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**GRAPHICAL USER INTERFACE DESIGN FACTORS: COLLEGE STUDENTS'
PERCEPTIONS OF ELECTRONICS WEBSITES' TRUSTWORTHINESS**

by

**Zue Anne Zapanta
Bachelor of Science, University of Santo Tomas, 2004**

A Thesis

Submitted to the Graduate Faculty

of the

University of North Dakota

In partial fulfillment of the requirements

For the degree of

Master of Science

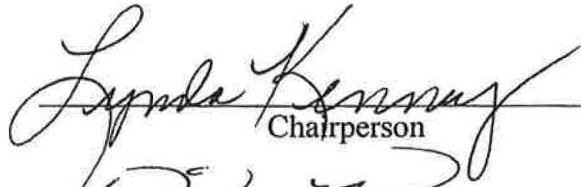
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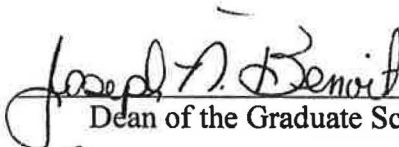
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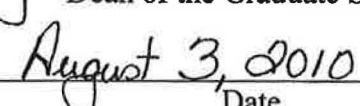
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ABSTRACT

With many online businesses “crashing and burning”, building an online relationship with consumers is a crucial endeavor for e-commerce businesses. Other researchers have found that trust play a key role in every business relationship, especially in the faceless realm of e-commerce. The graphical user interface (GUI) of an online retailer’s Website serves as the face of the business through which customers form first impressions that may influences their perceptions of trust and decisions to purchase. Therefore, this study was designed to explore how college students from an Upper Midwestern university perceive electronics retailers’ Website trustworthiness through GUI design features.

Qualitative and quantitative research methods were used in this study to investigate feelings and beliefs of college students perceive about electronics retailer’s Website GUIs. Data were gathered from an online survey, interviews, and focus group discussion. An online survey explored how college students rate the 14 trust-inducing design features proposed by Wang and Emurian in terms of importance in influencing perceptions of trust. The interviews and focus group discussion gathered primary data by investigating participants’ trust perceptions and purchase decisions. The general categories from the participants’ perspectives included background information, design factors, trust perceptions, and purchasing decisions. The following three themes emerged from a content analysis of data:

- Design factors of electronics retailer Websites may impact students' trust perceptions about those Websites.
- Students' experiences with online shopping may influence their trust perceptions about electronics retailer Websites.
- Design factors of electronics retailers' Websites may influence students' decision to purchase electronics online.

The results of this study provided design factors in Website GUI's that may help electronics retailers target the college student market and gain their trust and business. Experiential narratives and beliefs of the participants provided insights about how their trust perceptions are enhanced by Website design factors, which may contribute to further research on the topic of trust, e-commerce, and the college student market.

CHAPTER I

INTRODUCTION

Just a click away! This expression has been seen and heard more than ever signifying that almost everything is within one's reach through the World Wide Web. The phenomenal growth in the number of Internet users has attracted entrepreneurs to conduct their business online. Online shopping has become more popular than ever since it emerged along with the Internet boom in the early 1990's. This technology has become an essential business platform for trading, buying, and selling among organizations and consumers (Corbitt, Thanasankit, & Yi, 2003). Through the conceptualization of e-commerce, doors were opened for businesses to expand their reach to consumers. The rapid rise of e-commerce and the sudden decline that occurred at the turn of the century sparked research on the propagation of Web-based enterprise. Researchers have identified the lack of trust as one of the barriers for people to engage in e-commerce. (Wang & Emurian, 2005a; Corritore, Kracher, & Wiedenbeck, 2003)

Trust is a fundamental principle in every business relationship. Researchers suggested that it is imperative for online retailers to strategize to enhance trusting beliefs of customers through their Website in order to propagate their businesses. Trust enables the customer to participate in the objectives of online retailers, such as leading consumers to follow their advice, to share personal information, and to purchase their products (McKnight, Choudhury, & Kacmar, 2002a; Johnston & Warkentin, 2004). The graphical user interface, being the "face" of online retailers Websites, serve as a venue through

which first impressions are developed by customers who may either make or break the business relationship.

According to Market Watch (Waters, 2008), regardless of tight budgets college students will spend more on electronics than on apparel and other necessities. Given the academic requirements in most universities and as well as personal interests of colleges students, they are expected to be spending more on laptop computers, cell phones, Mp3 players, and other gadgets. Based on a survey conducted by the National Retail Federation, in conjunction with the consumer-tracking firm BIGresearch, college students are expected to spend \$11.05 billion on electronics making them a considerable market for electronics companies and retailers (Waters). College students, being one of the most active online shoppers—with 81% reported to have made purchases online—appear to be one of the most elusive groups to target for e-commerce (Han & Ocker, 2002).

In this study, exploratory research was conducted to investigate college students' perceptions of trust about the graphical user interface (GUI) design factors of the electronics retailer's Websites. The aim was to provide insights about how electronics retailers may enhance college students' trust and business through its graphical user interface by studying their perception of trust.

Using qualitative and quantitative research methods, three strategies of inquiry were implemented in this study. The participants of this study were randomly selected college students from a university located in an Upper Midwest state. First, an online survey was conducted to investigate how college students rate trust-inducing design features identified by Wang et al. (2005a) in terms of importance in influencing their trust. The survey was followed by one-on-one interviews with four selected participants

and was conducted to probe deeper into their trust perceptions and survey responses. Lastly, a focus group was formed to facilitate free-flowing discussion among college students about their trust perceptions of Websites' design factors. Once all data were collected, sorted, and coded using a content analysis, patterns were identified and three themes emerged. Analysis of the descriptive statistics and correlation of the survey data was also conducted.

After themes were established, member checking was conducted. Participants of the interviews and focus group were contacted to verify their agreement of the themes that emerged from the study. Participants' agreement with the themes was essential to the validity of findings of this study.

Statement of Purpose

The purpose of this study was to explore how college students perceive electronics retailers' Website trustworthiness through GUI design features. The specific goal of this research was to understand the relationship between college students' perception of trust and the GUI design factors through an exploratory investigation.

Justification of the Study

Knowing and understanding the target customer is a key aspect in the development of effective graphical user interface (Galitz, 2002). Gaining the consumer's trust through the GUI is essential in e-commerce given the tight and numerous competitions, especially for college student market whose purchasing decisions may be affected by other factors such as budget and time. The subject of trust and e-commerce has been a popular research topic; however, very little research has been conducted specifically to study college students' trust perceptions. Developing strategies and themes

about how online electronics retailers can gain college student's trust may be effectively formulated by exploring how they perceive trust through the graphical user interface of Websites. This research will provide insights about college students' trust perceptions, which may help current or upcoming online electronics retailers target the college student market segment.

Topic Selection

I worked for an online retailer for four years and in this span of time, I witnessed a number of interface revisions to the Website and often wondered about the reason behind such changes. When I became a part of the junior management team, I realized that those changes were part of the business strategies that the company applies to cater to the customers.

Coming from this background, I became interested in the topic of trust and e-commerce when I was on the other side of the fence as the online consumer. Although I was aware that people have hesitations about purchasing online, I never fully understood the reason why people would be much concerned. I remember feeling nervous when I was shopping online for the first time. When the item I purchased finally arrived, I recall being relieved and happy that I transacted with a legitimate online retailer.

When I was asked to select my research topic during my first semester in graduate school, I must admit that I did not expect to make such a crucial decision that early on. Nevertheless, I knew that I was up for the challenge and so I decided to research on a question that I had asked myself as well: How does one perceive if a Website is trustworthy or not?

Guiding Research Questions

The main question for this research was: How can electronics retailers gain college students' trust and business through their Website's GUI? Other questions that were addressed by this thesis follow:

1. How do college students perceive a Website's trustworthiness through its GUI when shopping for electronics?
2. What is the impact of GUI on college students' perceived trust of a Website?
3. What are the design factors that college students look for in a Website in terms of trustworthiness?

Although these research questions guided me in the initial phase of this investigation, additional questions emerged which guided the direction of the qualitative part of this study.

Benefits of Research

The findings of this research may offer helpful insights to current or upcoming electronics retailers venturing into e-commerce about how to create an environment of trust through their online store. Through this study, electronics retailers may gather ideas for designing their Websites in such a way that the college student market is targeted.

Understanding how college students perceive trust through the electronics retailer's Website GUI may benefit electronic retailers, especially small to medium-scale businesses compete with large-scale electronics online retailers. Findings of this research may be used by online retailers as guidelines in designing and improving their Websites to attract more business particularly from college students.

The findings of this research may also benefit Web designers. Since electronics retailers usually employ Web designers to professionally build and maintain their Websites, this research may benefit designers by providing ideas about what design factors can be integrated in Websites in order to promote the company's trustworthiness to customers. It is important to convert a casual Web browser into a potential buyer and designers have the task to design a Website that caters to a specific market segment. The results of this research may provide guidelines as to which key design factors may help increase college students' perception of trust in a Website.

This research may also be beneficial to college students, especially students majoring in Graphics Design. With computers being a major tool in their academic journey, college students purchase more electronics than most age groups. This research will offer some insights into what college students look for in order to trust an electronics Website with their money. Graphics Design students may apply the findings of this research in designing Websites for a specific market segment.

Lastly, this research may benefit other researchers. The findings of this research will contribute to the growing body of research as a basis for future studies about trust, e-commerce, and the college student market.

Organization of the Study

In Chapter I, an overview of the study and the statement of its purpose was provided. Definition of terms, justification, guiding research questions and potential benefits of the research were also included in this chapter.

In Chapter II, a review of literature was conducted to gain further understanding of the research problem based on related publications and researches about e-commerce,

graphical user interface, trust and college student market is discussed. Ideas and information gathered from the review of literature helped in developing the approach to the problem.

In Chapter III, the methodology employed for this research is described. The chapter provides the readers with an overview of exploratory research, comparison of qualitative and quantitative approach, qualities, and evaluation of qualitative study, strategies of inquiry and rationale for the choice of methodology. Then, the setting and participants of the study are described. Lastly, the procedures of the research are conveyed.

In Chapter IV, I report the data gathered from the surveys, interviews, and focus group discussion. Descriptions of the participants as well as their ratings of 14 design factors based on the survey are provided. The results of the analysis of data are also provided. Accounts from the interview provide the readers with the participants' background information, perceptions of trust through GUI design factors, discussion of survey responses and purchasing decision. Then, the focus group report is discussed by providing readers with a narrative that includes verbal comments, common ideas, and varying views that were tackled in the meeting.

In Chapter V, the three themes that emerged in this study are discussed with reference to published literatures. In addition, the limitations, and recommendations of this research are provided.

Definitions

Several terms were frequently used throughout this study. The following definitions are provided to clarify how these terms are defined relative to this study.

Clarify the bias

A validity strategy described as a self-reflection that creates “an open and honest narrative that will resonate well with readers” (Creswell, 2009, p.192). Reflectivity is a core characteristic of qualitative research, thus providing the researchers’ background clarifies how interpretations of the findings are shaped.

College Student Market Segment

In the marketing discipline, a market segment is defined as a group of people or organization that share one or more characteristics that cause them to have similar product needs (Hair, McDaniel, & Lamb, 2009). College student market segment refers to college students as a collective group who may have similar product needs.

Design Factors

Design features that contribute to the production of a result. For this research, the term design factor was used as a term for design features that elicits emotions and beliefs.

E-Commerce

E-commerce or electronic commerce is any type of business transactions conducted through the Internet.

Graphical User Interface

The user interface is the part of a computer and its software that people can see, hear, touch, talk to, or otherwise understand or direct (Galitz, 2002).

Member checking

Also called as member validation, this is a validity strategy done by taking back the findings or themes back to the participants (Creswell, 2009). This is done to determine whether the participants believe that the findings are accurate.

Online Retailer

An online retailer a company or business enterprise that use the World Wide Web to attract customers and process transactions to deliver goods or services for monetary gain. More specifically, online electronics retailers are e-commerce businesses that sell electronic gadgets.

Perception

Dictionary.com (2010, para. 1) defines perception as “the act or faculty of apprehending by means of the senses or of the mind; cognition; understanding.”

Triangulation

A validity strategy that refers to “gaining of multiple perspectives through completed studies that have been conducted on the same topic and that directly address each other’s findings” (Morse et al., 2007, p. 91). If data from two or more methods or perspective of participants seem to converge on a common explanation, the biases from the individual methods are thought to cancel out enhancing the validation of the claim (Lindlof et al., 2002).

Trust

Merriam-Webster (2010, para. 1a) defines trust as the “assured reliance on the character, ability, strength or truth of someone or something”. For this study, trust was used in the context of college students being able to perceive a Website’s trustworthiness through its GUI.

In the next chapter, I will discuss the review of literature conducted to gain understanding about e-commerce, graphical user interface, trust, and the college student market. The knowledge garnered through the literature review helped in planning the

approach to the research problem and selecting the research methodology presented in Chapter III.

CHAPTER II

LITERATURE REVIEW

Unlike a traditional brick and mortar store, e-commerce businesses or e-businesses do not have the face-to-face interaction that a salesperson in a store may have with potential customers. A potential customer's perceived risk is typically heightened because of the lack of physical interaction in an unfamiliar virtual environment (Corbitt et al., 2003). Unique sets of constraints are present in a Web-based environment that did not exist in the traditional commercial or face-to-face transactions. It has been argued that trust is integral for e-business relationship to form between an online retailer and potential customers, and this is vital to the e-business's success (Johnston et al., 2004). Trustworthiness of the selling organization, reliability of the buying process, privacy of the transaction, and customer satisfaction are the main concerns of the potential customer and the lack of these elements can be detrimental in the completion of an e-commerce transaction (Nah & Davis, 2002). The e-business's Website graphical user interface (GUI) serves as the "store-front" of the business. The GUI, being the face of the e-business, is a critical factor in creating a lasting first impression to potential customers. Thus, it is important for online retailers to be able to project trustworthiness to a person who may just be "window-shopping" or has real potential of purchasing online.

To present an overview of this research topic, a review of literature was conducted regarding e-commerce, graphical user interface, trust, and the college student market. The purpose of this literature review was to gain a deeper understanding about

the connections between the three main components of this study: electronics retailers' Website GUI's, trust, including its development and antecedents, and college students—the targeted consumer.

E-Commerce

“In the years ahead, the Internet will have an even more profound effect on the way we work, live, and learn. By enabling instantaneous and seamless communication and commerce around the globe, from almost any device imaginable, this technology will be one of the key cultural and economic forces of the early 21st century” (Gates, 2000, para.3). Gates' vision is evident now ten years from the time he affirmed it. In this decade where wireless, high-speed access is widely available at universities, public places and even in households, the Internet has revolutionized our everyday lives. Activities and transactions that are only conducted through face-to-face interactions, then, can now be considered as normal parts of most people's day-to-day activities. The emergence and growth of e-commerce has been attributed to the recent rapid Internet revolution (McKnight et al., 2002a; Aladwani & Palvia, 2002; Nah et al., 2003; Chang et al & Chen, 2008).

Ever since the boom of the Internet in the late 1990's, businesses have seen this technology as an opportunity to reach customers thus the “birth” of e-commerce (Wang et al., 2005a). Electronic commerce, more popularly known as “e-commerce”, or “e-business” is defined as “the process of conducting commercial transactions using any electronic communication technology to achieve an organizational goal” (Rahman & Raisinghani, 2000, p.i). Rahman et al. described the concept behind e-commerce as “a way to open new markets, improve communications, speed delivery times, simplify

business processes, streamline supply chains and maximize customer relationship marketing” (p.3). Through the conceptualization of e-commerce, doors were opened for businesses to expand their reach to consumers and as the term World Wide Web implies, businesses can now reach customers worldwide.

Barnes (2003), in her book *Computer-Mediated Communication: Human-to Human Communication Across the Internet*, discusses e-commerce as an organizational application of the principles of computer-mediated communication wherein an online retailer aims to conduct business transactions and maintain business relationships through computer networks. E-commerce is conducted mostly on electronic systems for virtual items like access to a Website, but most e-businesses mainly deal with transportation of physical items from a seller to the buyer. Online retailers are the one who sell items over the Internet or other computer networks in the form of online retail. Successful retailers primarily use e-commerce via the World Wide Web. Through this technology, organizations of all types, large- or small-scale, are able to expand their market reach and the ways they present products or services to customers.

Kendall (2000) argued that the meaning of e-commerce expands from buying and selling goods and services to informing people of service or product characteristics prior to the sales. Rahman et al. (2000), in their book titled *Electronic Commerce: Opportunity and Challenges*, discusses three business models of e-commerce using the Internet. Business-to-business (B2B) is the term used in e-commerce between businesses, which includes higher volume of transaction. Examples are a manufacturer and a wholesaler or a wholesaler and a retailer wherein both the buyer and the seller are business entities. B2B e-commerce allows companies to automate purchasing, manufacturing, and product

development processes with other companies. The second type of e-commerce is called business-to-consumer or B2C. B2C is the transaction between a business and an end consumer. This type of e-commerce involves different functions such as electronic shopping, customer support and product delivery. The last type discussed by Rahman et al. (2000) is e-commerce within the business, which transpires between units or departments within an organization. The focus of this study was the B2C type of e-commerce, more specifically e-businesses that retail electronics directly to individual customers.

Graphical User Interface

The use of graphics in user interfaces changed the way human-computer-interaction is conducted and accomplished as opposed to text-only interfaces. A Graphical User Interface, otherwise known as GUI, pronounced as *gooey*, is defined as “a human-computer interface (i.e., a way for humans to interact with computers) that uses windows, icons and menus and which can be manipulated by a mouse (and often to a limited extent by a keyboard as well)” (The Linux Information Project, 2004, para.1).

Galitz (2002) in his book titled *The Essential Guide to User Interface Design: An Introduction to GUI Design Principles and Techniques*, outlined the history of the development of the GUI. The GUI is said to have started in a research project at Xerox’s Palo Alto Research Center, as an alternative to text-only interface. Xerox systems—Altus and Star—introduced the mouse and pointing and selecting as the initial method of human-computer interaction. However, the exploitation of research on the technology did not flourish until the adaptation of the Xerox concept by Apple in 1984 and the mass-marketing of operating systems such as Macintosh and Windows in the late 80’s towards

the 90's (Galitz, 2002). The author discusses the basic principles of a GUI design based on the foundation for graphical interfaces, which was an outgrowth of the principles of Xerox STAR. One principle that he pointed out is that GUI has an "appropriate effect or emotional impact" for the product and its market. "Is it corporate, professional, and secure business system? Should it reflect fantasy, wizardry, and bad puns of computer games?" (p. 35). The principle suggests that emotions and impressions about the company can be evoked through the Website's GUI.

In the book, *Understanding Interfaces: A handbook of human-computer dialogue*, Lansdale and Ormerod (1994) discuss the nature and design of interfaces in general and the extent by which an interface can be designed in such a way that "understands" its potential users. Based on research conducted about the time spent in the technical development of software and the time spent in implementing and designing the interface, the authors pointed out that "the design and implementation of the interface represents a significant and probably increasing proportion of the time spent developing computer systems" (p. 212). The authors argue that forward-looking companies should recognize the importance of having human factors input into the design of human-computer interfaces.

Graphical User Interface and Trust

Kim and Moon (1997), in their research about the trustworthiness of cyber-banking system interfaces set out to demonstrate that it is possible to manipulate the visual design factors of the user interface in order to stimulate a target emotion, such as trustworthiness, in its users. They conducted a four-part study to demonstrate that visual design factors affect customers' perception of the cyber-banking system interface's

trustworthiness. From 40 different emotional factors and 14 design factors, they were able to identify whether or not there was a correlation between each emotion and design factor. From this, the authors deduced their research and focused on two different design factors. They then determined the extent of trustworthiness each design evoked from their subjects. Kim et al. (1997) concluded that, “The results indicate that it is possible to design customer interfaces of cyber-banking systems that will elicit target emotions, in particular trustworthiness” (p.20). Though their study was focused on cyber-banking system interfaces, they recognized that, “Whether or not the casual navigator will become a loyal customer of a particular cyber shopping mall or cyber bank may depend on the first impression of the interface” (p.20). This same belief may also hold true in electronics retailing on the Internet.

In another study, Chang et al. (2008) confirmed, “that customer interface quality is a critical influence on the establishment of e-loyalty, especially in the convenience feature which directly contributes to the generation of e-loyalty” (p.2941). The authors also suggest that, “online firms should consider focusing more on customer interface design in their marketing strategies” (p.2941). The researchers’ findings confirm that customer interface quality, including customization, interaction, convenience, and character, contributes to generating e-loyalty. Furthermore, in order to generate e-loyalty directly from customers, the researchers suggest that online firms provide a Website with easy navigation features, and organized logical structuring of information, which can be easily used by Internet users. The findings also suggest that the user interface has an effect in creating customer’s trust on an online retailer.

Trust

To understand how trust can be evoked through an e-business' Website GUI, discussions about trust in the offline context, or offline trust were reviewed. Corritore et al. (2005) and Wang et al. (2005a) proposed that research on online trust, or e-trust, can build on the body of work that examine trust in face-to-face human interactions, or offline trust. "Many offline trust findings appear to be applicable to an online environment, since online and offline situations have much in common" (Corritore et al., 2005, p.738). The researchers argued that the social rules of interaction between people function in both offline trust and e-trust. "Since trust can mitigate risk, fear, and complexity in the offline environment, it is likely that it can do the same in the online environment. Likewise, since trust is the social capital that can create cooperation and coordination in the offline environment, it probably can do the same in the online environment." (p. 738).

Offline Trust

The subject of trust has been extensively researched in various fields specifically in Sociology and Psychology since the 1950's (Corritore et al., 2003; Wang et al., 2005a). Wang et al. (2005a) pointed out that present researchers encounter difficulty in contextualizing trust and even conflict in definitional terms. Trust is a complex, multi-dimensional, context-dependent construct (McKnight et al., 2002a). Researchers from different fields of study have given their own contextual definition of trust. McKnight et al. (2002a) from his review of various definitions of trust, pointed-out the state of trust definitions as a "conceptual confusion" (Lewis & Weigert 1985, p. 975), and a "conceptual morass" (Barber 1983, p. 1; Carnevale & Wechsler 1992, p. 473).

