant design color (OB) would be schema-incongruent.

Experimental Procedures

The five experimental websites were password protected to ensure control over participants and confidentiality of responses. Participants were employees of several mid-sized organizations and involved in administrative and clerical activities. Participation was voluntary and participants were provided with the hyperlink and password required to access the experimental website. The introductory webpage was common to all websites and was scripted to randomly allocate participants to one of the five experimental websites. This random allocation of participants to treatment conditions ensured control for alternate explanatory variables that could otherwise influence user perceptions of trust.

Data regarding the demographic background of participants as well as the individual difference variables of prior web and e-commerce experience, personal innovativeness, disposition to trust, and perceptions of website quality (McKnight et al. 2002) were collected. Participants were asked to browse all the pages of their allotted website for approximately twenty minutes after which they were provided with a questionnaire that measured their trust beliefs. Based on McKnight et al. (2002), trust was measured as the belief that users had in the competence, benevolence, and integrity of the online merchant. In all cases, well-validated questionnaires, adapted to suit the experimental context were used (see Appendix for measures).

Data Analysis and Results

Of the 123 participants, 11 had to be eliminated, as they could not complete their browsing session due to technical issues or had not completed the questionnaire. Of the remaining 112, experimental conditions BB, OG, and BL had 22 participants each, and experimental conditions BG and OB had 23 participants each. The demographic background of participants and the correlations among the experimental variables are shown in Table 1.

The trust score was highest for experimental condition BB [banking website with dominant design color blue] (Mean=4.83, SD=1.45), followed by experimental conditions OG [outdoor-activity website with dominant design color green] (Mean=4.30, SD=1.49) and OB

[outdoor-activity website with dominant design color blue] (Mean=3.54, SD=1.23). The lowest trust scores were for experimental conditions BG [banking website with dominant design color green] (Mean=2.80, SD=1.20) and BL [banking website with dominant design color black] (Mean=2.77, SD=1.22) (see Table 2). A simultaneous comparison of means between experimental conditions did not reveal any significant differences in demographics between the groups, nor were there any significant differences in the individual difference variables of web and e-commerce experience, personal innovativeness, disposition to trust, and perceptions of site quality.

Table 1: Correlations, Means, and Standard Deviations (N=112)

		1	2	3	4	5	6	7	8	9	Mean	SD
1	Age[1]	1									36.13	10.72
2	Gender[2]	.09	1								0.46	.50
3	Education[3]	.04	-.11	1							1.58	1.13
4	Web Experience	-.28**	.01	.04	1						5.84	3.59
5	E-commerce Exp	-.25**	-.03	-.01	-.12	1					4.43	2.97
6	Innovativeness	-.28**	-.18*	-.06	-.01	.14	1				4.01	1.69
7	Disposition to Trust	-.22*	.04	-.22*	.01	-.05	.10	1			3.72	1.81
8	Site Quality	-.08	.06	.07	-.05	.11	-.07	.07	1		4.14	1.75
9	Trust	-.19*	.09	-.25**	-.09	-.12	.10	.23*	-.09	1	3.64	1.53

[1] *Age in years*
[2] *Coded as: 0 - Male, 1 - Female*
[3] *Coded as: 0 – High School; 1 – Assoc. Degree; 2 – Undergrad; 3 - Graduate*
** *Correlation significant at the .01 level;* * *Correlation significant at the .05 level*

Table 2: Trust Means for Experimental Conditions

	Color	Product	Mean	SD	N
2 X 2 Factorial Design	**Blue**	Banking (BB)	4.83	1.45	22
		Outdoor Activity (OB)	3.54	1.23	23
		Total (Blue)	4.17	1.48	45
	Green	Banking (BG)	2.80	1.20	23
		Outdoor Activity (OG)	4.30	1.49	22
		Total (Green)	3.53	1.53	45
	Total	Banking	3.80	1.60	45
		Outdoor Activity	3.90	1.41	45
		Total (Overall)	3.85	1.53	90
	Black	Banking (BL)	2.77	1.22	22

Table 3: Test of Between-Subjects Effects (DV: Trust)

Source	F-value	p-value
Color	5.03	.03*
Product	0.12	.73
Color X Product	24.22	.01**

* p-value significant at the .05 level; ** p-value significant at the .01 level

Table 4 - Comparison of Trust Means for Banking Websites

Comparison	Mean Diff.	p-value
BB vs. BG	2.04	.01**
BB vs. BL	2.06	.01**
BG vs. BL	0.02	1.00