Rutter (2001) from the ESRC Centre for Research on Innovation and Competition (CRIC), in his article titled *From the Sociology of Trust towards a Sociology of E-trust*, points out crucial observations about trust based on a previous experiment conducted by Garfinkel in 1963. These observations offer a better understanding of the nature of offline trust. Rutter enumerated such observations as follows:

- Trust is manifest in the actions of individuals
- That we judge how to act based upon the trust we have in others
- Trust is used to the benefit of both parties involved in an action
- Where trust is offered is it generally expected in return
- That trust is offered based upon “expectancies” of other’s behavior
- That trust is used to define ones relationship to others (p. 374)

Weber and Carter (2003) in their book titled *The Social Construction of Trust* defined trust in the context of relationships as “an orientation between self and other whose object is the relationship. Trust’s premise is the belief that the other will take one’s perspective into account when making a decision and will not act in ways to violate the moral standards of the relationship.”(p.3). Three dimensions that depict the dynamics of trust emerge from this definition: (1) Cognitive dimension or role taking where one places himself in the shoe of the other to have a better understanding through another’s perspective; (2) Moral dimension or reciprocity by preserving the relationship by doing no harm; (3) Social dimension which is the a way one acts toward another because one trusts the other.

Traditional literature in psychology and sociology do not include discussions of technologies as objects of trust (Corritore et al., 2003). According to Solomon and Flores

(2001), philosophers define a moral agent as something that has intentionality and free will. They stated that moral agents could be trusted because they intentionally and freely refrain from harm or doing good and that only moral agents can be the object of trust. Based on their definition, technologies cannot be the objects of trust because it does not have intentionality. However, the work of Reeves and Nass (1996) and other collaborators specifies that even if computers and software are not moral agents as they do not have intentionality and free will, since people respond to technologies as they would to real people, therefore by extension, technology is an object of trust. The researchers stressed out that, despite not having not intentionality and free will, these technologies act as social actors since they have social presence. Computers and technology are participants in our social relationships as social actors. The arguments presented assert how concepts of trust can be related to e-trust (Corritore et al., 2003).

E-trust

Although different fields of study have varied focus, definitions, theories and concepts, the common theme on the subject of trust is its importance in facilitating people to interact, despite fear and risky situations (Corritore et al., 2003). An often-cited research article by Mayer, Davis and Schoorman (1995) states that, “trust is not taking risk per se, but rather it is a willingness to take risk” (p. 712). Rutter (2001) defines his understanding of e-trust “on the observation of participant’s action rather than modeling or technological systems” (p.374). He proposes that in the context of e-commerce, a trust relationship, as it is in real-life scenarios, is between the consumer and a merchant and not between a consumer and the technology (Internet). In order for such relationship to happen, interaction should occur and be actively maintained.

Based on the definition of Mayer et al. (1995), I define e-trust as the willingness of a consumer to be vulnerable to the actions of an e-commerce retailer, based on the consumer's perception of the e-retailer's ability, competence, and integrity and the expectation that the e-retailer will behave in certain agreeable ways.

Characteristics of E-trust Relationship

Wang et al. (2005a) presented characteristics of trust in both online and offline contexts. The researchers described the similarities of e-trust and offline trust and highlighted the distinction of e-trust. These similarities and distinction of e-trust are summarized below:

- Trustor and Trustee – trust occurs between two parties in order to form a relationship. This relationship forms between the trustor, which is the trusting party, and trustee, which is the party to be trusted. In e-trust, “the trustor is typically a consumer who is browsing an e-commerce Web site, and the trustee is the e-commerce Web site, or more specifically, the merchant that the Web site represents” (p.111).
- Vulnerability – vulnerability is inevitable in a trust relationship, both online and offline. A trustor must subject himself to being vulnerable in order for trust to be operational. In the online environment, vulnerability is much highlighted as not only is loss of money at stake, loss of privacy may also occur. Thus posing a challenging situation wherein trust is needed in order for the relationship to transpire.
- Produced actions – trust produces risk-taking actions, In e-trust, whether a trustor decides to purchase from a particular e-commerce Website/merchant (trustee) or

just by simply browsing through the Website, the action that the trustor makes is an implication of trust.

- Subject matter – trust is highly subjective to individual characteristics and situations. The level of trust needed for a relationship to be formed or for a transaction to take place in the online environment is different for each individual (Wang et al., 2005a).

Importance of E-trust in E-commerce

A key reason for people's lack of willingness to provide information or shop online is "the fundamental lack of faith (or trust) between most businesses and consumers on the Web" (Hoffman, Novak, & Peralta, 1999, p. 80). When conducting transactions in a virtual environment, it is important for retailers to establish trust with their consumers. Although much conflict emerges in the topic of e-trust, one commonality among researches is the recognition of the importance of e-trust in the propagation of an e-commerce business.

Johnston et al. (2004), in their research of the online consumer trust construct in the e-merchant's perspective state the importance of having an extensive understanding of the concept of e-trust in venturing in the online business world. "If companies are to enjoy long-term success in the Internet marketplace, they must effectively manage the complex, multidimensional process of building online consumer trust."(p.221).

According to the researchers, e-merchants must understand the characteristics of Web user interfaces, antecedents that promote trust. From this knowledge, then the e-merchants will be equipped to implement a variety of trust-building techniques in the

design of their online consumer interface as well as the principles upon which they operate.

McKnight, Choudhury, and Kacmar (2002b), in their research about the impact of building initial consumer trust studied the models of building consumer trust in e-commerce. The researchers state that:

Building consumer trust is a strategic imperative for Web-based vendors because trust strongly influences consumer intentions to transact with unfamiliar vendors via the Web. Trust allows consumers to overcome perceptions of risk and uncertainty, and to engage in the following three behaviors that are critical to the realization of a Web-based vendor's strategic objectives: following advice offered by the Web vendor, sharing personal information with the vendor, and purchasing from the vendor's Web site (p. 297).

The researchers provided three key trust-building levers that can be managed by retailers venturing in e-commerce: structural, perceived Web vendor reputation, and perceived Website quality. They convey that, "It stands to reason that if the consumer perceives a vendor's Web site to be of high quality, the consumer will more likely have high trusting beliefs about the vendor's competence, integrity, and benevolence; and will develop a willingness to depend on the vendor" (McKnight et al., 2002b, p.307). They highlighted that in e-commerce, the vendors are "faceless" (p.307), thus their Website interface or their GUI becomes the "online storefront" (p.307) upon which consumers form their initial impression of the vendor.

Rutter (2001) stresses on the significance of trust in a business-to-consumer e-commerce. The researcher validates the importance of trust in B2C e-commerce. The

researcher conducted his research in three major divisions. Rutter (2001) discussed building trust through familiarity. Given the fast-paced evolution of the Internet and the industry that comes along with this technology and despite growth of PC ownership at homes, “it does not have the familiarity of other household technologies such as television and as such does not have the same place within the majority of people’s everyday routines” (p. 372). Secondly, the researcher stressed the importance of the mutuality of interaction between consumer e-commerce transactions, relating it to Giddiness’ (1991) ontological securities that if a person trusts on e-commerce, one will definitely rely on it. From this study one may infer that if a consumer trusts a certain e-commerce Website, relying on it will translate to continued patronage.

Rutter also discusses how a successful e-commerce retailer gains trust based on four social constructs—community, flow, branding and personal experiences. Allowing the customers to interact with other customers and with the Websites itself, develops online communities that are said to be linked with having trusting relationships. Then, flow allows the customers to be involved in the Website by establishing how interactions are governed thus developing trust. Once customers become involved and established relationships with the Website they trust, they would tend to favor this over other Websites. Lastly, consumers will seek continuous commitment in quality service from the online retailer. Depending on their personal experiences with a Website, they will continue to trust and patronize the online retailer. (Rutter, 2001)

Trust is a critical factor in an online context. Research suggests that e-commerce will rapidly grow if online retailers would foster online trust. Also, consumers will

benefit by having more intensive interactions with the online merchant as well as having a feeling of security when disclosing personal information online (Wang et al., 2005a).

Antecedents of E-trust

For e-businesses, identifying the antecedents of e-trust is valuable as this provides a basis for how they can foster trust through their “store” which is their Websites. Nah et al. (2002) studied the human-computer interaction issues in e-commerce. The researchers propose that “the lack of trust or the difficulty of cultivating trust in an online environment poses a major hurdle to the future of e-commerce. Research on trust is needed to understand its antecedents and to devise ways to foster trust online” (p. 110).

Mayer et al. (1995) identify three critical attributes that the trustee must possess to foster trust: ability, integrity, and benevolence. These factors, together with other factors such as the trustor’s inherent trust propensity or tendency to trust, create an environment in which trust is developed. This model of trust has been argued applicable to the consumer and merchant online shopping relationship. (McKnight et al., 2002a; Bhattacharjee, 2002; Jarvenpaa, Tractinsky, & Saarinen, 2000).

Johnston et al. (2004) laid out a conceptual framework of how e-merchants can build a trust relationship with their prospective consumers. According to the researchers,

The merchant is the trustee and must promote the characteristics of ability, integrity, and benevolence. The merchant must take the initiative to establish trust in the relationship (Whitener, Brodt & Korsgaard, 1998).

The merchant must be perceived to conduct itself skillfully and competently, with the intention to do good to the consumer and to do so in a manner that is consistent with the desires of the trustor (Ridings, Gefen

& Arinze, 2002). eMerchants must advance these factors of trustworthiness through proven positive methods of reinforcement.

Specifically, they must understand the antecedents of trust and implement this knowledge in the form of specific trust-building mechanisms. (p. 222)

McKnight et al. (2002a) proposed an integrative model in the formation of e-trust.

Their Web Trust Model includes institution-based trust or trust in the Internet environment as well as the more common trust types—trusting intentions, trusting beliefs, and disposition to trust. Trusting intentions means the trustor feels secured and is willing to depend, or intends to depend, on the trustee. Trusting beliefs means the trustor confidently perceives that the trustee, which is the e-business, has attributes that are beneficial to the trustor. 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 and persons (McKnight et al., 2002a). The model proposed by McKnight et al., provides an overview of how e-trust is formed. The researchers integrated these trust constructs within the broad framework of the Theory of Reasoned Action by Fishbein and Ajzen (1975), indicating that beliefs lead to attitudes, which lead to behavioral intentions, which lead to the behavior itself. Researchers also applied the TRA model of Davis (1989), and came up with a model that indicates that trusting beliefs lead to trusting intentions to the vendor, which in turn result in trust-related behaviors. The researchers stress that the disposition to trust is influenced by the customer's individual trust propensity and the perception and belief of an e-merchant's integrity, benevolence and competence and intentions, as antecedents to trust and trusting actions (McKnight et al., 2002a).

Lee and Turban (2001), in their research in creating a trust mode for Internet shopping, propose four main antecedents that influence consumer trust in Internet shopping: (1) the trustworthiness of the e-merchant (2) trustworthiness of the Internet as a shopping medium (3) infrastructural or contextual factors such as third-party certification, (4) other factors—control factors, such as size of e-merchant, demographic variables, prior related experience. Their model also indicated that the three attributes (among other factors) that are conducive to increasing e-commerce vendors trustworthiness. The researchers identified perception of an e-commerce vendor's ability, integrity and benevolence as key attributes that foster trustworthiness.

Gefen (2002) in his research examine offline trust from a multi-dimensional perspective. According to the researcher, the specific beliefs of integrity, ability or competence, and benevolence were observed as antecedents to overall trust. The same is applicable to the online environment, whereby, integrity is the belief that the e-merchant adhered to the agreement or contract of the transaction. Ability is the belief about the skills and competence of the e-merchant to provide the expected quality products and services. Benevolence is the belief that the e-merchant, aside from wanting to make profits in a legal channel, takes into consideration the welfare of the customer without regard to making a sale.

Ang, Dubelaar, and Lee (2001) in their research on e-trust from a consumer's perspective, agree on a common standpoint and proposed three dimensions of trust that are said to be important for enhancing the perception of e-trust. The proposed dimensions starts with the ability of the e-merchant to deliver a product or service that performs as promised, the willingness of the e-merchant to compensate if such purchase did not meet

the customer's satisfaction and lastly, the presence of a private policy or statement on the Website (Wang et.al. 2005a).

Corritore et al. (2002) also developed a model of e-trust that they claimed can be used to study an individual person's trust in a specific e-commerce Websites. In their model, the researchers identified two main categories of factors that can impact the formation of e-trust. These are external factors, including characteristics of the trustor, the object of trust (the Website) and the situation, that exist explicitly or implicitly in a particular trust context and the individual trustor's perception of these factors. The researchers propose that the perception credibility, ease of use and risk, impact a decision to trust in an on-line environment. More specifically, the authors identify the antecedents related to the trustor, which is the e-merchant and their Website, including navigational architecture, interface design elements, information content accuracy, seals of approval from organizations such as VeriSign or BBBOnline, branding, and reputation.

By understanding the concept and antecedents of e-trust, it is apparent that e-commerce Websites, in order to gain consumer's trust, should aim to strategize for a positive perception of the e-merchant's integrity, ability and benevolence and consequently increasing their perceived trustworthiness.

Nah and Davis (2002) discussed 13 guidelines based on the principles of establishing consumer trust online laid out by Schneiderman (2000) and Nielsen (1999). The thirteen guidelines are subdivided into three main categories: Content, Design, and External Certifications and References. Under the design category, the researchers indicated four guidelines namely: Timely and Professional Web Design, Reliable, and Secure Technology, Informed Consent – all of which denotes integrity and benevolence,

and Personalization – which denotes benevolence. The guidelines presented by the researchers offer insights about how customers’ beliefs in integrity, ability, and benevolence may be enhanced through the Website’s GUI.

Table 1. Web Design Principles and Guidelines for Influencing Consumer's Perception of E-commerce Websites' Trustworthiness (Nah & Davis 2002, pp. 107-108)

Category	Attribute	Guidelines	Description
Content	Integrity	Provide Identity of Company	To develop trust in consumers, it is necessary for e-commerce Web sites to provide the identity and complete information of the company such as their physical location, full contact information, ownership, management, purpose, and mission (Greenspan, 2002; Shneiderman, 2000).
	Competence	Disclose Performance History	Disclosure of a company’s pattern of past behavior, including reliable self-reports of performance history and data, helps inspire consumer trust in future performance (Shneiderman, 2000).
Design	Integrity and Competence	Timely and Professional Web Site Design	Professionalism is an important aspect and determinant of trust. A professionally designed and user-friendly Web site instills trust and confidence in consumers.
	Integrity and Competence	Reliable and Secure Technology	It is the responsibility of the vendor to ensure that its technology is reliable and secure, and to provide security assurance to its consumers.
	Integrity and Benevolence	Informed Consent	Decisions concerning the tracking and use of personal information, such as putting cookies on users’ machines, tracking of users’ mouse movements, the types of customer information captured, and sharing of customer profiles with other parties, should be made by individual users (Friedman et al., 2000).
External Certifications & References	Integrity and Competence	Get Certifications from Third Parties	Certifications from third parties can increase credibility of online services (Shneiderman, 2002).
	Integrity	Use Third Party Services	Escrow services are sometimes used to increase consumer trust in online markets (Kollock, 1999).

Table 1 (continued). Web Design Principles and Guidelines for Influencing Consumer's Perception of E-commerce Websites' Trustworthiness (Nah & Davis 2002, pp. 107-108)

Category	Attribute	Guidelines	Description
External Certifications & References	Competence, Integrity and Benevolence	Credible Third Parties' Referrals and Connectivity	Referrals from credible third parties, including being hyperlinked from and having hyperlinks to credible third parties' Web sites, increase consumer trust.
	Competence, Integrity and Benevolence	Provide References from Past and Current Users	References from past and current users provide an effective means for assessing reputation (Shneiderman, 2000; Resnick et al., 2000), which is a key antecedent of consumer trust (Jarvenpaa et al., 2000).
	Integrity	Post a Clear Privacy and Security Policy	Providing a clear and easy-to-understand privacy and security policy is essential for the development of trust (Greenspan, 2002).
	Integrity and Benevolence	Disclose All Aspects of the Customer Relationship Up-front	Up-front disclosure of all aspects of the customer relationship is key to development of trust.

Wang et al. (2005a) present a framework of trust-inducing features in Website interface based on a literature review the authors conducted. The 14 design features identified by the researchers may also be applicable to the college student market. These findings serve as the foundation for my study by investigating how important these design features are in the trust perceptions of the college student market.

Table 2. Conceptual Framework of Trust-inducing Features (Wang et al., 2005, p. 116)

Dimensions	Explanations	Features	Literature sources
Graphic design	Refers to the graphical design factors on the Website that normally give consumers a first impression	<ul style="list-style-type: none"> • Use of three-dimensional, dynamic, and half-screen size clipart • Symmetric use of moderate pastel color of low brightness and cool tone • Use of well-chosen, good-shot photographs 	Karvonen and Parkkinen (2001); Kim and Moon (1998)

Table 2 (continued). Conceptual Framework of Trust-inducing Features
(Wang et al., 2005, p. 116)

Dimensions	Explanations	Features	Literature sources
Structure design	Defines the overall organization and accessibility of displayed information on the Website	<ul style="list-style-type: none"> • Implementation of easy-to-use navigation (simplicity, consistency) • Use of accessible information (e.g., no broken links and missing pictures) • Use of navigation reinforcement (e.g., guides, tutorials, instructions) • Application of page design techniques (e.g., white space and margin, strict grouping, visual density) 	Cheskin/Sapient Report (1999); Karvonen and Parkkinen (2001); Neilsen (1998); Zhang, von Dran, Small, and Barcellos (1999)
Content design	Refers to the informational components that can be included on the Web site, either textual or graphical	<ul style="list-style-type: none"> • Display of brand-promoting information (e.g., prominent company logo or slogan, main selling point) • Up-front disclosure of all aspects of the customer relationship (e.g., company competence, security, privacy, financial, or legal concerns) • Display of seals of approval or third-party certificate • Use of comprehensive, correct, and current product information • Use of a relevant domain name 	Belanger, Hiller, and Smith (2002); Cheskin/Sapient Report (1999); Egger (2001); Hu, Lin, and Zhang (2001); Neilsen (1999); Shneiderman (2000)
Social-cue design	Relates to embedding social cues, such as face-to-face interaction and social presence, into Web interface via different communication media	<ul style="list-style-type: none"> • Inclusion of representative photograph or video clip • Use of synchronous communication media (e.g., instant messaging, chat lines, video telephony) 	Basso, Goldberg, Greenspan, and Weimer (2001); Riegelsberger and Sasse (2001); Steinbruck, Schaumburg, Duda, and Kruger (2002)

College Student Market

Tedeschi (2002) in his New York Times column, *E-commerce Reports*, report that about \$1.4 billion is spent by college students online according to a report released by the Student Monitor. He stated that, “Marketers and retailers know well that if they can turn a college student into a paying customer, they stand a good chance of developing a lifetime relationship with consumers who are likely to have more money to spend than less-educated people” (p.C8).

Han et al. (2002) in their article, *Is it Worthwhile to Target University Students?*, present six characteristics of college students that make them worthwhile targets for online shopping.

- **Computer Dependence:** More than 90 percent of university students are Internet users and more than 30 percent of students perceive that they are computer dependent (Pastore, 2000).
- **Easy for Email Marketing:** Most of them automatically receive an email address when they register for courses. Their email addresses are easy for companies to obtain.
- **Computer Access:** University students often use a school server to connect to faster Internet services.
- **Potential Lifetime Member:** Some companies lure university student by giving them discounts on their brand, hoping that students will stay and become lifetime, brand-loyal customers.
- **Future Money Maker:** Students will make significant amount of money as they are building their careers in the near future.

- High Education: In general, people with a college education make more money and are expected to spend more money for shopping. (p.19)

Surveys suggest that 98% of college students have purchased a product or service online (Experience.com, 2006). Based on a report by Market Watch, college students are expected to spend more on electronics as a result of university requirements (Waters, 2008). Another report states, “In 2008, 95.7% of college students—17.4 million people—will go online at least once a month” (Williamson, 2008, p. 25). They said to be the most digitally connected demographic group in the US. This makes college students a feasible target in electronics marketing especially over the Internet.

In designing for a Website’s user interface, it is essential to know the users. Galitz (2002) indicate that the first step in designing a user interface is to know your user or client. The author state that, “The journey into the world of interface design and the screen design process must begin with an understanding of the system user, the *most important* part of any computer system” (p. 61). The author discuss general characteristics of the interface through design goals in creating a GUI. Among the characteristics he discussed, under the category of compatibility, Galitz points out that knowing the user “is the fundamental principle in interface design” (p. 37). In his discussion of this crucial first step, he emphasizes that understanding how the target user interacts with computers is critical. This suggests the importance of studying how college students’ perception of trust to be able to design an e-commerce Website that will emulate such impression to potential customers.

Conclusion

The Graphical User Interface of an e-commerce Website is the face of the e-business through which customers must perceive trustworthiness in order for the enterprise to be successful. Through this review of literature, discussions about e-commerce have been presented, including the concept of e-trust and its importance in the e-commerce trade. It is undeniable that trust is essential to building relationships, more specifically in business transactions conducted in a risky, somewhat overwhelming, and intangible environment such as the World Wide Web. Through trust, a consumer's perceived risk is somehow surmounted by the willingness to enter into a potentially gainful transaction. In addition, the attributes that must be emanated through the GUI in order to foster positive perception of the e-commerce Website's trustworthiness were identified: integrity, ability or competence and benevolence. Lastly, I discussed research on the significance of college students as a target market and the importance of studying their perceptions of trust to be able to design an e-commerce Website that will emulate trustworthiness.

In the Chapter III, I will discuss the research method, sampling, instruments, and procedures employed in this study. I will also discuss the rationale for the choice of methodology, explain how the research was conducted then, convey the data that was gathered for this study.

CHAPTER III

METHODOLOGY

Introduction

This research investigated how college students perceive electronics retailers' Website trustworthiness through the Graphical User Interface (GUI) design features. The specific goal of this study was to conduct an exploratory research to develop themes on the relationship between college students' perception of trust and the GUI design. The aim of this study was to provide ideas to current and upcoming electronics retailers as well as graphic and Web designers about how to gain college student's trust and business through their Website GUI by determining perceptions about trust through design features.

To address the goals of this research, both qualitative and quantitative approaches were implemented. In order to impart my selection of the methods, I will first discuss definition and purpose of exploratory research. Then, I will discuss a comparison of the two most prominent approaches of research: Quantitative and Qualitative. I will also convey the qualities of qualitative research, the evaluation of validity and rationale for choosing this approach. Lastly, I will discuss the strategies of inquiry employed and the data collection procedures carried out to complete this study.

Research Method

Exploratory Research

An exploratory research is defined by Malhorta (2009) as “a type of research design that has as its primary objective the provision of insights into and comprehension of the problem situation confronting the researcher” (p. 70). Exploratory research is conducted on a small and non-representative sample to aid management in understanding and explaining an existing problem. This type of market research design was implemented for this study as it aims to provide insights to online electronics retailers about how they can gain college students trust through the graphical user interface by looking at their perceptions of trust.

Comparison of Quantitative and Qualitative Research

Quantitative and qualitative research can be distinguished in two distinct discourses, one relates to the research paradigm and the second referring to research methods employed. This is explained by McMillan & Schumacher (1997), who point out that:

At one level quantitative and qualitative refers to distinctions about the nature of knowledge: how one understands the world and the ultimate purpose of the research. On another level of discourse, the terms refer to research methods – how data are collected and analyzed – and the types of generalizations and representations derived from the data (p. 12).

The quantitative approach to research is the more traditional approach that searches for facts and quantifiable data to support a theory (Creswell, 2009). Quantitative approach is, “one in which the investigator primarily uses postpositivist claims for

developing knowledge, employs strategies of inquiry such as experiments and surveys, and collects data on predetermined instruments that yield statistical data.” (Creswell, 2003, p. 18) On the other hand, the qualitative approach is most commonly used for the purpose of describing and understanding the phenomena behind human behavior from the participants’ point of view (Leedy & Ormrod, 2005). Creswell (2009) subdivided this approach based on the knowledge claims it implements— constructivist assumptions and emancipatory assumptions. In this research, emancipatory assumptions will be used. This approach “seeks to establish the meaning of a phenomenon from the views of the participants” (Creswell, 2009, p.16).

Qualities of Qualitative Research

Seale, Gobo, Gubrium, and Silverman (2004) presented guidelines for a qualitative study. These guidelines may be applied to a variety of qualitative research enterprises in order to enhance their quality. “While one might expect all of these to be discussed in a final research report, they could also be things that researchers simply asked of themselves as they proceed about their business” (Seale et al., 2004, p. 8). Seale et al. divides these guidelines into two categories— General and Specific.

Table 3. General Features of Qualitative Research (Seale et al., 2004, p. 8)

Level 1 - General
<ol style="list-style-type: none"> 1. Its aim and purpose should be explained and set in the context (e.g. historical, political, and disciplinary) in which these arose. 2. The rationale for the design of the inquiry should be explained. 3. The researcher should demonstrate openness to emergent issues. 4. The researcher should seek to be transparent and reflexive about conduct, theoretical perspective, and values. 5. The study should provide understanding of context. 6. The study should re-present data or evidence faithfully. 7. A qualitative research study is likely to convey depth, diversity, subtlety, and complexity. 8. Data or evidence should be actively and critically interrogated. 9. Claims should be supported by evidence for those claims. 10. Some (but not all) studies may be judged according to their utility or relevance for particular groups of people and particular power relations.

Table 3 (continued). General Features of Qualitative Research (Seale et al., 2004, p. 8)

Level 1 - General
11. Some (but not all) studies may be judged according to whether they provide understanding of subjective meanings (see our comments earlier about the limitations of romantic interpretations that seek for 'authentic' human experience).
12. The study should provide new insights.

Table 4. Specific Features of Qualitative Research (Seale et al., 2004, p. 8-9)

Level 2 - Specific
1. The relationship of the study to existing knowledge should be explained.
2. The rationale for a qualitative rather than a quantitative study should be understood.
3. A rationale for sampling should be present and the implications of different approaches to this, and of failures to gain access to certain sources, understood.
4. Negotiations to gain access to sources of evidence and the implications of these for the evidence gathered should be described and assessed.
5. The particular contributions made by different methods for collecting and recording evidence should be understood, and the rationale of the methods chosen be given in the light of this.
6. The rationale for the choice of analytic strategy should be clear, with awareness of the potential of other analytic strategies.
7. Attention should be paid to negative or deviant cases to alternative explanations.
8. There should be a comprehensive rather than selective examination of data/evidence.
9. There should be a clear separation between evidence and interpretation of evidence.
10. The language of final reports should be accessible and clear to the intended audiences.
11. The implications of the investigation for broader areas of knowledge and practice (for example, theory, policy, practice) should be explored, and be of significance.

These recommendations helped me conceptualize how I would conduct the study and report the data derived from this investigation. A secondary purpose was to ensure that the study is carried out purposefully, data analyzed, interpreted, and reported clearly.

Evaluation of Qualitative Studies

“How can researchers be sure of the quality of their interpretation and the methods used to arrive at them? To what extent can interpretations be validated as true, correct, and dependable? These questions are as important for qualitative practitioners as they are for those in objectivist research...” (Lindlof & Taylor, 2002,

p. 238). In conducting qualitative research, same as in quantitative approach, research validity is integral to establish the trustworthiness, authenticity and credibility of the study.

The term “validity” is a debated and avoided term in the context of qualitative research as the term is mistakenly linked as an indicator of attitudes to analysis and interpretations in quantitative research (Morse & Richards, 2007). Although validity carries a different connotation in qualitative research, it is still commonly used since most readers are familiar with the general use of the term to indicate that the data are accurate and the research findings are based on persuasive evidence (Locke, Silverman, and Spirduso, 2000)

“Qualitative validity means that the researcher checks for accuracy of the findings by employing certain procedures” (Creswell, 2009, p. 190) Qualitative researchers do seek to produce and demonstrate credible data and inspire confidence in readers that a plausible, insightful, and defensible interpretation is developed (Lindlof et al., 2002). To ensure credibility, trustworthiness, and authenticity of this study, I incorporated validity strategies recommended by Creswell (2009) as follows:

1. Triangulation – By using three methods of inquiry—survey, interview, and focus group—I established themes by looking into the data from these different sources of evidence. By doing so, the credibility of the findings of this research was enhanced.
2. Member checking – After the themes were identified, the participants of the interview and focus group were again contacted to present the themes and were asked if they agree or not. The participants agreed with the

themes presented which validated the accuracy of the findings.

3. Clarify the bias – Although all data collected were collected and transcribed as objectively as possible, I do recognize that it was impossible to completely separate myself from the research and that personal biases may have taken place throughout the phases of this study. At the beginning of the study, I imparted my background and how this research topic was selected. In addition, throughout this study I aimed to clarify any inherent biases by distinguishing my observations from raw data as well as providing comments on how I interpreted the data.

Strategies of Inquiry

In using the qualitative approach in this research, certain techniques were followed. The strategies of inquiry explain the techniques I employed to collect data, which are consistent with the research method selected.

Surveys

Creswell (2009) defined the survey strategy as “cross-sectional and longitudinal studies using questionnaires or structured interviews for data collection, with the intent of generalizing from a sample to a population” (p. 12). Researchers administer surveys to a sample of the population to learn about the distribution of their characteristics, attitudes, or beliefs. Surveys fully rely on the honesty and accuracy of information and responses provided by the participants. A survey is usually used if a researcher wishes to make inferences about a large group of people from a relatively small number of individual or groups. “Its basic aim is to describe and explain statistically the variability of certain features in a population” (Marshall & Rossman, 2006, p. 125).

Interviews

Interviews involve face-to-face interaction (may also be over other mediums such as telephone) wherein the interviewer asks open-ended questions intending to elicit views and opinions from the participants. (Creswell, 2009) There are several techniques in conducting interviews. Specifically for this study, unstructured, interactive interviews were conducted. This form of interview involved relatively few prepared questions and used unplanned and unanticipated questions and probing for clarification. Unstructured interviews are appropriately used in studies where the researcher seeks to learn primarily from the respondents what matters or how procedures are understood (Morse et al., 2007).

Focus Group

Focus group discussion is another form of interviewing wherein 6 to 10 people, who are unfamiliar with each other, are brought together and are introduced to questions that promote discussion and expression of differing opinions and points of view. “The advantages of focus group interviews are that this method is socially oriented, studying participants in an atmosphere more natural than artificial experimental circumstances and more relaxed than a one-on-one interview” (Marshall et al., 2006, p.114).

Rationale for Choice of Methodology

Creswell (2009) discusses three considerations in selecting the approach for the research: the research problem, the researcher’s personal experience, and the audience to whom the research will be presented. These criteria are used in considering the approach and techniques used in this research.

As stated earlier, the specific goal of this research was to discover how college students perceive a Website's trustworthiness through the design features in the GUI. These themes were developed based on the data gathered from college students' perceptions, opinions, and viewpoints. Although some quantitative data was gathered through the survey, a greater proportion of data will be collected from interviews and focus group discussion. College students' perceptions of trust cannot be deeply understood based on quantitative data alone. Since thoughts, feelings, and beliefs are involved in this study, conducting a qualitative research allows a researcher to "understand the deeper perspectives that can be captured through face-to-face interaction" (Marshall et al., 2006, p.53). Thus, the qualitative approach to this study allowed me to explore, interpret, and understand college students' perception of Website trustworthiness through its GUI design features.

Description of the Setting & Participants

Since this research explores a large population of subjects—college students—the sampling approach was used to gather participants. For this research, participants were undergraduate students from a university in the Upper Midwest located in a city with approximately 67,000 people. The university, one of the oldest in the area, was founded in 1883 and has been a recognizable part of the city and state for 127 years. More than 200 fields of study are offered at the university where students earn baccalaureate through doctoral and professional degrees. The campus houses 238 buildings situated on 570 acres of wooded and landscaped surroundings. The university enrolls about 13,000 students, 10,440 of which are at the undergraduate level. Forty-six percent of the students come from within the state while the rest represent all other states, eight Canadian

provinces, and more than 50 nations. Since its establishment, the internationally recognized institution has graduated more than 99,000 students. The university has earned the recognition of being the state's most comprehensive intensive research university and the primary center for professional education and training.

The participants of this research are majoring from different fields of study at the university. The students were recruited through an email listserv randomly selected and provided by the university's Office of Institutional Research. In addition, some students were randomly recruited from various departments such as Technology, Computer Science, Communication, and Sociology. Participants consisted of students in different year levels and majors with varying online shopping backgrounds. Through this sampling method, some skewing and bias were decreased and avoided.

Procedures

Negotiating Entry

To initialize this research, I sought the approval of the Institutional Review Board in order to conduct surveys and interviews with the university's undergraduate students. The Institutional Review Board (IRB) is a federal funded committee that reviews research proposals to ensure that the research will be conducted with appropriate protection to the human subjects from unnecessary harm.

Once IRB approval was obtained, I requested randomly selected email addresses of undergraduate students from the university's The Office of Institutional Research. From this pool, the link to the online survey was sent out as well as invitations for the focus group discussion.

Survey

A survey was created to investigate the importance of the 14 design features identified by Wang et al. in their research titled, *An overview of online trust: Concepts, elements, and implications* (2005a) in influencing college students' perception of trust. The Web-based survey instrument was created using LimeSurvey, an open source online survey application for the survey proper. Form Tools, an open source backend database, was used to collect consent forms agreement and demographic data.

To ensure that the participants understood the survey questions, I asked three college students to preview the survey. Modifications were made to the questions to better suit college students' understanding.

Once entry was negotiated, the link to the online survey was sent out to the students through the university's email system. The email addresses were encoded in the university's Listserv to keep the email addresses private.

Upon entering the survey Website, the informed consent form was presented to the participants who agreed to participate before proceeding to the actual survey by typing in their email address. Once the participants agreed to participate in the study, they were asked to answer demographical information including age, gender, year level of academic standing, average number of hours spent online and online shopping experience. The students were given instructions to assume that they were interested in purchasing electronics from an actual electronics retailer's Website. Then, the participants were directed to each survey proper.

In the survey proper, the questions were placed at the top-half of the page while the bottom half displayed the Abt Electronics Website (www.abt.com) so that the

participants could refer to the Website when answering the survey. Abt Electronics is an actual online electronics retailer. I selected the Website as a visual example because it represents all the design factors that were identified by Wang and Emurian. Participants were asked to rate the importance of each design feature in terms of influencing their perception or the Website's trustworthiness in a 10-point Likert-type scale wherein "10" is extremely important, "5" is neutral and "1" is not important (see Appendix D for the list of survey questions and Appendix G for screenshots of the survey site).

Participants were also asked to rate their overall perception of trustworthiness of the Abt Electronics Website. This question was included to examine if the design features presented through the Website were effective in positively influencing the students' trust perception. Lastly, the participants were asked if they wish to participate in a follow-up interview to further probe on their trust perceptions through GUI design features.

I encountered a challenge in gathering participants for the survey. In the first two months that the survey was sent out through email to 2,000 students, the rate of return was at less than 1 percent. The link to the survey was then sent out to random students from the Computer Science, Sociology, Communication and Technology. Ten computer terminals in the Department of Technology were also set up with the survey Website and students were asked to participate in the survey.

I came across technical challenges in the implementation of the survey. On May 12, 2010, the hosting site of the survey had server glitches that caused the survey site to malfunction. This was resolved by moving the survey proper to another database. As a result, the data gathered from the survey proper were in two databases. This, however,

did not affect the survey displayed online and the data collection. All participants were provided with the same survey.

Interviews

All survey respondents were asked if they wanted to participate in a follow-up interview to further probe on their survey answers. Participants who volunteered for a follow-up, one-on-one interview were then contacted by email to establish a time to meet. There were 11 students who were willing to participate in a follow-up interview. Four students were selected from the volunteers based on their availability. Follow-up interviews were conducted with four undergraduates and took place in a private office at the university. The closed-door interview was held at a time that was convenient for each participant. Inside the interview room were two desks and two chairs. A laptop computer and a desktop computer were turned on. The laptop displayed the survey answers of the participant I was interviewing while the desktop computer displayed the Abt Electronics Website to serve as reference during the discussion.

Prior to the start of the interviews, the participants were asked to sign an informed consent form. Once consent was given, the interview proceeded. Participants were met individually to ensure confidentiality. I began the interview by introducing myself and then explained the purpose of the interview. Throughout the interviews I made efforts to make the setting comfortable and non-threatening by building rapport with the students. The participants were asked if they felt comfortable in the venue to which they affirmed.

During the interviews, participants were asked similar questions to the survey as well as more probing questions to further explore on their perceptions of trust. Asking similar questions validated the participants' answers to the survey. Since the participants

were allowed to share their opinions freely, I was able to probe deeper about the design features that influenced their trust and how they perceived each feature. Also, from time to time participants showed me Websites using the desktop computer to exemplify the design features that appealed to their trust perception. This allowed the participant to explain how he/she perceives a Website's trustworthiness through the GUI design features (see Appendix E for the list of interview questions).

Focus Group

After the initial survey and interviews were conducted, a focus group of 10 college students was formed to facilitate an organized discussion on trust perceptions and GUI design features. The focus group was composed of a different set of college students who had participated in the survey or interviews in order to gain insights from a different method of inquiry and to validate my study. The focus group participants were recruited through a different set of 2,000 email addresses randomly selected and provided by the university's The Office of Institutional Research. Again, the invitation to participate was emailed using a listserv created through university's listserv to keep the email addresses private.

The focus group discussion was held in a classroom located in a building on the university campus. No class was in session and the room was closed to all outsiders in order to allow the privacy needed for participants to be comfortable voicing their opinions and to avoid any interruptions. Before the focus group discussion began, I assigned each participant a student number that allowed him or her the option not to divulge any personal information among the group. All participants agreed to be introduced by their names to each other. Snacks and refreshments were provided and the

participants were able to interact with each other. At the start of the discussion, I introduced myself to the participants. I also explained the purpose of the study and provided an overview of what would transpire. Then, the participants were asked to sign the consent forms. Participants were reminded that all opinions, views and discussions must remain among the group so as to maintain the confidentiality of each member of the focus group. Once consent was given and all questions were addressed, the focus group discussion commenced.

Each participant was provided the opportunity to share his or her thoughts and opinions freely. As an introduction, participants were asked to share what were the best and worst things about online shopping. The following questions were asked to rouse the discussion:

1. How do you feel about online shopping specifically for electronics?
2. Looking back on your first online shopping experience, did you have any hesitations? If so, what were they?
3. When you are shopping online, especially when you encounter an unfamiliar Website, does the appearance of the Website influence your perception of the Website's trustworthiness? How?
4. What design features do you look for in a Website before you perceive the Website as trustworthy and worth looking into? How does each design feature make you feel?

Next, an online shopping exercise was conducted using the computers in the room. The participants were asked if they were able to use the computers and were informed that if they had any difficulties I would assist them. The computers were on and

ready to be used with the Safari browser running so as to alleviate some apprehension for those who were unfamiliar with Macintosh computers. There was no hesitation noted from the participants and nor did any of them encounter any problems during the exercise. The participants were instructed to select a Website that they had not used previously yet perceived as trustworthy, and then shop online for electronics. Then the participants were asked to answer the following questions:

1. What Website did you go to shop for electronics?
2. What kind of electronics did you search for?
3. What design features of the Website attracted you and made you feel that it is a trustworthy Website?
4. Would you actually purchase from this Website? Why? Why not?

During the exercise, I sat at the side of the room to allow students to complete the exercise in a non-threatening environment but still close enough to observe to determine whether or not they were having any difficulties using the computers. The exercise allowed the participants to demonstrate how they perceived electronics retailer Website's trustworthiness through the GUI design features. To close the focus group discussion, the participants were asked if they believed the Website GUI design features influence their perception of trust and decision to purchase.

Confidentiality

Confidentiality and privacy of the participants was maintained throughout the study. Virtual folders containing data gathered from the online survey were stored in a secured, password-protected server accessible only to the investigator. None of the data is

accessible to outside parties. The data that was transcribed into Microsoft Word documents and exported into a Microsoft Excel spreadsheet are password protected and stored in a private computer. A closed-door policy was implemented during the interviews and focus group discussions. Study procedures undertaken in this research complied with the standards imposed by the Institutional Review Board of the university.

Data Analysis

Quantitative data gathered from the survey, was analyzed using mean (M), standard deviation (SD), and Pearson Correlation (r). SPSS was used to compute for the data analysis and to present the data in graphical charts.

The mean and standard deviation of the respondents' ratings for each of the 14 design features were calculated. Computing for the mean revealed the average rating given by the respondents for each design feature. On the other hand, computing for the standard deviation for each design feature revealed how much the ratings of college students varied from the mean. From this, I was able to convey how the respondents perceive trust through each design factor.

Pearson correlation was conducted to test the relationship between the demographic data of the respondents and the ratings for each design feature. Given the exploratory nature of this study and small sample size of the data, an alpha level of .05 ($\alpha = .05$) was selected to limit the probability of making a Type I error which is to reject the null hypothesis when the null hypothesis is true. An alpha level of .05 denoted that the correlation is correct 95%.

Content Analysis

“Qualitative Analysis transforms data into findings. No formula exists for that transformation. Guidance, yes. But no recipe...The final destination remains unique for each inquirer, known only when – and if – arrived at” (Patton, 2002, p. 432). Once data was collected, the next step was to prepare the plethora of data and start the analysis. Qualitative data analysis is the process of searching for general statements that may be said to be true about the relationships and underlying themes from the data collected.

“The process of bringing order, structure and interpretation to a mass of collected data is messy, ambiguous, time-consuming, creative and fascinating.” (Marshall et al., 2006, p. 154) With this in mind, I planned to make sense of the textual and visual data collected by using the technique of content analysis. Content analysis is “a phase of information processing in which communications content is transformed, through objective and systematic application of categorization rules, into data that can be summarized and compared” (Paisley, 1969, p. 133). Communication content in the form of transcripts from the interviews and focus groups as well as visual data noted were systematically organized into categories and themes through coding.

Coding Procedures

According to Lindlof et al. (2002) the first systematic effort at data analysis comes with the creation of codes and categories. Coding is defined as “the process of organizing the material into chunks or segments of text before bringing meaning to information” (Creswell, 2009, p. 186). Tesch (1990) provided useful analysis of the eight steps in the coding process. These steps served as a guide in the coding the data I collected in this study:

1. Get a sense of the whole. Read all the transcriptions carefully. Perhaps jot down some ideas as they come to mind.
2. Pick one document (i.e., one interview) - the most interesting one, the shortest, the one on the top of the pile. Go through it, asking yourself, "What is this about?" Do not think about the substance of the information but its underlying meaning. Write thoughts in the margin.
3. When you have completed this task for several participants, make a list of all topics. Cluster together similar topics. Form these topics into columns, perhaps arrayed as major topics, unique topics, and leftovers.
4. Now take this list and go back to your data. Abbreviate the topics as codes and write the codes next to the appropriate segments of the text. Try this preliminary organizing scheme to see if new categories and codes emerge.
5. Find the most descriptive wording for your topics and turn them into categories. Look for ways of reducing your total list of categories by grouping topics that relate to each other. Perhaps draw lines between your categories to show interrelationships.
6. Make a final decision on the abbreviation for each category and alphabetize these codes.
7. Assemble the data material belonging to each category in one place and perform a preliminary analysis.
8. If necessary, recode your existing data. (pp.142-145)

The transcripts from my handwritten notes for each interview as well as my field notes from the focus group discussion were immediately encoded into Microsoft Word.

The transcript was formatted to have a 4-inch right margin to provide space for comments and patterns that were noticed. After encoding, each transcript was read and re-read to ensure that I internalize the data while asking myself, “What is going on?” and “What is this about?” When patterns started to form while reading the transcripts, I started jotting down patterns in pencil and encircling words in my notes that prompted each patterns. Colored pens were used to distinguish topics that related to each other into categories. In a separate notebook, I began to finalize categories and then codes to develop themes.

Once the initial themes were identified, an email was sent out to the interview and focus group participants to share the themes with them. Participants were asked if they agreed with the findings of the research to which all of them affirmed. This strategy of member checking validated the accuracy of the qualitative findings by determining if the participants deemed the findings to be accurate.

Conclusion

Establishing the framework of the research by selecting the research method gave shape to the research conducted. This was a major step in the research process as it laid out the strategies executed in data gathering to achieve the goal of this research and address the research questions. From establishing the knowledge claims, strategies of inquiry and methods that constitute this research, the appropriate approach in tackling the research problem was determined. Validating strategies—such as triangulation, member checking, and clarifying bias—were employed to ensure the credibility and authenticity of this investigation while carrying out the data collection process.

In the next chapter, the data collected from the surveys, interviews and focus group will be reported. The discussion of the three themes that emerged as well as the

summary, limitations, and recommendations of this research will be discussed in Chapter V.

CHAPTER IV

DATA

The purpose of this research was to explore how college students perceive electronics retailers' Website trustworthiness through Graphical User Interface (GUI) design features. To gather data for this study, surveys, interviews, and focus group discussion were conducted to probe into college students' perception of trust based on Website design features. In this chapter, the survey results are reported and a narrative description of the participants is provided. The data gathered from the interviews and focus group discussion is also reported.

Survey

Description of Participants

A total of 67 students participated in the online survey. Eighteen survey responses were eliminated from the dataset including 17 survey responses that were incomplete. One survey response was eliminated from the dataset as it showed during the analysis that including the data with the case reveal significant correlations but dropping it does not. For that reason, the outlier was eliminated to ensure the generalizability of the results best applies to respondents who exhibit similar characteristics.