* p-value significant at the .05 level; ** p-value significant at the .01 level

A 2 X 2 (Product X Color) between-subjects factorial ANOVA conducted on user perceptions of trust for the four experimental conditions in the factorial design (i.e. BB, OB, BG, and OG) indicated a significant main effect for color ($F = 5.03$, $p < .05$) (see Table 3). Hence, H1 [*The dominant color used to design a B2C e-commerce website will influence user perceptions of trust in the website*] is supported. From Table 2, it can be seen that participants who had experimental websites with blue as the dominant design color (Mean = 4.17, SD = 1.48) had significantly higher perceptions of trust that those with green as the dominant design color (Mean = 3.53, SD = 1.53). Also, a one-way ANOVA conducted on user perceptions of trust between the three banking websites (i.e. BB, BG, and BL) indicated a significant between-groups effect ($F = 10.00$, $p < .01$). A post-hoc Bonferroni test for simultaneous comparison of means between the three banking websites (i.e. BB, BG, and BL) found a difference in user perceptions of trust between the BB and BG experimental conditions, significant at the .01 level (see Table 4). The group with blue as dominant design color had higher perceptions of trust than the group with green, thus H2a is supported [*Blue as the dominant design color in a B2C e-commerce website will engender higher perceptions of trust than green*]. However, there was no significant difference between the BG and BL experimental conditions, thus H2b is not supported [*Green as the dominant design color in a B2C e-commerce website will engender higher perceptions of trust than black*].
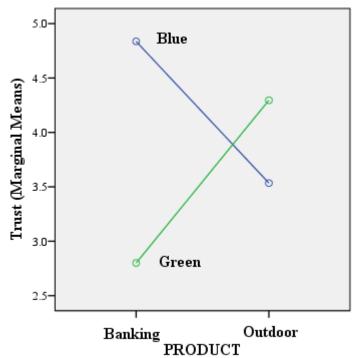
Figure 2: Interaction between Color and Product

From the between-subjects factorial ANOVA, it is seen that there is an interaction effect between color and product, significant at the .01 level (see Table 3 and Figure 2). With blue as the dominant design color, the banking website BB (representing schema-congruence) had significantly higher perceptions of trust than the outdoor-activities website OB (representing schema-incongruence). Likewise, with green as the dominant design color, the outdoor activity website OG (representing schema-congruence) had significantly higher perceptions of trust than the banking website BG (representing schema-incongruence). Thus, H3 is supported [*A B2C e-commerce website having a schema-congruent, color-product combination will engender higher perceptions of trust than a website having a schema-incongruent color-product combination*].

Discussion

Concerns regarding the security of online transactions and the integrity of online merchants remain one of the major hindrances to the continued expansion of B2C e-commerce. This research study finds that the dominant color used to design an e-commerce website influences user perceptions of trust in the website. In addition, a combination of the color and the product line offered by the website influences user perceptions of trust, with schema-congruent color-product combinations engendering greater trust than schema-incongruent color-product combinations.

The overall trust that participants had in the four websites that made up the factorial design (BB, BG, OB, and OG) amounted to 3.85, less than the midpoint of the 7-point Likert scale used to measure trust. The highest value of trust (experimental condition BB at 4.83) is only marginally above the mid-point of this scale. This is consistent with recent surveys that highlight the "trust-gap" existing between consumers and online merchants. E-commerce websites are viewed by many as an information gathering source (through product reviews, consumer discussions forums, and price comparison shop-bots) rather than as a purchase point – which for them, still remains the brick-and-mortar store. The functionalities that were intended to create trust in the user attracted more "eyeballs", but were not overly successful in engendering trust.

Though not directly related to the research hypotheses, the correlations paint an interesting picture: younger participants had significantly more web and e-commerce experience, and were more innovative in exploring and trying out new e-commerce websites. They were more inclined to trust their fellow humans and had significantly higher perceptions of trust in the experimental websites than older participants. Also, more educated participants had lower perceptions of trust than their less educated counterparts.

Overall, the results emphasize the viability of using color as a means of increasing user trust in e-commerce websites. In the context of online banking, the color blue, with its connotations of trust, credibility, and loyalty, engendered higher trust in the user that the color green, with its connotations of life, nature and youth, or black with its connotations of anger, unhappiness, and mourning. Though black engendered least trust in the user, it is only marginally less than the trust engendered by green. In addition to its connotations of anger, unhappiness, and mourning, black is also viewed as representative of power, wealth, and

sophistication (Wagner, 1991; Walker, 1991), and this latter association could have mitigated the effects of the former.