Forty-nine students completed survey responses and were included in the dataset. The 49 survey participants were composed of 30 male students and 19 female students in different academic year levels. Sixteen percent were freshmen, 25% were sophomores,

30% were juniors, and the remaining 28% were seniors. The average age of the participants was 21 years old.

The student participants revealed that they spent an average of five hours on the Internet every day. Since they started shopping online, 53% of the students had purchased more than five electronic items while 47% purchased four electronic items or less. Twenty percent of the respondents have not shopped for electronics online. Out of the 49 respondents, 33% said online retailers had cheated them previously.

Survey Data

In this section, I provide survey respondents' ratings as well as the results of the analysis of means and standard deviations for each design feature. Students were asked to rate 14 design features in a 10-point Likert-scale: 10 being extremely important, 5 being neutral and 1 being not important. The 14 design features that were identified by Wang et al. (2005a) and rated by the respondents are as follows:

1. Use of three-dimensional and half-screen size images
2. Use of symmetric moderate pastel colors of low brightness and cool tone
3. Use of photographs
4. Easy-to-use navigation
5. Access of information
6. Use of navigation reinforcement
7. Application of page design techniques
8. Display of brand-promoting information
9. Up-front disclosure of all aspects of customer relationships
10. Display of seals of approval or third-party certificates

11. Comprehensive, correct, and current product information
12. Use of a relevant domain name
13. Inclusion of representative photographs or video clips
14. Use of synchronous communication media

Design Feature 1: Use of three-dimensional and half-screen size images

Thirty-three percent of respondents rated the use of three-dimensional and half-screen size images on the home page as a 5 whereas only 2% rated it as a 2 in terms of importance in influencing their trust perception. Students' overall response to this question was neutral ($M = 5.02$, $SD = 2.41$). However, variability of survey responses was high which means that a significant number of respondents gave differing ratings for this design feature. Thirty-nine percent of the respondents indicated varied levels of importance of the design feature in influencing their trust.

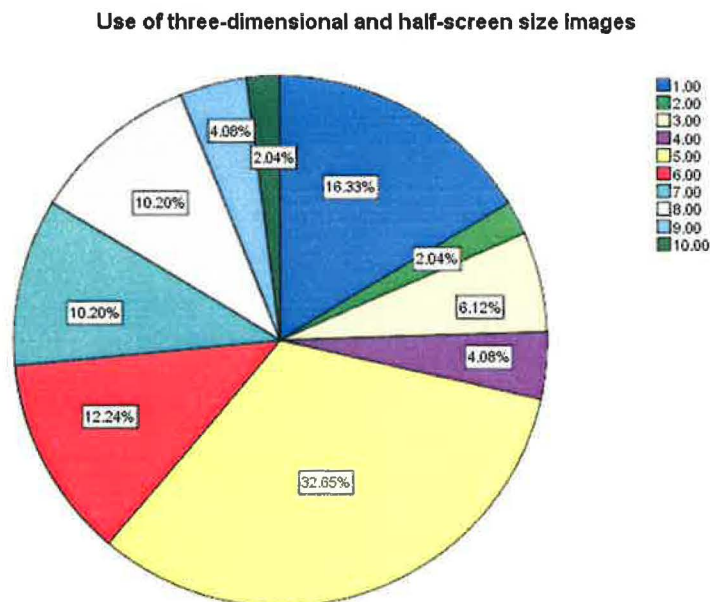


Figure 1. Distribution of responses to survey question 1: How important is the use of three-dimensional and half-screen size images on the home page in influencing your trust?

Design Feature 2: Use of symmetric (balanced), moderate pastel colors of low brightness and cool tone

Twenty-four percent of the respondents rated the use of symmetric (balanced), moderate pastel colors of low brightness, and cool tone on the Web pages as a 7 while only 2% rated it as an 8 in terms of importance in influencing their trust perception. Students' overall response to this question was positive ($M = 5.41, SD = 2.49$).

Use of symmetric (balanced), moderate pastel colors of low brightness and cool tone

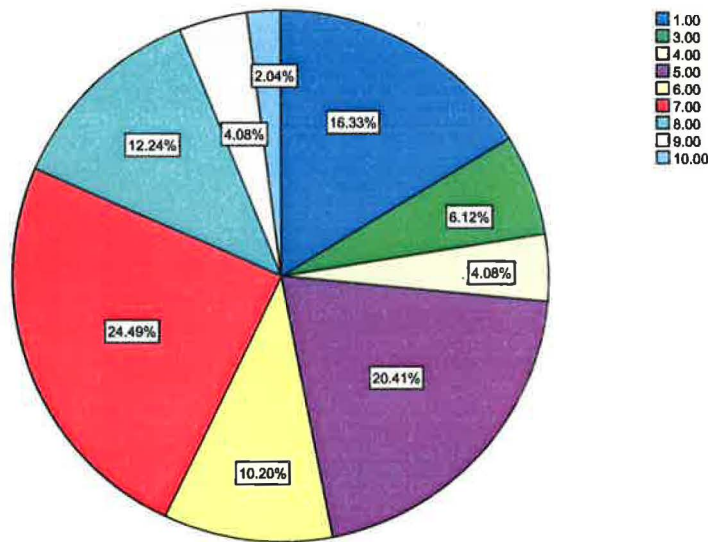


Figure2. Distribution of responses to survey question 2: How important is the use of symmetric (balanced), moderate pastel colors of low brightness and cool tone on the Web pages in affecting your trust?

Design Feature 3: Use of photographs

For the use of photographs on the Web pages, a larger percentage of the respondents (29%) rated the design feature as an 8 in terms of importance in influencing their trust perception. On the other hand, only about 6 % of the respondents gave a

negative rating for this design feature. Students' overall response to this question was positive ($M = 7.55$ $SD = 1.95$).

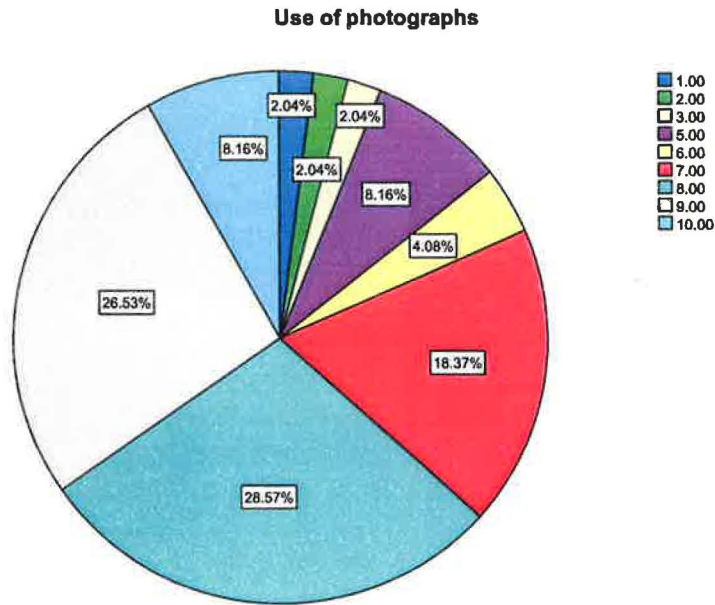


Figure 3. Distribution of responses to survey question 3: How important is the use of photographs on the Web pages in influencing your trust?

Design Feature 4: Easy-to-use navigation

A larger percentage of the respondents (29%) rated easy-to-use navigation on the Web pages as a 10 whereas only 2% gave it a rating of 1 in terms of importance in influencing their trust perception. Students' overall response to this question was positive ($M = 8.10$, $SD = 1.84$).

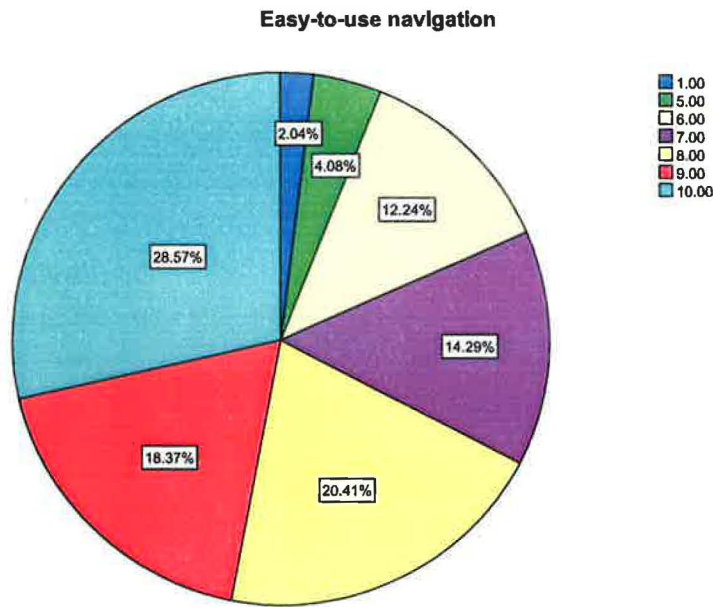


Figure 4. Distribution of responses to survey question 4: How important is easy-to-use navigation on the Web pages in affecting your trust?

Design Feature 5: Access of information

A larger percentage of the respondents (29%) gave the access of information a rating of 9 in terms of importance in influencing their trust perceptions. On the other hand, only two percent of the respondents rated this design feature as not important in influencing their trust. Students' overall response to this question was positive ($M = 8.45$, $SD = 1.62$).

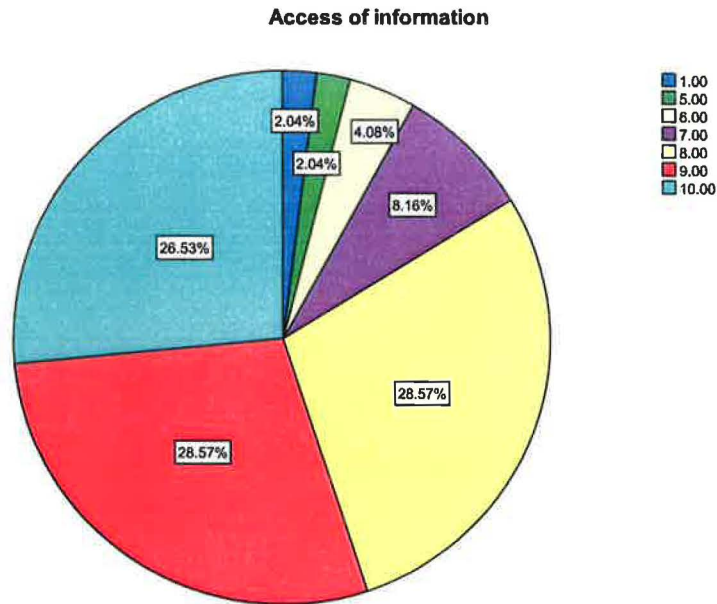


Figure 5. Distribution of responses to survey question 5: How important is the access of information (do the links and images work) on the Web pages in influencing your trust?

Design Feature 6: Use of navigation reinforcement

Twenty-four percent of the respondents gave the use of navigation reinforcement on the Web pages a rating of 9 in terms of importance in influencing their trust perception. On the other hand, only about 8% of the respondents gave this design feature a negative rating in influencing their trust. Students' overall response to this question was positive ($M = 6.98, SD = 1.80$).

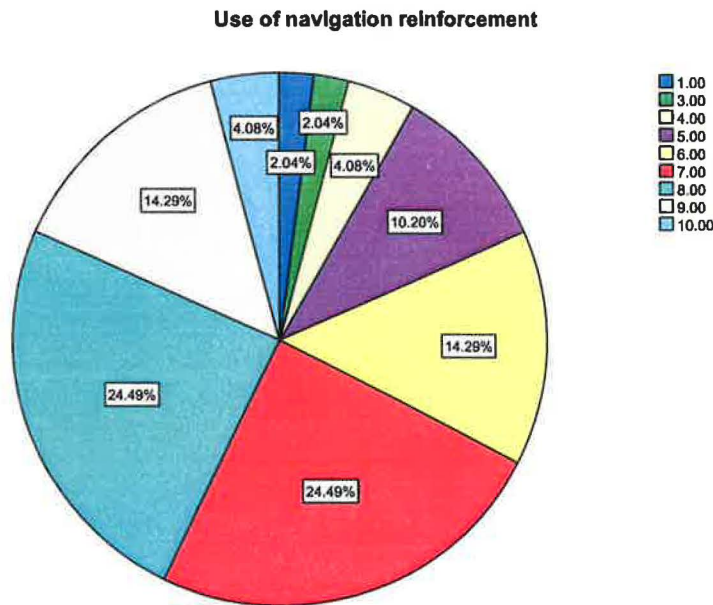


Figure 6. Distribution of responses to survey question 6: How important is the use of navigation reinforcement on the Web pages in affecting your trust? (navigation anchors like "Home >(product category) > (product)" near the upper left side when you click on a specific category/product)

Design Feature 7: Application of page design techniques

Twenty-two percent of the respondents rated the application of page design techniques as a 5 whereas only 4% gave it a 2 in terms of importance in influencing their trust perception. Students' overall response to this question was neutral ($M = 5.96$, $SD = 2.27$). However, variability of survey responses was high which means that a significant number of respondents gave differing ratings for this design feature. About 47% of the respondents indicated varied levels of importance of the design feature in influencing their trust.

Application of page design techniques

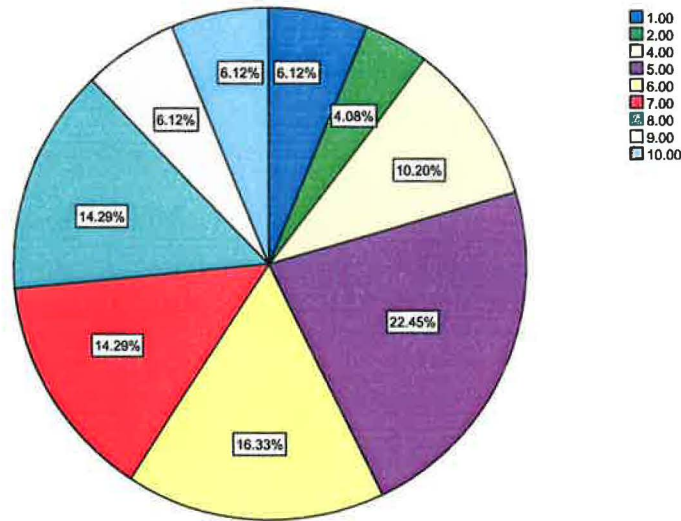


Figure 7. Distribution of responses to survey question 7: How important is the application of page design techniques, like use of ample white space and adequate margins or strict grouping of related information and low visual density, on the Web pages in influencing your trust?

Design Feature 8: Display of brand-promoting information

Eighteen percent of the respondents rated the display of brand-promoting information (company logo and slogan) on the Web pages as a 7 while another 18% gave it a rating of 10 in terms of importance in influencing their trust perception. Students' overall response to this question was positive ($M = 7.18, SD = 2.52$).

Display of brand-promoting information

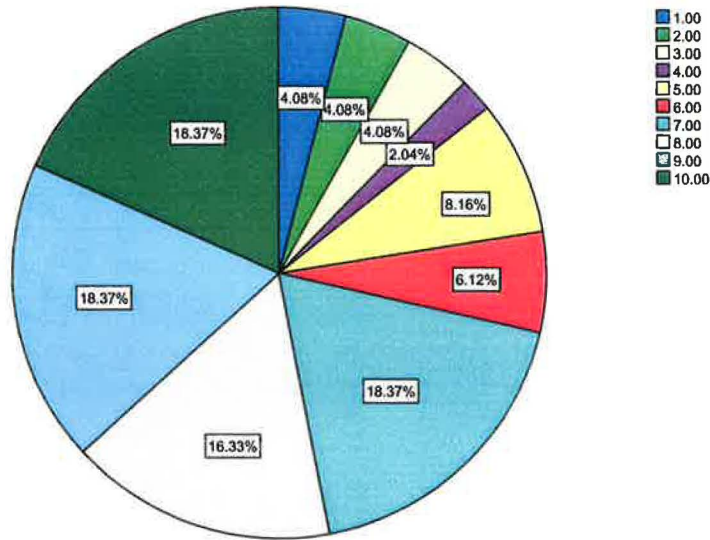


Figure 8. Distribution of responses to survey question 8: How important is the display of brand-promoting information (company logo and slogan) on the Web pages in affecting your trust?

Design Feature 9: Up-front disclosure of all aspects of customer relationships

Forty-one percent of the respondents rated the up-front disclosure of all aspects of customer relationships as a 10 in terms of importance in influencing their trust perception. None of the respondents gave this design feature a negative rating of 4 or lower. Students' overall response to this question was positive ($M = 8.65$, $SD = 1.56$).

Up-front disclosure of all aspects of customer relationships

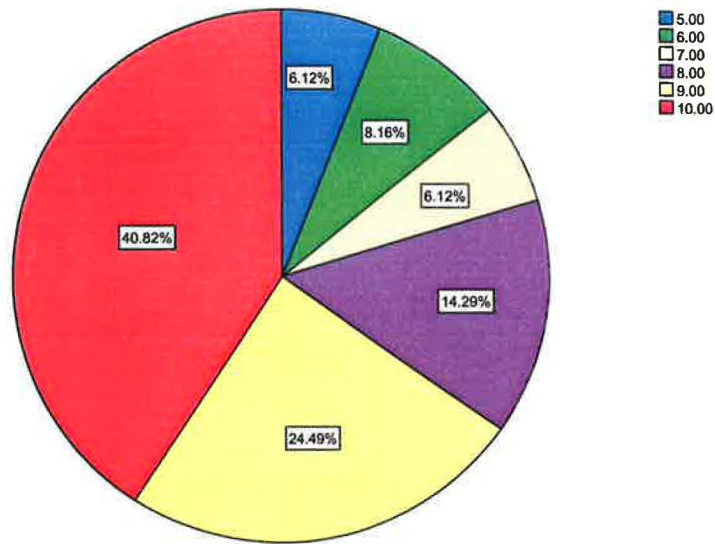


Figure 9. Distribution of responses to survey question 9: How important is up-front disclosure of all aspects of customer relationships like policies on shipping, return and price match, as well as privacy policy and site security in influencing your trust?

Design Feature 10: Display of seals of approval or third-party certificates

A larger percentage of the respondents (29%) rated the display of seals of approval or third party certificates as a 10 in terms of importance in influencing their trust perception. On the other hand, only about 10% gave this design feature a negative rating of 4 or lower. Students' overall response to this question was positive ($M = 7.78$, $SD = 2.29$).

Display of seals of approval or third-party certificates

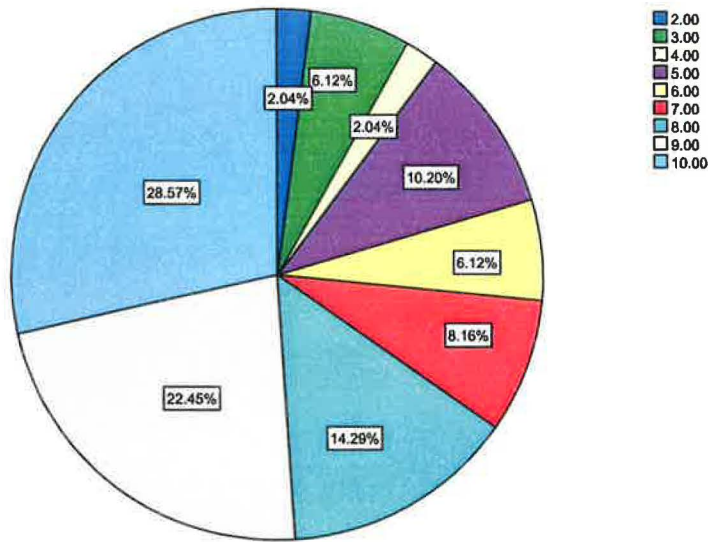


Figure 10. Distribution of responses to survey question 10: How important is the display of seals of approval or third-party certificates like BBBOnline, McAfee and VeriSign seals in affecting your trust?

Design Feature 11: Comprehensive, correct, and current product information

Thirty-one percent of the respondents rated the comprehensive, correct, and current product information as a 10 where as only 2% gave it a 1 in terms of importance in influencing their trust perception. Students' overall response to this question was positive ($M = 8.61, SD = 1.17$).

Comprehensive, correct, and current product information

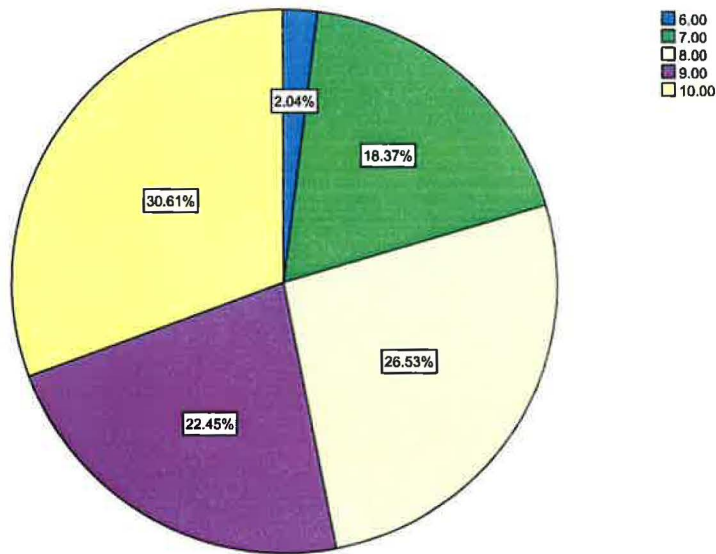


Figure 11. Distribution of responses to survey question 11: How important is the comprehensive, correct, and current product information in influencing your trust?

Design Feature 12: Use of a relevant domain name

Eighteen percent of the respondents rated the display of brand-promoting information (company logo and slogan) on the Web pages as a 9 while another 18% gave it a rating of 8 in terms of importance in influencing their trust perception. Students' overall response to this question was positive ($M = 6.80, SD = 2.64$).

Use of a relevant domain name

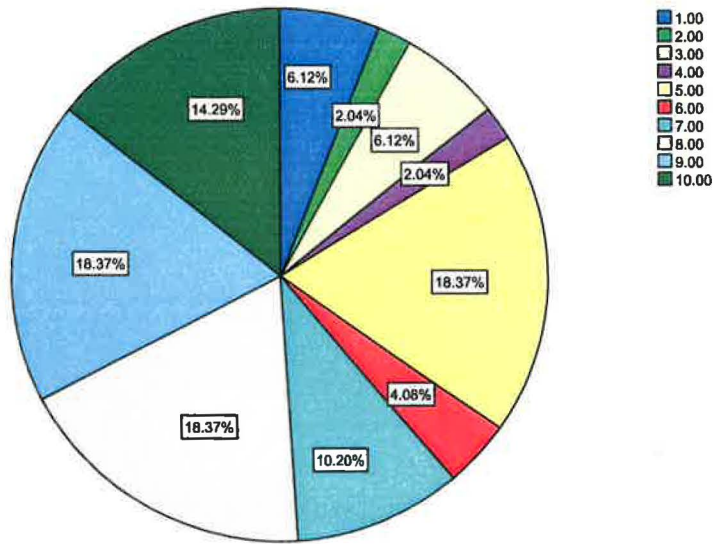


Figure 12. Distribution of responses to survey question 12: How important is the use of a relevant domain name in affecting your trust? For example, the domain name of www.abt.com is named after the founder of the company, David Abt.

Design Feature 13: Inclusion of representative photographs or video clips

A larger percentage of the respondents (18%) rated the inclusion of representative photographs or video clips as an 8 whereas only 2% gave it a 2 in terms of importance in influencing their trust perception. Students' overall response to this question was positive ($M = 6.73, SD = 2.45$).

Inclusion of representative photographs or video clips

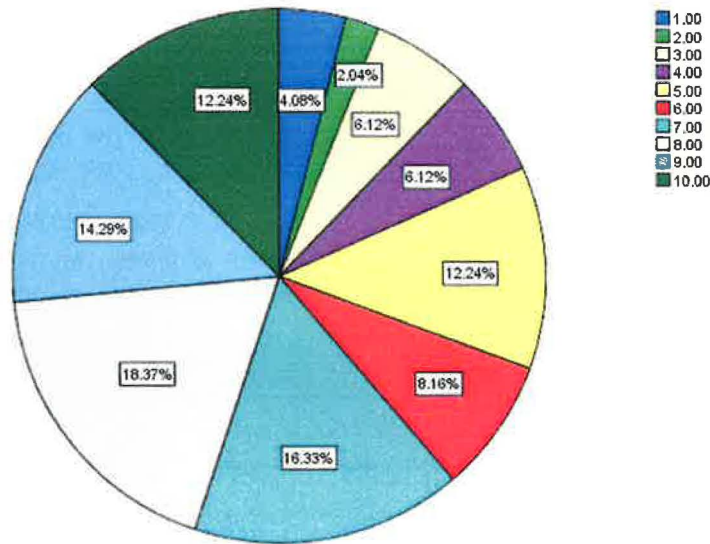


Figure 13. Distribution of responses to survey question 13: How important is the inclusion of representative photographs or video clips, like the picture of a representative at the bottom of the page, in influencing your trust?

Design Feature 14: Use of synchronous communication media

For the last design feature, 18% of the respondents rated the use of synchronous communication media as an 8 in terms of importance in influencing their trust perception. Another 14% of the respondents gave this design feature a rating of 9 where as only 2% gave it a 1 in terms of influencing their trust perceptions. Students' overall response to this question was positive ($M = 6.12, SD = 2.62$).

Use of synchronous communication media

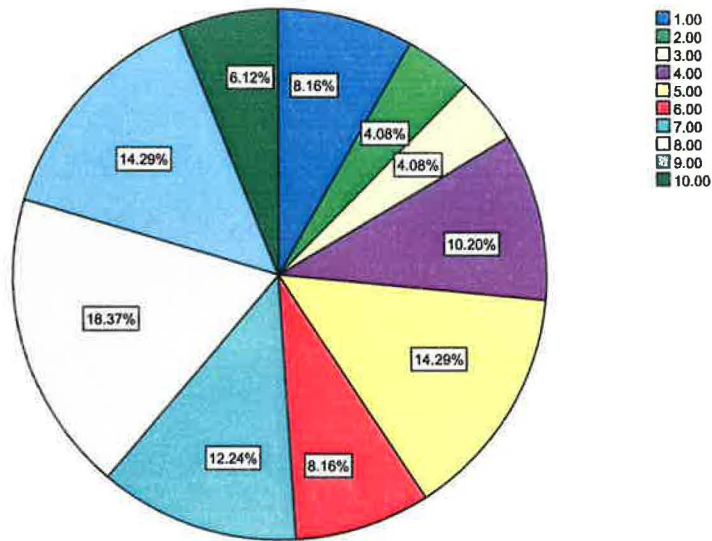


Figure 14. Distribution of responses to survey question 14: How important is the use of synchronous communication media, like a link for "Live Chat" where users can exchange instant messages with a sales representative at the top center of the page in affecting your trust?

Overall perception of Abt.com Website

In terms of the overall perception of trust of the sample Website, Abt Electronics, 35% of the respondents gave a rating of 8 whereas only 2% gave it a negative rating of 3. Students' overall response to this question was positive ($M = 7.90$, $SD = 1.56$). Most students (34%) indicated that overall, they perceived the Abt electronics Website as trustworthy.

Overall perception of Abt.com Website

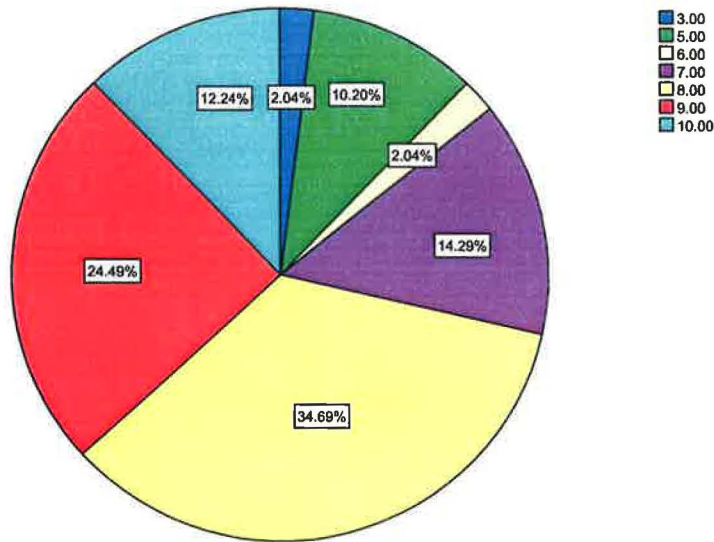


Figure 15. Distribution of responses to survey question 15: Please rate your overall level of trust of the Abt Electronics Website.

From this data, respondents gave each design feature a rating of 5 or higher. The respondents gave 12 design features a rating of 6 or higher in terms of influencing their perception of trust in electronics retailer Websites.

Results of Pearson correlation

Pearson correlation was conducted using SPSS to compare the relationship between the demographic of the respondents and ratings for each design feature. An alpha level of .05 ($\alpha = .05$) was the set significance level of the correlation. Analysis show that there was a negative correlation between the experience of being cheated by an online retailer and the importance of comprehensive, correct, and current product information ($r = -0.317, p = 0.03$).

Correlation of the demographic and the overall level of trust in the Abt Electronics Website were also tested. However, no significant relationship was observed between the other characteristics of the sample data and overall perception of trust on the Abt Electronics Website.

Analysis of Survey Results

The survey conducted to 49 college students suggest that the 14 GUI design features proposed by Wang et al. (2005a) may influence trust perceptions of college students in electronics retailer Websites. In addition, the results of this study support the findings of Wang et al. (2005b) that their proposed framework of design features were important in inducing online trust. However, Wang et al. did not report the mean ratings for each design feature in their study, thus I am unable to compare them with the results of the survey from college students.

Three design features—up-front disclosure of all aspects of customer relationships; comprehensive, correct, and current product information as well as access of information—were identified as most important to college students in terms of influencing their perceptions of Website trustworthiness. On the other hand, college students identified that the use of symmetric, moderate pastel colors of low brightness and cool tone in the GUI have neutral influence to their perception of trust. Lastly, it was observed that college students who experienced being cheated by online retailers tend to give higher importance in the provision of comprehensive, correct, and current product information in the GUI in terms of influencing their trust.

Interview

Description of Participants

Out of the 49 survey participants, 11 students volunteered for follow-up, one-on-one interviews. From the pool of volunteers, four students were selected based on convenience and availability. Interviewees were met at a time and date that was suitable for them.

In this section, I will discuss participants' perspectives by providing the readers with the following information: a) background, b) design factors and trust perceptions, c) survey responses, and d) purchasing decision. The names of the participants were changed to maintain confidentiality.

Student Amanda

Background

Amanda is a freshman majoring in International Studies. She was encouraged to shop online because of her brother and so she eventually decided to create accounts for herself and shop on her own. Since then, she has been an e-commerce customer for five years and has been purchasing items she needs for school, such as books and electronics. She spends an average of seven hours online everyday and has purchased electronics through online retailers. She has not been cheated by an online retailer and likes to research prior to purchasing.

When Amanda first started shopping, she said her hesitations include giving out credit card information. For her, this was "scary" because she did not know if her information would be stolen or if significant charges would be made to her credit card.

She said that she first started online shopping through well-known online retailers such as Wal-Mart and EBay.

Design factors and trust perceptions

Amanda said that her basis for a Website that is trustworthy is if it looks professional and reminds her of the Websites she usually visits and trusts, such as EBay, Wal-Mart, Dell, Apple and Target. "If so, then I think the Website is trustworthy too." For her a trustworthy Website should look like time, money, and effort was invested by the online retailer in creating the Website.

Color is the first design feature that catches Amanda's attention. She further described a trustworthy-looking Website to have "crisp, clean colors and not too much color that it overwhelms." For Amanda, seeing cool colors such as blue is helpful in influencing her trust perception because this reminds her of the Websites she frequently visits.

The second design factor that Amanda said influences her trust perception was pictures. "I also like the big banners that show pictures of their featured or latest products," Amanda said. She then proceeded to show me the Abt Electronics Website (www.abt.com) and pointed out the photo presentation using Adobe Flash Player.

Amanda shared that easy navigation is another important factor in her trust perception. For her, Websites that have drop-down menus and properly categorized divisions are easy to navigate. She said, "Sometimes if I cannot find what I am looking for easily, I will just give up and go to another Website." She further relates that if a Website has menus that are easy to navigate, then "it seems like the company is well-organized."

Amanda also pointed out that she likes to see the company's contact information up-front and written in a big font size. This design factor gives her the impression that she can talk to someone anytime she needs help and that if she has questions and problems when shopping, she can call the online retailer.

Two other design factors that Amanda described are customer reviews and ratings of sellers. She said that especially for electronics, she has to see if the item actually works and how well they work for others. "When I was buying my iPod, even though I know that Apple is a good company, I still looked at reviews to see differing opinions," she explained. When shopping in eBay, wherein different individual sellers are involved, she looks at the star rating that shows if they have mostly positive reviews from previous customers. She appreciates that eBay recognizes and shows the capability of the sellers. Amanda usually bases major purchasing decisions based on customer reviews.

Survey responses

After we discussed the design factors that she looks for in the GUI's of electronics retailers Websites, we proceeded to discuss her survey responses. The numbers listed below correspond to her survey responses.

1. Amanda gave a rating of 9 for the use of three-dimensional (3D) and half-screen sized images on the home page in terms of influencing her trust. She said that a 3D image is similar to the product description because it shows her exactly how the product should look. For her, half-screen sized images "attract your attention and enhance the look of the Website and therefore enhancing your trust."

2. Amanda gave a rating of 8 for the use of symmetric and moderate pastel colors of low brightness and cool tone on the Web pages in terms of influencing her perception

of trust. She explained that colors that are too bright are “overbearing” and disorients her. Such colors make her not want to buy from the Website. She associated loud and flamboyant colors with “home-made” Websites that for her cannot be trusted.

3. She gave a rating of 7 for the use of photographs on Web pages in terms of influencing her perception of trust. For her, photographs give concrete evidence of the products that she wants to buy. “It enhances your trust because you can actually see what you are buying,” she explained.

4. She gave a rating of 6 for easy-to-use navigation on the Web pages. However, she explained that it is “super important” to her because a disorganized navigation makes the company seem like they did not invest time and effort in organizing their Website. She said, “if they can do that then, how am I supposed to trust them with my information and to give me the correct product?”

5. She rated the access of information as a 10 in terms of importance in influencing her trust. She explained that broken links and page cannot be found errors make it seem to her that the site is not kept well and the company does not put in enough time and effort for the Website. This makes the Website appear “shady” to her. For Amanda, providing accurate information on Websites shows quality and commitment.

6. Next she gave a rating of 8 for the use of navigation reinforcement on the Web pages. She explained that navigation anchors improve the ease of navigation when shopping online. She explained that her trust of the company and the Website increases “if it is easy, comfortable and not frustrating to shop” because she will have a good experience with them.

7. Amanda rated the application of page design techniques as a 7 in terms of

influencing her trust. She explained that using ample white space, adequate margins, strict grouping of related information and low visual density gives Websites clean, professional look and good organization. “If it looks professional, then you trust it more and if its organized then you are more satisfied with the site,” she said.

8. For Amanda, the display of brand-promoting information such as company logo and slogans on the Web pages is one of the most important design factors influencing her trust. She said that logos and slogans are what reminds her about the Website and indicates how old the company is. She explained that showing when the company has been established is an indicator of how trustworthy the company is. Also, clever slogans make her like a Website better. She said, “Slogans are very important like how Wal-Mart says 'Save money Live better'; it entices you and tells you what to expect.”

9. For the upfront disclosure of all aspects of customer relationship, Amanda gave a rating of 10. This is another design feature that she rated of highest importance in influencing her trust perception. She explained that if there are any hidden shipping fees she would feel “screwed over” and would not be happy with the online retailer. Also seeing the return policies on the Website give her confidence that if she does not like what she purchases, she can return the product. She further explained that the upfront disclosure of policies guarantees her that she is covered and take legal actions in case the company violates their policies.

10. On the other hand, she gave a rating of 5 for the display of seals of approvals or third party certificates. This signifies that seeing this design factor has neutral influence in her perception of trust. She said that the reason that she gave this rating is

because she has never actively looked for such seals of approval on the Websites she visited. Nevertheless, she said that when she encounters these seals of approval, she would then perceive that the Website is trustworthier.

11. She also gave a rating 10 for comprehensive, correct, and current product information in terms of influencing her trust. She said that the product information shown on the Website sets the expectation about the product. "They should put comprehensive information so the customer does not feel disillusioned," she said. She also explained that if a product is not what she expected, she would probably not buy from that online retailer again and would warn others to stay away from the online retailer.

12. The use of a relevant domain name was given a rating of 9 in terms of importance influencing Amanda's trust. She explained that for most domain names, it does not really matter to her what the origin is but, "if it was www.imreallycoolsoyoushouldbuyfromme.com, I would totally not trust it. It sound like a 13 year old designed the site," she related.

13. The inclusion of representative photograph or video clips is also one of the most important for Amanda in terms of influencing her perception of trust on the Website. To see a picture of a representative from the company allows her to see a face that goes with the company. She explained that the pictures must be presentable, "not a greasy hacker dude." She then referred to the Abt Electronics Website and described that the representative should look put-well together, look fatherly, business-like and appears trustworthy. She associated a trustworthy-looking representative to the company and said, "if the representative appears trustworthy, then probably the company is trustworthy."

14. Lastly, she rated the use of synchronous communication media such as live

chat, as the lowest in terms of importance in influencing her trust. She said that this is because of a bad experience she had using live chats that would not work. “One time I needed to fix my virus protection, I was able to message back and forth but the person was not helpful and eventually asked me to contact another person that I was not able to reach,” she related. From this unfavorable experience, she had an impression that live chat seems “sketchy” because she believes that she is not guaranteed that the person she is chatting with give his full attention compared to talking to a representative over the phone.

Overall, she explained that if a Website looks professional, she perceives it to look more trustworthy because of the time, effort and money that the company invested in designing the Website. “If the Website looks home-made or simple like anybody can just make it up, then I do not really trust that Website.”

Purchasing decision

When asked how influential Website design factors are in how she perceives a Website as trustworthy and in her decision where to shop online, she explained that, “design features are integral in how I perceive a Website as trustworthy because if they are not there, I would not trust the Website initially.” She stressed that, “design influences trust initially but the Website should also have something to back it up.” Although design is a factor in her decision to purchase from a Website, she also looks at product prices, if they are reasonably lower than others. She also said that her familiarity with a Website and recommendations from friends also factor in her choice of online shopping Websites.

Student Bree

Background

Bree is an international student in her freshman year majoring in Biology. She spends at least one hour a day on the Internet but has not purchased electronics online. Bree related that she did not start online shopping until she moved to the United States to study. She said that this is because in her home country, it is uncommon to shop online. She has not seen her parents nor her friends shopped online. She has not made electronics purchases online because as of that time, she did not have the need for electronics. Bree said she did not trust online shopping when buying items that are expensive like most electronics are.

On the other hand, Bree considers herself to be more oriented with online shopping after being in the United States for a year. She also believes that though she trusts online shopping more now, she still finds herself purchasing products in an actual store after checking prices online.

Design factors and trust perceptions

The company logo is one of the first design factors that Bree looks for in a Website when browsing for online shopping Websites. Together with the logo, the official color of the company is another factor she notices initially. She showed me Wal-Mart's official Website and explained, "for example, I am buying from Wal-Mart, I expect the Website to be blue, I do not expect it to be red, same in Target, I expect it to be red. If I see blue in the Target Website, I will think maybe it is not the official Website. Basically, I connect what I know about the store". For unfamiliar Websites, whose official logo or color are unknown to her, she said that she will associate the look of the

Website with what she sees in Wal-Mart or any other Website she knows. She then explained specific design factors that she associates as professional and trustworthy Websites.

She explained that easy navigation features such as products with pictures that are arranged by categories and links that are easily accessible makes it more convenient for her to search and find what she wants. If the unfamiliar Website has the usual navigation procedures that she sees in Websites she is familiar with, this gives her a positive impression about the Website. "If the categories are specific and easy to navigate and pretty similar to other Websites like Wal-Mart, or others that I already used, then I would think it is an actual shopping Website", Bree explained.

Bree wants to be constantly informed of where the products she bought are located. Thus, she looks for the tracking policies of the online retailer and makes sure that she agreed with them. For Websites that have different individual sellers such as Amazon, she also looks for the sellers return policies because she wants to know that if she does not like what she purchased, she has the option of returning the item.

Bree also looks for the overall rating of the seller. "For sellers in Amazon or EBay, I think a rating of 96% is when I can say that the seller is ok," she explained. On the other hand, she admitted that she only browses through the customer comments and does not read them in-depth as she believes they are personal opinions of previous customers. She further reasoned that "some people put some crazy stuff in there about the seller," and so she does not take the customer comments too seriously.

She also pointed out that only items such as books can she buy used rather than new. For electronics, she admitted that even if the rating is 100% she would not buy an

item that has been used and would buy it new instead. She accounts this for the way she was brought up. "Even my Dad would not buy second hand. Although you pay more money, you are sure that nobody else used it before you." Even if the electronics gadget is new, she still expressed her hesitations about buying such items online given that most electronics can be priced higher. She explained that she will check the product details online but may still want to purchase the product in a regular store.

The next design factor that she discussed is product information. She said she has to read the information about what the item can do and its capacity. She explained that the basic information should be there. "If there is no information about the product, I will not trust it.. the more in depth the information, the more I trust it."

Bree pointed out that if Websites contain pop-up messages that force her to buy another product then she will not trust the Website. "I do not like the provoking messages that pop up in the screen forcing me to buy, especially for a college student like me who wants to save money." She explained that she would trust a Website more if it is easy to find the products that she likes. If she is given sufficient information about the product, then maybe she will purchase the item. She also said that a picture of the product is also a factor in her trust perception because it shows the product she will purchase. "I think if you find what you are looking for, it shows a picture and product details, it helps me have confidence on the Website," Bree explained.

Advertisements on big discount sales make her think that there will be a catch that comes along with the savings especially if it is as high as 80% off the original price. She said that she would look for information on why the retailer is selling their products at cheap prices, such as end of season sale, or holiday sales.

Order and listings of products is also an important factor in influencing her trust perception. "If it is all over the place then I would not trust it. I would not trust the people behind the company. It would seem like they have not been in the business long," she explained. For Bree, the Website must be easy to navigate and orderly.

Policies and rules must also be disclosed on the Website. She relates that if the product is hard to find it would seem to her that the Website does not specialize on such products. On the other hand, if she finds it easy for her to search for a product that she likes, it would seem to her that the retailer specializes on those products.

Survey responses

After we discussed the design factors that she looks for in the GUI's of electronics retailers Websites, we proceeded to discuss her survey responses. The numbers listed below correspond to her survey responses.

1. Bree rated the use of three-dimensional and half-screen size images on the Webpage as a 1 in terms of influencing her trust perception. She explained that 3D and half-screen sized images do not really help, as she is more particular on the product details.

2. She gave a rating of 6 for the use of symmetric (balanced), moderate pastel colors of low brightness and cool tone on the Webpage in terms of affecting her trust perceptions. She explained, "I gave it a more positive rating but not really a 10 because it is (pastel colors) important but the only reason is because based on experience the pop-ups and the scam Websites like 'You're the 100th customer...' are bright-colored." She also said that she thinks that low brightness and cool colors are more suitable for online shopping since one would have to spend a lot of time in front of the computer when

browsing through Websites. Lastly, she believes that having one or two colors in a Website is more suitable than having different colors.

3. She gave a rating of 5 for the use of photographs on the Web pages signifying that this design factor has neutral influence in her trust perceptions. She explained that while photographs help, it does not greatly affect or change her opinion about the Website. "If the Website takes me to the product I want and if there is a photograph of the product I am just about to buy, that would greatly help. But just photographs would not affect the way I think," she explained.

4. She rated the easy-to-use navigation on the Website as a 7 in terms of influencing her trust perception. She believes that easy-to-use navigation is important when it comes to perceiving a Website as trustworthy. She explained, "If I am looking for something to buy and it is hard to find, I would eventually start wondering if this Website or company is even associated with the product.. If I were to trust the Website, I would definitely want it to be easy to find what I want and not have to spend a lot of time on it."

5. The access of information is important for Bree and so she gave it a rating of 9 in terms of influencing her trust perception. She said, "If the links and images take me to places other than the product I am trying to buy, I would not trust the Website at all." She expects that the images shown on the Website to be precise and the links will not direct her to false details.

6. Bree rated the use of navigation reinforcement on the Webpage as a 7 in terms of affecting her trust perception. She said, "Maybe I would not be familiar with the Website at first but I expect it to be similar with other Websites such as Wal-Mart, Target, Best Buy or other stores that sells such products. Being familiar with other similar

Websites help in trusting it more rather than finding some completely different navigation procedures” She explained that she sees navigation anchors in other Websites that she usually uses, thus, when she sees this design factor in an unfamiliar Website she would then assume that she will be able to navigate through the Website.