The ubiquitous and often intrusive marketing and advertising campaigns used to promote products have inculcated in our psyche, schema-congruence between specific colors and products (Grossman & Wisenblit, 1999). These ingrained concepts of color-product schemas are carried over to the online context. The results of the study show that while blue engendered higher trust in the context of an online banking website, it did not have the same impact for an outdoor-activity website. The additional cognitive processing load imposed on the user by the perceived schema-incongruence of the latter led to decreased trust. Likewise, the color green engendered higher trust for an outdoor-activity website than for a banking website due to the perceived schema-congruence of the former and its absence for the latter. During the design phase, website designers address color issues, however it is more from an aesthetic perspective targeted at enhancing overall visual appeal rather than with the explicit intention of influencing user trust. The results of this study indicate that color in combination with a schema-congruent product line can enhance user trust in an e-commerce website.

Limitations

User perceptions of color can have cultural or national dimensions – for example, the Chinese regard blue as representative of immortality and red as representative of pleasantness (Madden, Hewett, & Roth, 2000; Nicholson, 2002). Thus care needs to be taken in extending the results of this in study to different social, cultural, and national contexts. Though the experimental websites were modeled after those of commercially available sites, participants were aware that these were "dummy" sites, and this knowledge could have influenced their responses.

Participants were randomly assigned to experimental conditions to negate the differential impact of demographic and individual differences amongst them. Post-experimental analysis of the data indicated that there were no statistically significant differences between the experimental groups; however individual differences always remain a concern. The sample size for the study is relatively small, it is imperative that further research be conducted using a larger sample size.

Future Research

It has been argued that the additional cognitive processing associated with schema-incongruence might actually lead some consumers to spend extra time deciphering and mastering the marketing material, leading to their understanding the product better and actually purchasing it. Thus, in certain contexts, a moderate level of schema incongruence might have more of the desired impact than schema-congruence (Mandler, 1982). Future research could examine whether this approach would work in an online environment, given that the user can easily surf to another website when faced with schema-incongruence, something that is not possible in an offline context.

While trust plays a major role in influencing user interaction with e-commerce websites, it need not translate into user purchases. Future research needs to examine the impact of color and product congruency on user purchase behavior such as actual purchase, intention to purchase, and willingness to pay (Lopes & Galletta, 2006; Shergill & Chen, 2005). In addition, the impact of color and product congruency on customer satisfaction and loyalty could be examined (Schaupp & Belanger, 2005).

As indicated earlier, color can have cultural or geographic orientations. E-commerce websites are global entities and with an increasing number of online merchants offering products to an international audience, it is imperative that future research examine the cultural aspect associated with color and trust. This study examines color and its interaction with the product line, however, in an actual website the "net trust" engendered in the user would depend on a combination of design elements - such as its usability, ease of use, navigational structure, visual attractiveness and style. In a real-world website, color and product line could interact with these design elements to create varying degrees of trust. Future research can examine the interaction of color and product line with other web design elements used in the website.

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Appendix: Study Measures

Web Experience:
On an average, in a week, how many hours do you browse the Internet/World Wide Web?

E-commerce experience:
On an average, in a week, how many times do you make an online purchase?

Personal Innovativeness (McKnight et al., 2002)
1. I like to explore new Web sites.
2. When I hear about a new Web site, I often find an excuse to go visit it.
3. Among my peers, I am usually the first to try out new Internet sites.
4. In general, I am not interested in trying out new Web sites.
5. When I have some free time, I often explore new Web sites.

Disposition to Trust (McKnight et al., 2002)
1. In general, people really do care about the well-being of others.
2. The typical person is sincerely concerned about the problems of others.
3. Most of the time, people care enough to try to be helpful, rather than just looking out for themselves.

Perceived Site Quality (McKnight et al., 2002)
1. Overall, this site worked very well technically.
2. Visually, this site resembled other sites I think highly of.
3. This site was simple to navigate.
4. On this site, it was easy to find the information I wanted.

Trust (Holsapple & Sasidharan, 2005; McKnight et al., 2002)
1. I would characterize this online merchant as honest.
2. This online merchant is one that keeps promises and commitments.
3. I believe this online merchant is sincere and genuine.
4. I believe that this online merchant would act in my best interest.
5. If I required help, online merchant would do its best to help me.
6. My needs and desires are very important to this online merchant.
7. I believe this online merchant is very capable of performing their job.
8. I feel very confident about this online merchant's skills.
9. I believe that is online merchant is very knowledgeable.

Biography

Sharath Sasidharan is an assistant professor in the Department of Accounting and Information Systems at the School of Business at Emporia State University. He holds a PhD in Decision Science & Information Systems from the University of Kentucky. His research interests include human-computer interaction, Enterprise Resource Planning Systems, electronic commerce, and electronic learning. He

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