7. The application of page design techniques has neutral influence in Bree's trust perception and she gave it a rating of 5. She explained that while techniques such as adequate margins and low visual density would make it easy for a customer to navigate through the Website, this would not affect have much effect in her trust perception. Nevertheless, she said that if the Website is “easy on the eye” that would be more influential to her perception of trust. She explained further that, “if I see a lot on it, it would not give me that much confidence. No bouncing fonts, just the main details and important information.”

8. Brand promoting information such as company logos and slogans influences Bree's trust perception and she gave it a rating of 9. She said that these design factors give a sense of security to the customer that the company is liable for any fraud. She also said that seeing the logo and slogan of the company indicates that she is still browsing on the same Website.

9. Bree rated the upfront disclosure of all aspects of customer relationship as one of the most important design features in influencing her trust perception. She explained that having adequate information about the online retailer she is buying from is helpful in trusting the Website. She specified that she always wants to know about the return policies of the retailer. In case she does not like the product, she should be able to return it.

10. She also gave a rating of 10 for the display of seals of approval or third party certificates. She explained that seeing such guarantees indicate that the Website is “certified and approved”.

11. Comprehensive, correct and current product information was also given a rating of 10 in terms of influencing her level of trust perception. She explained that when she receives the product she purchased and it matches the description on the Website, she would then continue to trust the Website.

12. She rated the use of relevant domain names as a 9 in terms of influencing her trust perception. She explained that having a proper domain name is important because, “if the domain name is the company's name it is like a person's name is attached to the Website.” For Bree, this gives her a guarantee that the Website is “true and legitimate.”

13. While Bree said that the inclusion of representative photographs or video clips gives a face to the company, she rated this design feature as a 5. She explained that this design feature does not affect her perception of trust.

14. Bree gave a rating of 3 for the use of synchronous communication media because according to her, design feature, such as live chat, does not significantly affect her trust perception. She explained that the reason behind this is because she would not know who she will be chatting with on the other end.

Purchasing decision

Overall, Bree said that if she were to rate the importance of design features in terms of influencing her decision to purchase; she would give it a 5 out of 10. While product details and easy navigation helps her find the products she wants without wasting time, she still believes that it does not necessarily mean that if a company put much effort

in a Website with complicated designs, it will automatically indicate that the Website is trustworthy.

Student Carl

Background

Carl is an international student and has been in the United States for more than three years. He is a junior majoring in Graphics Design Technology. He has had a number of experiences designing Websites for both work and school. He spends an average of 12 hours a day on the Internet. He also has purchased electronics online and has not experienced being cheated by an online retailer.

Prior to coming to the United States, he had no previous online shopping experience. He accounts this for online shopping not being popular in his home country. When he moved in the US, he started online shopping because “everybody’s doing it.” Initially, he had hesitations in giving out his credit card information and mailing address online. Now he believes that he is more comfortable shopping online.

Design factors and trust perceptions

When asked about what design factors influence his trust perception when shopping for electronics online, Carl said that for Websites like Amazon, he likes to see the comments and reviews posted about the product. He believes that customers will be more interested if they see that other customers, in addition to the online retailer’s description of the product, have reviewed the product.

The next design factor that he looks for are the actual pictures of the product. For Carl, if the Website features multiple pictures or 360-degree rotation of the product, it would seem to him that the company took the time to make sure that their products are

presentable.

Although he does not proactively read the retailers' policies, he still wants to see the links to security policies be posted on the Website as a guarantee that the Website is secured. He said, "It makes me feel better that the information I will put in is secured." He also said that, though it may be annoying at times, he thinks that it is a good feature when the Website logs off the user from the account after being idle for 15 to 20 minutes.

"I trust a Website if it looks like its professional in terms of its layout and design. When it seems like the company spent time on it or hired people to make the Website look presentable and it does not seem like it is just a high school student who made the Website." When asked to describe a professional looking Website for him, the first design factor Carl mentioned is the color of the Website. Carl said that for him the colors should be unified and the Website should have a solid color palette. He then showed me the Half.com Website (www.half.com) and demonstrated how each page has the same orange color scheme. For Carl this will signify to the customer that he/she is still on the same shopping Website.

He also pointed out that there should be logic on how products are categorized, links should be working, and prices must be up-to-date. "When you click on prices, it should stay the same because some Websites would change the prices once you select an item," he explained. "As a graphic and Web designer, I look at the latest trends in Web design," he said. Carl pointed out design factors such as using Adobe Flash Player to display multiple pictures, as well as other features that make the Website more interactive. He also said that if a Website has big pictures or about 35 to 50% of the page contains pictures, this design will capture his attention and would seem to him like it is a

professionally designed Website. On the other hand, if the pictures are pixilated, he admitted that it would automatically give him an impression that the Website is not trustworthy because the online retailers do not make an effort to present their products well.

He also said that, though he may commit the same mistake when designing a Website, he does not like seeing typographical errors on a Website. He said that such errors make him think that the company did not invest time to make sure it is free of inaccuracies. “This makes me think, although it may not be related, that it might be the same with their security policies. Like they did not take the time to make sure everything is correct,” he explained.

Lastly, Carl said that the name of the company is an important design factor as well. For him, bigger companies like Best Buy are easier to trust rather than smaller companies. Nevertheless, if he encounters a new and unfamiliar Website, he said, “if it is designed well—professional-looking, up-to-date, has flash features and good photographs—then I can say that I will look into it and trust it.”

Survey responses

After we discussed the design factors that Carl looks for in the GUI’s of electronics retailers Websites, we proceeded to discuss his survey responses. The numbers listed below correspond to his survey responses.

1. Carl rated the use of three-dimensional and half-screen size images on the home page as a 10 in terms of influencing his trust perception of the Website. He explained that bigger pictures are better for him because it gives him an idea about the product. He said, “I like things visually big since I do not physically see the product, I

want to make sure that everything I want from it is there.”

2. He gave a rating of 8 for the use of symmetric (balanced), moderate pastel colors of low brightness and cool tone on the Webpage in terms of influencing his trust perception. He explained that as a designer, he knows that proportion is an important design factor and that everything should be balanced. He also said that lighter colors makes it seem that a Website is easier to navigate while darker colors makes it seem like it is heavy in the eye. “For me it ties in the mood that when I look at the Website and I feel like I can breathe and easily navigate the site, then I feel like I can trust it,” he explained. He further explained that if a Website has heavy colors, such as when black dominates the interface, it makes him feel like the Website overwhelms him and the products are not showcased.

3. He rated the use of photographs in the Web pages as a 9 in terms of influencing his trust perception. He believes that since the photographs are the basis of what the customer is buying, the use of good pictures is a big factor that sells the company itself as well.

4. He gave the easy to use navigation on the Web pages a rating of 10 in terms of influencing his trust perception. He explained that the easier he can find what he wants, the better the shopping experience is for him. He said, “I do not like the navigation tabs to have more than three drop downs or sub-tabs because for me that's confusing.” He stressed that it is important that products are organized well and must be in the right categories.

5. He rated the access of information on the Web pages as a 9 in terms of influencing his trust perceptions. Carl explained that the information must be present and

links should work because, “it shows the company's dedication to the people who navigate their Website that they will get the information they want.” He also pointed out that ratings and product information must be clearly provided in the Website because, in online shopping, the retailer can only show their products through pictures and texts. Product information that is provided well significantly influences his perceptions of trust.

6. He rated the use of navigation reinforcement as a 7 in terms of influencing his trust perceptions. He admitted that although he does not pay much attention to navigation anchors, he thinks that it is helpful for mapping purposes. He believes that it enhances his shopping experience when he can easily jump from one page to the other.

7. Carl gave a rating of 7 for the application of page design techniques in terms of importance in influencing his trust perception. He explained that while he does not want a Website to have too much content (high visual density), he also does not like a Website to have too little information. He said that finding the right balance for visual density is important. Carl said, “If there is too much on the page, then I would not want to spend time trying to figure out where stuff is.”

Adequate margin is also an important design factor for Carl. He explained that though a Webpage may be filled with information, if it is margined and spaced well, he could still take the time to look through the Website. If the categorization of products were logical, he would spend time browsing through the Website.

8. Carl gave a rating of 10 for the display of brand promoting information on the Web pages. He explained that he believes that branding, logo and slogans are important design factors that influence his trust perception. Carl relates that if a company is known, then he will associate it with its logo, which indicates to him that he can trust the

company and therefore he trust the Website as well.

9. He gave a rating of 7 for the upfront disclosure of all aspects of customer relationship in terms of influencing his trust perception. He admitted that although he does not read these policies, he would still want to see the information displayed on the Website. He said, "It makes me more comfortable to give my information and to feel secured." He stressed the importance of displaying return policies so he can make sure that he can return a product if it does not turn out to be what he wants. With all these design factors on a Website, Carl said he will "feel like the company values their customers and they realize that it is online, and it might not be exactly what the customer wants or what they thought it was by just looking at the Website."

10. He gave the display of seals of approval or third party certificates a rating of 8 in terms of importance in influencing his trust perception. He explained that although he does not particularly look for it, he thinks that a retailer must have certifications and display the seals of approval on their Websites. He believes that by doing so, the customers would know that it is part of the service they offer.

11. Carl gave the comprehensive, correct, and current product information a rating of 10 in terms of importance in influencing his trust perception. He believes that since he can only see the product on the screen, the accurate information must be provided for him to be able to trust the company and the Website itself.

12. Carl gave the use of relevant domain name a rating of 8 in terms of affecting his trust perception. He explained that a relevant domain name is one of the most important design factors for him especially if the company is not familiar to him. He said that the domain name is a factor for him to remember the company.

13. For the inclusion of representative photographs or video clips, he gave a rating of 8 in terms of its importance in influencing his trust perception. “You know you are dealing with a computer but with a picture, you feel like it is more person-to-person.” he said. Adding a more personal touch to the Website somehow increases his perception of trust because for him, it indicates that there are actual people behind the company and that there are actual employees working on his order when he purchases online.

14. For the use of synchronous communication media, he gave a rating of 10. He said that this feature offers a faster alternative to calling the customer service line especially if he only has a quick question. He pointed out that he would like more Websites to have this feature. Lastly, he relates, “if I encounter a Website with this (pointing at the live chat link in the Abt Electronics Website), it tells me that the company cares, and wants you to have the best service that they can offer.”

Purchasing decision

Carl relates that, as a designer, it is important for him for a Website to be appealing and to have “catchy focal point” for him to decide whether to shop on a Website or not. He said that, “if they used current trends in designing a Website, if the details on the Website impresses me, and then that's how I start exploring it more. And hopefully what I see is good and that builds up my trust and I can see myself coming back to actually make a purchase.”

Student Dan

Background

Dan is a freshman student from the university. He started online shopping two years ago and he said he “just jumped right at it.” He spends an average of 10 hours a day

on the Internet. He has purchased electronics for his guitar online and had not been cheated by an online retailer. Dan will shop for more electronics online if the need arises.

When he first started online shopping, Dan worried about not receiving the correct product he ordered since he was not able to hold the product as he would when shopping in a traditional store. He said that though he was unaware before, he now knows the he is also at risk of identity theft when shopping online.

Design factors and trust perceptions

Dan discussed the four design factors that he looks for in a Website for him to perceive it as trustworthy. First, he said that the ambiance of the Website must be “pretty chill.” He explained that for him, this has a lot to do with the Website's layout and design. A Website for him must be “pleasing to the eye” and “not bland”. He described a bland Website to have a white background and only show pictures of the products. He said that he has encountered such bland Websites and did not feel like he can trust them and that he did not make any purchase from the online retailer. For him, Website is pleasing to the eye when it looks professional. He also said that the colors must be “cool” and “hip” and must match throughout the Website. He then showed me a clothing retailer Website, Dr Jay’s (www.drjays.com), as an example. He then said that for him the design of the Website is stylish and reflects the products they are selling. Although the Website he showed was not an electronics Website, he said that for him that is a “basis of what a professional looking Website should be”.

The next design factor that influences his trust perception on a Website is the pictures of the products being sold. He pointed out that high quality pictures are important for him to see especially when buying used electronics. Dan explained that he

needed to see the product, what it looks like and how it has been used. He said that high quality pictures are important for him to judge for himself if the product is worth buying. “The clearer you see it, the more you can imagine it actually being in your own hands,” he explains. On the other hand, if a Website has pixelated pictures it would seem to him that the retailer did not put much effort to the presentation of their product. For him this would seem like the retailer is not legitimate and that they might be trying to defraud customers. He further explained that for the used electronics, fraudulent retailers might try to hide the flaws of the product through pixelated pictures.

Easy navigation of the Website is another design factor that is important for Dan. He said that he likes a Website that has tabs with working links and a search engine. If a Website has such features, for him it is an easy-to-navigate Website. He also pointed out that if there are flaws in the links or if he receives page cannot be found errors that will make the Website hard to navigate.

Lastly, Dan said that having a link for contact information or customer service number is an important design factor for him. He also specifically looks for the package-tracking feature of the Website because he wants to know where his purchased items are all the time. He explained that this gives him peace of mind, as he knows that his package will arrive. Although he has shopped with Website that does not have this feature, he believes that all Websites should have it. For Dan, if a Website has the features he mentioned, he would perceive it as a professionally made and reputable Website.

Survey responses

After we discussed the design factors that he looks for in the GUI's of electronics retailers Websites, we proceeded to discuss his survey responses. The numbers listed

below corresponds to his survey responses.

1. Dan gave the use of three-dimensional and half-screen size images a rating of 6 in terms of influencing his trust perception. He explained that while 3D images are “cool” it is not an integral in influencing his trust perception. For Dan, a picture of a product and its different angles is sufficient for him to assess the item.

2. He gave the use of symmetric (balanced) moderate pastel colors of low brightness and cool tone on the Webpage a rating of 1 in terms of influencing his trust perception. He explained that the use of pastel colors does not seem important to him because a Website’s color does not have to be just blue or green. He believes that, as long as it is presented well, the color red can be used on a Website and would still seem trustworthy for him.

3. He rated the use of photographs in the Web pages as a 7 in terms of influencing his trust perception. He said that he could have given a higher rating for this design factor because it is important for him to see what the product looks like as he explained earlier.

4. He gave easy to use navigation on the Webpage a rating of 8 in terms of influencing his trust perception because for him this shows professional service.

5. Dan said that he gave the access of information on the Webpage a rating of 9 in terms of influencing his trust perception for the same reason as his explanation to survey question number 4.

6. For the use of navigation reinforcement, he gave a rating of 8. He said, “A consumer should not be working too hard to purchase a product.”

For survey questions 4 - 6, he further explained that these design factors, aside

from hinting professional service, also makes it seem to him that the online retailer wants to give its customer an honest service. For him, these design factors will show that the online retailer is not only after making a profit and after beating their competitors, but also makes an effort to show their customers that they care.

7. Dan gave the application of page design techniques a rating of 6 because he feels that design features such as ample white space would not influence his trust perception. He explained that this might be because he is not aware of such page design techniques.

8. He gave the display of brand promoting information a rating of 6 in terms of influencing his trust perception. He explained that he would rather see brand logos instead of the online retailer's logo. Nevertheless, he still believes the company logo should be present. He further explained that, as important as the online vendor is, he will not buy the vendor's product but instead will purchase the known brands. In addition, he said that if the online retailer shows the official logo of the brand name, it would seem to him that the Website is an authorized seller of such brand names.

9. He gave the upfront disclosure of all aspects of customer relationship a rating of 9 in terms of influencing his trust perception. For Dan, such display of information further proves the Website's legitimacy. He admitted that he does not proactively look for such policies but it is a design feature that he sees along the way when shopping online.

10. He gave a neutral rating of 5 for the display of seals of approval or third party certificates in terms of influencing his trust perception. He explained that he does not feel that this design features would influence his trust mostly because it is not a design factor that he looks for and he is unaware of such. Nevertheless, he said that, "now that I know

about it, it is something that I will be looking for and would definitely influence my perception of trust.”

11. Dan gave the comprehensive, correct, and current product information a rating of 10 in terms of influencing his trust perception. He explained that this is an important design factor because he wants to know about the product he is purchasing along with most, if not all, specifications of the product.

12. In the survey, Dan gave the use of relevant use of domain name a rating of 8 in terms of influencing his trust perception. During the interview, he clarified that he should have rated this design feature lower, because as long as the products are legitimate, he will not give much importance about the domain name. For him if the domain name is the same as the company's name, then it would help him remember the online retailer easier.

13. He gave the inclusion of representative photographs and video clips a rating of 7 in terms of influencing his trust perception. Again, he explained that he should have given this design feature a lower rating as he feels that representative photographs do not affect his perception of the Website in terms of trust. He feels that such feature is more of a “promotional hype.” Dan said, “For me it can be just some guy dressed up in a uniform and even I can do that. So for me it does not really matter.”

14. Dan gave the use of synchronous communication media a rating of 6 in terms of influencing his trust perception. He explained that he does not think that live chat feature would really help him and would rather look at the customer review or comments. He clarified that although he can see how this design factor can help others, because of a bad experience with live chat, he now tries to stay away from it. He related his experience

when the live chat feature of a Website turned out to be a “scam” for another sexually explicit Website. Therefore, from then on he does not trust the live chat feature anymore.

Purchasing decision

When asked to about how important Website design factors are in his decision whether to trust a Website or not, he gave a rating of 8 out of 10. Dan related an instance when he encountered a Website that gave him an impression of being untrustworthy.

I saw this Chinese Website that sells fake iPods and their Website do not look professional at all. Just by looking at it, like it just has white background and very simple— just white background and a blue stripes tab that do not really work at all. Just by looking at it I can tell that I will not trust the Website at all. It appears very unprofessional, the English was really bad. It is like they just used Google translate. Definitely not something I would deal with.

He explained that overall it is important for him because he feels that online retailers are more trustworthy if it seems like they put more effort to present their Website well and not just show products. Along with disclosure of policies, Dan said that design factors makes it seem like online retailers want to let their customer know that they will not be manipulated or mistreated.

Focus Group

A focus group discussion was conducted on June 7, 2010 from 6:00 p.m. to 7:20 p.m. Upon arrival, prior to the start of the discussion, the students were invited to have refreshments and snacks. During this time, the participants were able to socialize with each other. I also had casual small talks with the participants. This allowed the

participants to become more comfortable with the setting and build rapport with each other.

At 6:15 PM, after all the participants had snacks and refreshments, the students were asked to sit at the discussion tables. Two tables were joined together to give ample seating area. I sat at the north end of the rectangular table, facing three students seated at the south end of the table. Four students were seated to the east side of the table and three students were seated at the west side. I started the discussion by introducing the study and myself. Then, I gave an overview of what would happen during the meeting and advised the participants that I would be recording all comments and viewpoints in a notebook. I informed the students that the discussion aimed to probe their perceptions of trust when shopping online for electronics.

Each student was provided with a manila folder containing an informed consent form and information sheet. I explained that the consent form was for them to sign if they agree to participate in the study. The students were allowed five minutes to read and sign the consent form as well as to fill out the information sheet. The students were each assigned a student number and were informed that if they wished not to divulge their names to the rest of the group, they are free to do so. All students agreed to share their names with each other and introduced themselves to the group. After all questions were addressed, the discussion commenced.

Description of Participants

I started the focus group discussion by asking the students to relate what for them is the best and worst attributes of online shopping. Ten students majoring in different fields of study participated in the focus group. The group, consisted of four males and six

females, has an average age of 22 years old. There were five seniors, two sophomores, two freshmen, and one recent graduate in the group. The diverse group included six students from different parts of the United States and four international students. The students in the group spend an average of five hours online every day and 8 out of 10 of them have previously purchased electronics online. The two students who have not purchased electronics online said that they have browsed through electronics online but have not made any purchase. Out of the ten students, only one claimed to be cheated by an online retailer before.

The focus group started by allowing the students to introduce themselves to the group. Below are the students who participated in the focus group. Their names were not included in this study to protect their privacy.

Student 1 (S1) is a 19-year old female sophomore. She spends an average of 6 hours on the Internet every day. She has purchased electronics online and has not experienced being cheated by an online retailer. She said that she like online shopping because of the more affordable prices or products, especially for books. On the other hand, the disadvantage of online shopping for her is the uncertainty of the reputation of the sellers she will be dealing with.

Student 2 (S2) is a 22-year old male senior. He spends an average of 5 hours on the Internet every day. He has purchased electronics online and has experienced being cheated by an online retailer. He said that the advantage of online shopping for him is the convenience while the disadvantage is the confusion that he said might occur especially if he is dealing with a new online retailer. He said he always have to take caution whenever he is shopping online.

Student 3 (S3) is a 23-year old male freshman. He spends an average of 5 hours on the Internet every day. He has purchased electronics online and has not experienced being cheated by an online retailer. He agreed with S2 and said that he liked the convenience of being able “to buy something without going somewhere.” He also agreed with S1 that he could avail of cheaper prices online with affordable shipping rates. At the same time prices can also be a disadvantage of online shopping for him because some prices are more expensive online. Lastly, he said that some products that he wants are not available online at times.

Student 4 (S4) is a 23-year old, recent graduate from the university. She spends an hour online every day, and had not purchased electronics online. She said that the advantage of online shopping for her is the cheaper prices. She said that the lack of interaction with other people as well as not being able to inspect the product before purchasing is the disadvantages of online shopping for her.

Student 5 (S5) is a 20-year old female senior. She spends an average of 5 hours on the Internet every day. She has purchased electronics online and has not experienced being cheated by an online retailer. She said that she also think the cheaper prices she can avail online is an advantage of online shopping for her. For her, having to wait for the product to arrive from the online retailer is the disadvantage of online shopping. She said that not being able to use the product right away is the downside of shopping online.

Student 6 (S6) is a 22-year old female senior. She spends an average of 5 hours on the Internet every day. She has purchased electronics online and has not experienced being cheated by an online retailer. She agreed with S5 that the more affordable prices she can avail on line are an advantage of online shopping. On the other hand, she said

that not being able to hold the product before making a decision is the disadvantage of online shopping.

Student 7 (S7) is a 23-year old female senior. She spends an average of 5 hours on the Internet every day. She has purchased electronics online and has not experienced being cheated by an online retailer. She said that the convenience of online shopping is an advantage. She also said that being able to read customer reviews about the products is another advantage of online shopping.

Student 8 (S8) is a 22-year old male senior. He spends an average of 5 hours on the Internet every day. He has purchased electronics online and has not experienced being cheated by an online retailer. He said that he shops online fairly regularly. He said that he agreed with what the other students said before him. He also likes the ease of comparing prices online as well as seeing the feedback and reviews of other customers. He also agreed with S6 that not being able to hold the product prior to purchasing as a disadvantage of online shopping. He also added that the availability of products could either be an advantage or disadvantage for him. He said that while some rare products are available online, some are products and sale items could only be found in the stores.

Student 9 (S9) is a 19-year old freshman student. She spends an average of 5 hours on the Internet every day. She had not purchased electronics online before. She said the convenience of shopping without having to leave her dormitory room is the advantage of online shopping for her. On the other hand, she said that the uncertainty of whether the online retailer is trustworthy or not is the downside of online shopping. She is also hesitant on putting in her credit card information as she is aware that credit card fraud is a risk when shopping online.

Student 10 (S10) is a 22-year old male sophomore. He spends an average of 10 hours on the Internet every day. He has purchased electronics online and has not experienced being cheated by an online retailer. He agreed with the advantages of online shopping mentioned by the students before him. He also said that the disadvantage of online shopping for him is the large amount of information that will come up on his screen when he is searching for items.

Focus Group Discussion

After everyone introduced himself or herself, the students were asked to share their opinions about the advantages and disadvantages of online shopping. S10 said he agreed with S6 that he also likes seeing and holding a product before purchasing but he cannot do so when shopping online. S8 agreed and said that not being able to inspect the quality of product is a downside of online shopping. It is because of the affordable prices he can avail that was why he chooses to shop online. S1 pointed out that being able to check prices from different retailers is an advantage of online shopping that cannot do easily at regular stores. The group agreed with S1 by nodding.

Hesitations

I asked the students to share their hesitations were when they first started shopping online. S5 said that her biggest hesitation was giving out her credit card information. The group responded agreeably. S3 expressed his concerns about the package being lost or stolen while in transit. He related how in his hometown, he had to make sure that he is at his house when his package arrives as he is concerned that his purchased item might be stolen if it was left outside by the postman. Then, S1 said that she was concerned if the online retailer accurately describes the product she was

purchasing. S8 agreed and said that he had concerns about some products not being authentic because of the affordable prices. S4 said that she was hesitant to purchase electronics online because of her friend's experience of being cheated by an online retailer. S9 agreed with S4 and she was cautious about reading reviews about the products from different customers. She said that while she likes shopping online, she still went to the Best Buy store in town to buy her computer, as she was hesitant to buy an expensive product online. She said, "Electronics are too expensive to just buy online." S5 said she had to check product reviews online as well to know how the product works for others before she decided to purchase online. S3 mentioned that if prices are considerably cheaper and if he can avail of free shipping, then he would push through with the purchase. During this exchange of opinions, I observed that the students were agreeing with their co-participants opinions.

Trust perceptions

I asked the students to identify and describe how they perceive whether an unfamiliar electronics retailer's Website is trustworthy or not. S3 expressed that when he sees that a Website displays Adobe Flash Media his perception of trust is influenced positively. He associated this with a professional-looking Website. S5 shared that, "if a Website looks like my kid sister designed it, then I definitely know that it is not trustworthy." The group found this amusing but seemed to agree. S6 verified with her that her sister is not a professional Web designer. S5 further described an untrustworthy looking Website to have a simple layout with typographical error. S6 also shared that typographical errors and a cluttered Website also gives her the impression that a Website is not professional and she will immediately look for other Websites. She said that

misspelled words make it seem like the online retailer did not invest time and effort in their Website.

S10 shared that he finds pop-up windows that promote different kinds of deals to be “annoying” and said that these will make him leave a Website. S9 agreed with him and said that when she shops online, she just wants to be able to find the product she wants to buy. If she gets pop-up windows about different deals, this discourages her from buying from the Website. Participants gave responses signifying their agreement.

Design factors

The next topic we discussed was the design features that they look for in electronics retailer Websites that enhances their perception of trust. S1 said that color is the first design feature she notices in a Website. She said that usually she would see a cool color scheme on Websites like light blue and white. She said that this makes the Website pleasing to the eye. S4 agreed and conveyed that the colors blue and green enhance her trust perception more than, if a Website has red or black. S7 said she associates bright and neon colors with Websites that cannot be trusted and neon pink-colored Website would not appeal to her. S10 agreed and said he associates bright colors with pop-up windows. S9 expressed her agreement to this.

Some participants gave opposing opinions about colors that enhanced their trust perception. S8 shared that he likes minimal colors on a Website but for him, the use of red and black can also enhance his trust perception. Then, S5 said that it depends on the official colors of the company. She gave the Website of Target as an example. She said that since she knows that the official colors of the company are red and white, seeing these colors on their Website would enhance her perception of trust. She said that seeing

an entirely different color like violet would make her believe that the Website is not official. While S5 was saying this, I noticed S4 nodding in agreement to S5's point of view. S8 also said that he believes that the colors of the Website should depend on the product being sold. He mentioned that for electronics, he believes that it is not a big factor if a Website is blue or green. S6 agreed and said that if the Website wants to market to young female students, maybe she will still perceive the Website as trustworthy even if bright pink color scheme is used. She pointed out that generally, she believes that if a Website has pastel colors rather than bold colors, it would have higher influence in her trust perception. I observed that the participants nodded or smiled in agreement.

Deciding factor

I asked the participants about other design features that influence their trust perceptions when shopping for electronics online. S10 shared that if he finds it easy to navigate the Website, it will increase his trust perception. He said that if the products are well organized and easy to find, he believes that the Website was professionally made and the company is competent. I noticed that the participants agreed upon his comments. S3 shared that he notices that most Websites he has visited has navigation tabs and a search engine box for easy navigation. He said that when he sees this, he feels like the online retailer makes it easy for customers to shop at their Website. He shared that if the Website gives suggestions when he searches for products, he would feel like the online retailer knows him as a customer. S6 that she also likes smooth transition from page to page and drop-down menus she pointed out that the menus must not have broken links as this makes her believe that the Website does not know their Website. S9 said that if she finds it easy to find the products that she wants, she would definitely trust the Website.

S6 shared that if an online retailer “seems like they really want to please” she believes that they should provide a Website that is user-friendly.

S6 shared that she always check if the online retailer provides return policies before she purchases online especially for products such as Mp3 players and camera. She said that for products that are more expensive she is more stringent in checking the policies of the retailers because she wants to make sure she can return the product if it was defective. S2 agreed and said that he also makes sure that the return and security policies were posted online. I asked the other participants if they agreed and all of them affirmed.

S2 shared that when shopping for electronics online, he immediately looks for the contact information for customer service. He also looks for the links to the company information t. S2 said that this makes him believe that the Website is a legitimate company. I noticed that S3 nodded in agreement to the comment made by S2. I also heard some participants said “yeah.”

S3 conveyed that if the Website is not up-to-date—if promotions, product information, prices are not updated—he would have doubts about dealing with the Website. S10 agreed and said that if a Website looks “old”, he would not perceive it as trustworthy. He said that if the Website seems up-to-date like other Websites he visits, then it would help increase his perception of trust.

To wrap-up the first part of the focus group, I asked the participants if anybody would like to share other design features, or comment on what we have discussed. The participants conveyed that we have discussed most of the design features that influences their trust perceptions. We then proceeded to conduct the online shopping exercise.

Online shopping exercise

For the online shopping exercise, the group moved to the Macintosh computer laboratory. Each student sat in front of the computer and asked to shop for electronics online. They were instructed to look for a Website that may be unfamiliar to them but they perceive to be trustworthy. Then the participants were asked to answer a questionnaire to probe into their choice of Website.

Participants shopped at different electronics retailers Websites they have not used before. The Websites they visited were Mouser Electronics (www.mouser.com), Tiger Direct (www.tigerdirect.com), Target (www.target.com), Office Depot (www.officedepot.com), Digihedo International (www.mp3playerbuying.com), EBay (www.ebay.com), Amazon (www.amazon.com), Crutchfield (www.crutchfield.com), and Overstock (www.overstock.com). Most students shopped for laptop computers and MP3 players.

When asked what design features made them perceive that the Website they visited is trustworthy, participants identified the non-cluttered and organized lay-out and the display of the company's contact information, privacy policy, terms and conditions, product specifications, customer reviews, and third-party certifications, as factors that positively influenced their trust perception. Students also noticed the professional-looking color scheme, package tracking feature and returns policy.

Participants indicated that they see themselves actually making a purchase from the Website they selected because of the design features they saw on the user interface. Three students indicated that they do not think they will purchase from their selected Website because of various reasons— "The prices were done in a different font and that

threw me off”, “the company was based and ships out of China. I am not a fan of international transactions online” and “design features were negative for me.”

To end the focus group discussion, I asked the participants if they believed the Website GUI design features influence their perception of trust and decision to purchase. Overall, the participants agreed that the design features of the electronics retailers Websites influenced their trust perception and decision to purchase or not.

Conclusion

In this chapter, I reported the data gathered from the three strategies of inquiry I carried out. First, the online survey was sent out to students of the university. Forty-nine completed survey answers were included in the dataset. The results of the survey including distribution of ratings for each design feature as well as the means and standard deviations were discussed and graphical representations through pie charts were provided. For the interview section, I presented the perspectives of the four students I interviewed. Their background information, design factors and trust perceptions, survey answers and purchasing decisions were reported through a narrative that included descriptions and direct quotations. Lastly, I conveyed my report on the focus group discussion that was conducted. Collective ideas and opinions were gathered from verbal comments, interactions, and facial expressions of the 10 focus group participants.

The data collected from the interviews and focus group were sorted, coded searched for patterns through content analysis. The discussion of the three themes that emerged from the analysis, as well as the limitations and recommendations of this study, will be conveyed in the next chapter.

CHAPTER V

DISCUSSION OF THEMES, SUMMARY, LIMITATIONS, AND RECOMMENDATIONS

The purpose of this study was to explore how college students perceive electronics retailers' Websites through the Graphical User Interface (GUI) design factors. The goal of this exploratory research was to gain insights about how online electronics retailers can enhance college students' trust through GUI design factors of their Websites by looking into their trust perceptions. In this chapter, I discuss the three themes of the study that emerged and conclude with the limitations and recommendations of this research.

Discussion of Themes

Theme One: Design factors of electronics retailer Websites may impact students' trust perceptions about those Websites

The electronics retailer Websites' graphical user interface (GUI), being the "store-front" of the e-business, display design factors from where customers may form lasting impressions about the company. Wang et al. (2005) proposed, "applying trust-inducing features to the Web sites of online merchants is the most effective method of enhancing online trust" (p. 115) Kim et al. (1998), concluded in their study that it is possible to design customer interfaces that will elicit emotions, particularly trustworthiness. The researchers argued that there could be connections between the design factor and emotion elicited by the interface. "Interfaces thus designed will be able to appeal to the individual customer's emotions and make the experience of interacting with the computer system,

whether it be to shop, to deposit money in a bank account, or to play a game, an emotionally engaging experience, a mimesis of the actual world” (p. 22).

Participants of this study identified design factors as well as the feelings and impressions—both positive and negative—that they associate with each feature. These design factors were gathered based on the participants’ explanation of their survey responses and other features identified during the interviews and focus group discussion. I organized the design factors to four categories: Textual Factors, Visual Factors, Layout Factors, and Interactive Factors.

Textual Factors

This category includes design factors that contain textual information displayed on the user interface that may influence college students’ trust perceptions. The textual design factors identified by the participants are as follows:

1. Company information and domain name

It is necessary for electronics retailer Websites to provide the identity and complete information of the company such as their physical location, full contact information, ownership, management, purpose, and mission (Greenspan, 2002; Shneiderman, 2000). Displaying the company information or the “About Us” link, using a relevant domain name as well as links to the contact information of the online retailers may influence how college student customers’ perceive the Website’s trustworthiness. Having this information makes it seem to participants of this study that the online retailer is a professional company and thereby enhancing their perceived credibility and trustworthiness. Researchers (Nah et al., 2002) suggest how providing such information helps in customers’ perception of

online retailers' trustworthiness. "Disclosure of such company information provides a sense of accountability to the consumers" (Nah et al., p.107). Nah et al. suggest that without a basic understanding of the background and management of the company, consumers are unlikely to have enough faith and confidence to do business with the company.

Survey respondents rated the use of relevant domain name as having varied levels of importance in terms of influencing their trust perception. This suggests that having an appropriate domain name for electronics retailer's Website, such as using the name of the company—e.g. www.abt.com for Abt electronics or www.amazon.com for Amazon, may induce perceptions of trustworthiness to college students.

Similarly, interviewees also said that providing company information and using relevant domain name enhanced their perceptions of trust in electronics retailers Websites. Amanda shared that seeing the contact information of the company in a large font size on the user interface made her believe that the company was reliable and that she can call a representative from the company in case she has questions about the Website. Bree mentioned in our interview that, "If the domain name is the company's name it is like a person's name is attached to the Website, it gives a guarantee that it is true." This suggests that a proper domain name may elicit positive trust perception about electronics Websites.

Members of the focus group discussed that some of the things they immediately look for are the company's information and contact numbers for customer service. Seeing company information made them believe that the

Website is a legitimate company. During the focus group exercise, all but one member selected a Website that has the same domain name as the company. This suggests that the members of the focus group consider the relevance of the online retailer's domain name when choosing Websites to trust when shopping for electronics.

Providing pertinent information about the company and using a relevant domain name may be helpful in enhancing college students' perception of trust by helping them recall the name of the Website thus making them become more familiar with the online retailer. By implementing this design factor, online electronics retailers enhance the customers' beliefs of credibility and ability as a provider of electronic products thus may influence perceptions of trust in their Website and company. On the other hand, a domain name that is unintelligible to participants of this study may negatively influence trust perceptions and may result to the dissolution of a possible business relationship.

2. Policies

Disclosing pertinent aspects of the customer relationship may enhance college student customers' trust perception of electronics retailer Websites. Displaying links to the regulations that govern the online retailer's enterprise such as policies on security, privacy, legal, and return and exchange of purchased items may positively influence trust perceptions by enhancing beliefs about the company's integrity and benevolence. Providing customers with a clear and comprehensible privacy and security policy is essential for the development of

trust (Greenspan, 2002) by enhancing customers' beliefs of the online retailers' ability, credibility, and benevolence.

Wang et al. (2005a) suggested that to disclose all aspects of customer relationship the online retailer may provide links to the security and privacy policies, offer tracking information, state the return policy, reveal shipping charges, and explain contractual terms. Rutter (2001) explained that to encourage user's involvement with the Website, "there must be established and recognizable sets of rules that govern the interaction and which people can expect others to adhere to and judge their action by" (p. 378). Researchers (Nah et al., 2002) suggest that responsibilities and obligations of the online retailer, as well as the customer, should be clearly specified; guarantees and their appropriated compensation should be clearly stated; and support for dispute resolution and mediation services should be clearly explained. "For instance, all charges, delivery information, and return policy should be clearly presented before a purchase transaction is confirmed, compensation for late delivery and privacy invasions should be specified, and information on the dispute process needs to be laid out clearly." (Nah et al., p.107)

The upfront disclosure of all aspects of customer relationships was rated by survey respondents to have high importance in influencing their trust perceptions. This suggests that providing links on the user interface of the Website that directs customers to the policies implemented by the company may enhance college students' perception of trust when shopping for electronics online.

Interviewees said that that the links to the policies is a design factor that they seek in a Website in order for them to perceive it as trustworthy. Carl shared that he wants to see the links to security and privacy policies displayed on the user interface prior to giving out his information. Amber believes that seeing policies imposed by the online retailer assured her that for any instance that the policies were violated she could take legal actions. Dan related that knowing that his purchase was in-transit and being able to track it gave him peace of mind. Interviewees also purposefully look for the shipping and return policies of the online retailers especially when shopping at electronics retailers that involve different sellers such as Amazon and EBay. Seeing the policies of the online retailer made the interviewees feel more comfortable and secured that the transactions have certain rules imposed. This suggests that by providing this information, a company has set rules and regulations in all transactions and interviewees may have positive trust perceptions about the Website and the company.

Members of the focus group shared that they look for the security and return policies of the online retailer especially when shopping for electronics. This assures them that they can return a product in case of defects. The assurance that the customers have an option to return products in case they are unsatisfied with the quality enhances beliefs about the company's benevolence and thereby positively influencing trust perceptions.

The upfront disclosure of the policies through the GUI may be influential in college students' trust perceptions of the Website and the company. By

enhancing their confidence in the online retailers' ability to deliver quality products and accountability in case of unsatisfactory transactions, customers can expect shared responsibilities in all aspects of the business relationship. Having this assurance may positively influence the participants' perception of trust of electronics retailers' Websites.

3. Product and Price Information

It is the responsibility of an online retailer to ensure that the product and pricing information on their Website is complete and accurate, and all other information posted is correct and up-to-date (Nah et al., 2002). The accuracy of information posted on the Website may influence college students' perception of trust, thus, any possible mistake or inaccuracy should be corrected as soon as it is reported or discovered.

Researchers (Nah et al., 2002, Wang et al., 2005a) also stressed that providing quality product information is a key component that must be displayed on the Website in order to elicit positive trust perceptions from customers. A recent study that explored the relationship between Website quality and trust, Chen and Dibb (2010) concluded that product information quality has a significant and positive impact on consumer trust when shopping online.

In the survey, respondents rated the display of comprehensive, correct, and current product information to be highly important in terms of influencing their trust perceptions. This design feature was given a positive rating by all participants which seem to indicate that college students' trust perception are influenced by the product information provided by online electronics retailers in

their Websites. In addition, this design factor tends to be given higher ratings by survey respondents who had experienced being cheated by online retailers. This suggest that by providing comprehensive, correct, and current product information in their Websites, online electronics retailers may gain the trust of college students and possibly convince them to become customers of their company.

Interviewees also shared that providing complete and accurate product and pricing information may positively influence their perception of trust. Bree related that product information is important for her and without any information about products, she will not trust the Website. She believed that more in-depth information increases her trust perception. Amber said that the product information on the Website set her expectation about the item she would purchase. She said that if her expectations were not met, she would no longer transact with the online retailer and would warn others about her unsatisfactory experience. Carl mentioned in our interview that the prices on the Website should be accurate and must remain the same after he selects the product. If the prices change, his confidence on the Website decreases as well. Interviewees expressed the need to read all specifications of products and prices as these would indicate to them what the company could offer and if a product would seem agreeable to their needs and wants especially when shopping for electronics.

The focus group also discussed that when shopping for electronics, it is imperative to them that the product and price information is displayed on the GUI. In addition, seeing typographical errors on the information they read on the Web

pages decrease their perception of credibility and trust. Members of the focus group shared that if a Website has typographical errors it would make it seem like the online retailer did not invest time and effort in their Website. A member of the focus group also indicated that during the exercise, once he saw different fonts were being used on the same Web page, he immediately retreated from that electronics retailer's Website. This implies that the members of the focus group believed that inaccuracies in the product and price information might negatively influence their trust perception.

Participants of this study stressed the importance of product and price information in influencing their perceptions of trust. By providing comprehensive, correct and current information about their products and prices, online electronics retailers enhances beliefs about their integrity and ability to offer satisfactory products that may positively influence college students' trust perceptions of their Website and company.

Visual Factors

This category includes design factors that contain visual and graphical information displayed on the user interface that may influence college students' trust perceptions. The Visual design factors identified by the participants are as follows:

1. Color

Color is one of the first design features that the participants of this study noticed in online retailers' Websites. While participants of this study identified that the use of cool and pastel colors may positively influence their trust perception, they also believed that other colors might also have a similar effect.

They prefer color schemes of one or two colors as they believe that too much color negatively influence their trust perceptions.

The use of cool and pastel colors was suggested by Kim et al. (1998) to be effective in enhancing the trustworthiness of the interface. In their study, Wang et al. (2005b) also recognized the importance of the use of moderate pastel color of low brightness and cool tone in influencing trust in e-commerce Websites. The results of the study by Kim et al. (1998) also stressed that the colors scheme of the user interface must be chosen to give the interface a consistent look in order to create an impression of trustworthiness.

Survey respondents rated the use of symmetric (balanced), moderate pastel colors of low brightness, and cool tone as having varied levels of importance in terms of influencing their trust perception. This suggests that by using such color scheme in their GUI, online electronics retailers may gain college students' trust through their Website.

Interviewees also shared that the use of colors in the GUI influences their trust perceptions of electronics retailer Websites. They said that the use of color conveys whether or not a Website is professionally designed and thereby trustworthy. The color scheme of the Website, if consistent for every Web page, serves as an indication to the interviewees that they are still on the same site and was not redirected to an unfamiliar Website. Bree said that she would associate her knowledge of the company's official colors with what she expects the Website's color scheme should be. She also associated the use of bright colors with suspicious-looking online ads and Websites. Carl said that if black

dominated the Website, he believes that the focus was removed from the products. This suggests that using more than two colors and the dominance of dark colors such as black in the Website may have negative influence in college students' perception of trust.

Members of the focus group also discussed that the use of color may influence their perceptions of trust. Focus group members agreed that, if for example an electronics retailer Website wishes to cater to the female market, they might still consider it as trustworthy even if the color scheme of the Website is bright pink. They also associated what they believe the color of the Website should be with what they know about the company. The focus group agreed that their trust perceptions of Websites were enhanced depending on the company's brand color, product, target market and the general presentation of the Website.

The use of colors in the Websites affects how participants perceive the professionalism of the Website and the company. Online electronics retailers may foster college students' perceptions of trust in their Website by using colors that best represent their company and enhance the general presentation of their online store. As long as the Website implements appropriate color scheme throughout the site, online retailers may gain college students' trust and business.

2. Logos and Slogans

The display of logos and slogans online electronics retailers conveyed to participants of this study that the Website is an official e-commerce business. Participants identified that displaying the online retailer's logo and slogan positively influences their trust perceptions.

Logos and slogans facilitate easy identification of the company, which is essential in promoting the brand reputation of an online retailer (Wang et al., 2005a, Egger 2001). Nah et al. (2002) suggest that providing the identity of the company enhances customers' belief about the integrity of the online retailer and thereby influencing their trust perceptions.

Respondents of the survey rated the use of brand-promoting information as important in terms of influencing their trust perception when shopping for electronics online. This suggests that displaying the company logo and slogan in the Website may enhance college students' perception of trust in the electronics retailers.

Interviewees said that the logo and slogan of the company help them identify and recall a particular electronics retailer. Amanda pointed out during the interview how the Abt Electronics' slogan indicated that the company has been around since 1936. For her, that was a positive indicator that the company is trustworthy. According to Bree, she connects what she knows about the company and if she sees that a Website has the official logo and color, it will positively influence her trust perception. When Carl showed me the Half.com Website, which he said he uses and trusts, he shared that when he first encountered the Website he immediately saw the EBay logo signifying that the site is associated with the company. This he said was one of the factors that made him believe that he can trust the Half.com since he knows that EBay is an established and trusted company. This seemed to convey that interviewees associated online

retailers' trustworthiness with logos and slogans display on electronics retailer their Websites.

During the online shopping simulation, some members identified the display of company logos as well as brand-name logos as design factors that influenced their perception of trust when shopping for electronics online. Such brand-promoting information seemed to affect the members' belief about the legitimacy of the Website and the company, thus positively influencing their perceptions of trust.

Designs factors such as logos and slogans impacts customers' first impression and encompasses the overall image or character the online retailer projects to its customers through their Website (Chang et al., 2008, Aladwani et al., 2002). It is imperative for online electronics retailers to display their logos in the Websites' GUI in order to establish the identity and integrity of their company. By implementing this design factor, college students' perception of trust of their Website and company may be influenced positively.

3. Product photographs

It is important that electronics retailers provide high-quality photographs of the products they put up for sale. This fundamental design factor may influence college students' perception of trust in electronics retailer Websites. Participants of this study believes that incorporating this feature makes the Website seem more professionally-made and that the company invests time, money, and effort to make their Website more presentable and appealing.

Researchers (Wang et al., 2005a) suggest that, “high-quality photographs of products and well-chosen images generate consumer confidence that can be transferred to other aspects of the Web site” (p.117). Wang et al. also suggested that using three-dimensional, dynamic clipart that covered at least half of the total screen size could enhance the trustworthiness of online retailers Websites. Basso et al. (2001) indicated, “Web retailers use eye-catching graphics not only to grab a user’s attention but also to convey competence or professionalism” (p. 138).

Survey respondents rated the use of well-chosen and good-shot photographs as important in terms of influencing their trust perceptions. This suggests that college students’ trust perceptions may be enhanced by providing high-quality photographs of electronic products sold by the online retailer on their Website. In addition, survey respondents rated the use of three-dimensional and half-screen sized images as having varied levels of importance in influencing their perceptions of trust. This seemed to convey that implementing this design feature might have an influence in college students’ perception of trust in electronics retailer Websites.

Interviewees also shared that providing high-quality photographs of products enhance their perception of trust. Dan stressed that when purchasing electronics, most especially if he was buying second-hand, it is very important to that the Website had clear and high-quality photos. Displaying pixilated pictures gives a suspicious and unprofessional impression to the interviewees. Carl pointed out that product representations through text and pictures is the only way that customers have to determine if products are satisfactory, thus it is important that

the pictures clearly and accurately represent the product being sold. This seemed to imply that by providing high-quality photographs, the interviewees might deem an online retailer to be competent sellers of electronic products and thereby enhancing their perceptions of trust.

Interviewees were also keen on the use of Adobe Flash Player to display multiple photographs of products or featured items. However, the interviewees also pointed out that displaying multiple 2D pictures of the product from different angles or a 360-degree rotation of the product may have higher influence in their trust perception. This suggest that the display of multiple product photographs using Adobe Flash Player may have a positive influence in their perceptions of trust in electronics retailer Websites.

Focus group members agreed that displaying product photographs is an essential design factor for online retailers Websites, most especially when purchasing electronics, since it is through these images that they assess the products. Members of the focus group also identified the use of Adobe Flash player to display pictures of products in the Website enhances their perception of trust. Websites that have this feature were perceived by the focus group to be professionally made and therefore more trustworthy. This suggests how members of the focus group perceive Websites' trustworthiness through the photographs displayed in electronics retailer Websites.

By implementing this design factor, online retailers enhance customers' belief that their company is a competent provider of electronic products and thereby increasing their customers' trust perceptions. Providing multiple high-

quality photographs of products in Websites may positively influence college students' perception of trust in the online electronics retailer. In addition, college students' perceptions of trust in online retailers may be further enhanced by presenting product photographs using Adobe Flash player.

4. Photograph of representative or employee

The display of online retailers' representative or employee photograph is a design factor that enhances the social presence of the Website which may influence customers' perception of trust (Wang et al., 2005b). Participants of the study generally believe that displaying a photograph of a company representative may positively influence their trust perception by giving a face to the company.

Researchers who conducted experiments to test the effectiveness of social cues such as photographs of representatives and the company, suggest that experienced shoppers have evaluated that photographs on the Website induces trust favorably given that the photograph is appropriate to the brand (Wang et al., 2005a). On the other hand, research conducted by Riegelsberger and Sasse (2001) also yielded varied reactions from enthusiastic acceptance to reports of mistrust by the participants of their study. Wang et al. (2005a) emphasized that including social cues such as representative photographs in the user interface is a relatively new concept. They propose that this may be the reason behind differing impressions about this design feature.

In the survey, respondents rated the inclusion of representative photographs or video as having varied importance in terms of influencing the

respondents' trust perception. This suggests that this design factor may induce college students' trust perceptions in electronics retailer Websites.

Interviewees also expressed that the display of representative photographs may enhance their perception of trust in electronics retailer Websites. Bree said that seeing representative photographs allowed her to give a "face" to the online retailer. Carl said that when he saw a photograph of a representative of the company, it gave him the impression that an actual employee would work on his order thereby enhanced his trust perception. Amanda imparted that she associated seeing a business-like representative who appeared as trustworthy to the company's reputation. However, if the representative is not presentable and does not portray positive attributes, this may result to negative trust perceptions. This suggests that the display of representative photograph had an influence in their perception of trust in electronics retailer Websites.

Members of the focus group selected Websites that displayed online retailers' representative or employee during the online shopping exercise. Although most Websites that the members selected displayed this design feature, only S1 indicated in the questionnaire that this design feature influenced her perception of trust. This seemed to convey that the focus group members were generally unaware that this design factor may induce trust perceptions when displayed in electronics retailer Websites.

The display of representative or employee photographs provides identity to the Website and the company. By displaying photographs of employees or

representative that exhibit pleasing attributes, may be helpful in influencing college students' perception of trust in electronics retailer Websites.

5. Seals of approval and third-party certificates

Displaying seals of approval and third-party certificates may be helpful in inducing trust perceptions of college students in electronics retailer Websites. Though this design factor is not proactively sought out by the participants in the user interface, upon seeing seals of approvals and third party certifications such as VeriSign and McAfee, they believed that this design factor influenced their perceptions of the Website's trustworthiness.

Research suggests that certifications from third party entities have positive influence of customer's beliefs about online retailers' ability, integrity and benevolence thereby enhancing trust perceptions (McKnight et al.2002a, Nah et al., 2002, Shneiderman, 2002). Nah et al. stated that, "Approvals from professional associations enhance credibility concerning the competence of the online vendor and the quality of services offered, while third party assurance services certify that privacy and security practices and enforcement are in place" (p. 108). Rutter (2001) also suggested that the display of seals of approval and third-party certifications is linked to the brand of the company. "In situations in which a retailer is a member of such a professional or regulatory organization it is easy to simply assume that trust can be produced by a regulatory agency" (p. 378).

In the survey, the respondents rated the display of seals of approval or third party certificates in the GUI as important in influencing their perception of

trust at varied levels. This suggest that obtaining the approval and displaying the logos of certifications of third-party guarantors—such as BBBOnline, McAfee, and Verisign—in the GUI may enhance college students’ trust perceptions in electronics retailer Websites.

Interviewees also said that the display of seals of approval and third party certifications influenced their perceptions of trust. Bree shared that when she sees third party certifications, it gives her the impression that the online retailer is “certified and approved”, thus making her feel more secured about transacting with the online retailer. Dan admitted that though he sees this design feature when shopping online, he was unaware of the significance of seals of approval in online retailers’ Websites. He said that upon knowing what these logos are for, he will start looking for them when shopping online and would definitely influence his perception of trust. Carl also said that the display of the logos of third-party guarantors on the Website made him feel that the online retailer is offering additional service. This seemed to convey that the display seals of approval and third-party certificates enhanced the interviewees perception of trust in electronics retailer Websites.

During the first part of the discussion, the members of the focus group did not discuss this design feature. However, when S8 started browsing through Websites during the online shopping exercise, he recalled and shared that display of the VeriSign logo also influenced his trust perceptions. Members of the focus group also identified third-party certification as one of the design features that influenced their perception of trust after the online shopping exercise. This

suggest that the focus group agreed that this design factor positively influence their trust perceptions.

The display of seals of approval may be helpful in inducing trust perceptions of college students by enhancing their beliefs that the Website and the company is a competent and honest retailer of electronic products. This design factor provides a guarantee to customers that the online retailer is at par with the standards set by third party-entities thus providing leverage on their perceptions of trust.

Layout Factors

This category includes design factors that involve the organization and accessibility of the user interface that may influence college students' trust perceptions.

The Layout design factors identified by the participants are as follows:

1. Access of information

Freedom from broken links and unnecessary images are instrumental to the establishment of trust (Wang 2005a). Nah et al. (2002) stressed that ensuring that the technology in the Website is reliable is the responsibility of online retailers, which enhances customers' beliefs in their integrity and competence as a business. Participants of this study believed that accessibility of information in the GUI influence their perception of trust on electronics' retailers Websites.

Survey respondents rated the access of information as highly important in terms of influencing their trust perceptions. This suggests that by ensuring that the links and images on their Website seamlessly provide access to information, online electronics retailers may enhance college students' trust perceptions.

Interviewees shared their opinions about access of information having an impact in their trust perceptions. Bree said that if the links and images directed her to other pages other than the product she selected, her perception of trust would negatively be influenced. Carl also believes that making sure all links are functional shows the company's dedication to its customers. Interviewees shared that if there are broken links on the Website it reflects negatively on the company's credibility and competence. This indicates that the access of information on the user interface may have an effect in their trust perception of electronics retailer Websites.

Members of the focus group also said that if they encounter broken links, it would seem like the Website was not professionally maintained nor up-to date. The focus group related how broken links in a Website gave them the impression that the online retailer does not have comprehensive knowledge and familiarity of their own Website. This suggests that inaccessibility of information may negatively influence their trust perceptions.

By ensuring that the information they provide on their Website is accessible to customers through the links and images on the GUI, online retailers enhance customers' beliefs about their ability and benevolence to provide satisfactory service to their customers. Thus, by implementing this design factor, online electronics retailers may influence college students' perceptions of trust through their Websites.

2. Ease of Navigation

Cheskin and Studio Archetype/Sapient research (2000) reported that effective navigation as perceived by consumers is the minimum requirement to trust the Website. The ease of navigation through the Website was identified by the participants of this study as having influence in their perceptions of trust.

According to Wang (2001), smooth, easy-to-use navigation makes shopping a pleasurable experience. “Pleasant navigation will increase the feeling of likeability of the Web site and hence higher level of trust. On the other hand, effective navigation serves as the cue to infer the competence and expertise of the Web merchant, hence increasing the perception of the credibility of the Web merchant” (p. 6). Nah et al. (2002) also suggested that by presenting a simple and consistent user interface, customers would perceive it as a usable Website as this reduces the perceived risks of wasting time, deception, and frustration. When the layout and design of the Website are consistent, “users feel more confident using the site because they can transfer their learning from one sub-site to the next rather than having to learn everything over again for each new page” (Nielsen, 1998, p. 107).

Respondents of the survey rated the ease of navigation in the user interface as highly important in influencing their trust perceptions. This suggests that when college students sense that they can easily navigate through the online retailers’ Website, this will positively influence their perceptions of trust.

Interviewees also recognized that the ease of navigation in Websites influenced their perceptions of trust. Bree said that it helped her believe that a

Website is trustworthy if it has similar navigational procedures as the sites she usually visits. She described an easy-to-use Website for her has products that are categorized accordingly, has sorting options such as shopping by brand and is easily searchable. She related that if a Website is disorganized, she would not trust the Website and the company itself as it would seem to her that the online retailer may be new to e-commerce. Carl believes that logical categorizations of Websites helped in his perception that the company is professional and thereby increasing his perception of trust. Amanda also shared that if she cannot find what she is looking for easily, she will retreat from the Website. She also associated easy navigation through available menus on the Website with her perception of the online retailer's orderliness as a company. Dan said that, aside from hinting professional service, he felt that if a Website is easy to navigate, the online retailer was not only after his money but also indicated honest service and care for customers. This seemed to convey that online retailers may foster positive trust perceptions by providing the customers with a Website that is easy to navigate.

Members of the focus group also conveyed how ease of navigation influenced their trust perceptions of electronics retailer Websites. The focus group believes that if a Website is easy to navigate, it is professionally made and the company is a competent electronics retailer. They described an easy-to-use Website to have proper categorization of products, navigation tabs, search engine box, and drop-down menus.

When customers encounter Websites wherein the design and format of interface elements vary from page to page within the site consumers may get

negative emotions such as annoyance, which may affect customers' trust perceptions (Nah et al., 2002). By ensuring that customers can easily navigate and browse through their site, electronics retailers may enhance college students' trust in their Website and company.

3. Page Design Techniques

The use of page design techniques—such as the use of ample white space and adequate margins or strict grouping of related information and low visual density—gives the impression to the participants of this study that the online retailer is competent. “The application of page design techniques that can increase readability, such as appropriate amount of white space and margins, strict grouping, and visual density, also help to increase the overall trustworthiness of the Website” (Wang et al., 2005a, p.117-118).

Survey respondents rated the applications of page design techniques on the Website as having varied levels of importance in influencing their perceptions of trust. This suggest that the application of page design techniques—such as the use of ample white space and adequate margins or strict grouping of related information and low visual density—in the layout of the Website may positively influence college students' trust perceptions.

Survey respondents also rated the use of navigation reinforcement as important in influencing their perceptions of trust. This suggests that the use of navigation reinforcement, specifically navigation anchors, on the Website may have a positive influence in college students' perceptions of trust in online electronics retailers.

Interviewees also shared that a Website that implements page design techniques may influence their perceptions of trust. Amanda shared that with the use of such techniques as ample white space and strict grouping of related information, the Website would appear to be professional to her thus making it seem more trustworthy. Use of page-design techniques gives her the impression that time, money, and effort was invested into the design and layout of the Website. Bree also shared that she prefers the Website to appear simple and not to be “too fancy”. She shared that if a Website has high visual density, she will not have confidence in the ability of the online retailer. Carl on the other hand said that he prefers a balanced visual density. He said, “If there is too much on the page then I would not want to spend time trying to figure out where stuff is.” However, if the elements on the page are well margined and with ample space, he said he may still take the time to look into the Website.

Members of the focus group conveyed that cluttered Websites gave them the impression that the online retailer is unprofessional and thereby untrustworthy. The focus group agreed that they would retreat from a Website that was disorganized. This suggests that the use of page design techniques also influenced their trust perceptions.

Exhibiting professionally designed Website enhances customers’ impression that the online retailer is a competent provider of electronics. Thus, implementing page design techniques in the GUI may positively influence college students’ trust perceptions about electronics retailer’s Website and the company itself.

Interactive Factors

This category includes design factors that allow interaction through the user interface. The Interactive design factors identified by the participants are as follows:

1. Customer reviews and ratings

Participants of this study read through reviews and ratings and believed that seeing that the online retailer allow such exchange of opinions, their perceptions of trust may be influenced. Depending on what other customers have written about the product or the company, they may decide to trust the online retailer or not. “Web sites that mediate the interaction between users can facilitate a profoundly more variable level of challenge and engagement than would be possible with a users and site interaction” (Rutter, 2001, p.378)

According to Rutter (2001) developing an imagined community such as Amazon’s open community of reviewers, allow customers to perceive the online retailer as part of the community rather than merely an institution. Rutter suggested that building an atmosphere of community has direct relevance to nurturing trusting relationships with customers. References from past and current customers provide an effective means for assessing reputation, which is a key antecedent of consumer trust (Jarvenpaa et al., 2000). Nah et al. (2005) proposed that providing reviews and comments from other customers and experts promotes beliefs about the online retailer’s ability, integrity and benevolence, which enhance perceptions of trust.

This design factor was not initially included in the 14 design factors identified by Wang et al. (2005a) and was not specifically rated by the survey

respondents of this study. However, in the survey conducted by the researchers (2005b), their respondents identified that they would have higher trust perceptions if the Website they provided had links to customer reviews. In this study, the Abt Electronics Website that was provided as visual representation of the design features in the survey included customer reviews and ratings. Respondents of the survey gave a positive rating for their overall perception of trust in the Abt.com Website. This may imply that providing channels for customer reviews and interaction may have an influence in college students' perception of trust.

Interviewees affirmed that providing customer reviews and ratings positively influence their perceptions of trust. They said they read customer reviews of the company and the products by which they base whether or not the online electronics retailer is competent and trustworthy. Carl believes that customers like him would be more interested in a Website and its product if other customers have given their reviews and ratings. Amanda also shared that customer reviews especially for electronics, was important for her because it served as her basis if she would be satisfied with the product. Through customer reviews, she determined if the products actually work and how well they work for others. This suggests that interviewees trust perceptions in electronics retailer Websites may be enhanced by the reviews and ratings provided by other customers.

Members of the focus group reported that being able to read reviews of the products and online retailers as one of the reasons why they decided to shop online. The ease of comparison as well as being able to interact with other

customers about how well a product works positively influence their trust perception of electronics retailer Websites.

Customer reviews and ratings enhance beliefs about the company's integrity and competence as an online retailer and their benevolence to their customers. Thus, facilitating customer interaction—through product and retailer through reviews and ratings—may positively influence college students' perception of trust in the Website and the company.

2. Live chat

Wang et al. (2005a) suggested that the use of synchronous media may have a positive influence in customers' trust perceptions of an online retailer. Researchers suggested that embedding social cues, such as face-to-face interaction and social presence, into Website interfaces via different communication media to address the physical interaction lacking in online shopping (Nah et al., 2002). Synchronous communication media, such as live chat or video telephony, provides channels for real-time feedback, thus minimizing misunderstandings and demonstrating attentiveness. By implementing this design feature in electronics Websites, perceptions of trust about the online retailer may increase.

Respondents of the survey rated the use of synchronous communication media, as having varied levels of importance in influencing their trust perceptions. This suggests that the use of live chat features on the Website may influence college students' perception of trust in online electronics retailers.

Similarly, interviewees gave opposing opinions about how this design feature influences their trust perceptions. Carl believes that live chat was a more efficient alternative to calling the customer service by phone and that all Websites should have it. By providing multiple channels of communicating with the online retailer, interviewees' perception of trust may be enhanced. On the other hand, Bree and Dan both shared that they have negative perceptions of this design feature based on previous experience. Dan said that, despite his opposing opinion, he understands how the live chat feature may enhance other customers' perception of trust. Different perspectives of the interviewees suggest that the use of live chat feature in the Website may have both positive and negative influence in their trust perceptions of online electronics retailers.

The lack of face-to-face interaction was discussed by the focus group to be one of their hesitations in shopping online. By introducing them to live chat and video telephony, their hesitations may be decreased and may have positive impact on their perception of trust in electronics retailer Websites.

Similar with the display of representative photographs, the use of synchronous media enhances the social presence of the Websites by providing a more personal interaction with customers. As Wang et al. (2005a) suggested, differing opinions about how this design feature influence customers' trust perceptions may be due to the relatively new concept of integrating social cues in the online environment. While the use of live chat may have an influence in college students' perceptions of trust, this may become more evident in the future when customers become more familiar with the technology.

Theme Two: Students' experiences with online shopping may influence their trust perceptions about electronics retailer Websites

Researchers suggest that personal experience and individual accounts have profound importance in the development of trust (Rutter, 2001, McKnight et al., 2002a). Rutter stated that, "We make decisions to trust through our own (often limited or misrepresentative) experiences and the anecdotes offered us by those we trust more readily (and pragmatically) than by any rational evaluation of available facts" (p. 379).

Participants of this study imparted how their individual experiences in terms of familiarity with the online shopping as well as general online experience, and background knowledge affect how they perceive trustworthiness of electronic retailer Websites. This suggests that customer's perceptions of trust may be influenced by their individual online shopping experiences and the experiences of those they trust.

In the survey, a correlation ($r = -0.317, p = 0.03$) was observed between respondents who had experienced being cheated by online retailers and how they rated comprehensive, complete, and current information in terms of influencing their trust. Respondents who had been cheated by online retailers tend to give higher importance to comprehensive, complete, current information as an indicator of trustworthiness of electronics retailers Websites. This seemed to imply that college students who had experienced being cheated by online retailers might have higher trust perceptions in online retailer Websites that provide accurate and complete information.

Interviewee Amanda said that comprehensive information prevents customers from being disillusioned. She shared that if she had a bad experience with a Website she would warn others about the online electronics retailer. A member of the focus group, S3 who had experienced being cheated by online retailers, said that he immediately looks

for the contact information as well as other pertinent company information. He said that when he was shopping online this information made him believe that the online retailer was a legitimate company.

The experience of being cheated by online retailers may damage the business relationship permanently with the customer. Participants of this study believe that comprehensive, correct, and current information is critical design factor that may enhance their perception of trust.

On the other hand, if the information provided is inaccurate, this will have a negative effect in the trust of college students to the online retailer and may then cause the deterioration of the business relationship. In addition, since college students take into consideration the experiences of their friends and peers, one college student who experienced being cheated by a particular online retailer, may influence the perceptions trust of his or her friends and family. Participants also shared how their decision to engage in online shopping for electronics was influenced by their friends and family.

Bree and Carl, who said that online shopping was not very common in their respective home countries, both started online shopping upon seeing their friends here in the United States engage in e-commerce. Bree said that prior to having experience in online shopping, she had no idea how it works because her friends and family back home do not shop online. She shared that she only started shopping online because she sees people shop online for everything. She also seeks her friends' advice about where to shop online. Bree also appeared to have high hesitations about trusting electronics retailer Websites. She also admitted that, after a year of experience, she believes she trusts online

shopping more but still has hesitations about purchasing electronics given that most of these devices involve significant costs to purchase.

Amanda started online shopping when she was still in high school through her brother. She said that once she became more familiar with the technology, she started to shop on her own. On the other hand, a participant in the focus group discussion shared that her reluctance to shop online for electronics comes from the negative experiences shared to her by her friends.

McKnight et al. (2002a) proposed one of the most basic of trust-building tenets is that experience with the object of trust promotes trust in the object. This suggests that general Web experience positively affects trust because experience provides the consumer a belief that dealing with the Web is proper and normal, which is represented by situational normality. In addition, Web experience will assure most people that it is safe to shop over the Internet. Whether the experience is favorable or not, their perception of trust in online shopping may be influenced.

Chang et al. (2008) proposed that “highly-experienced Internet users are expected to perceive e-store Websites in term of their customization, opportunities for interactive, convenience and character” (p.2940). This suggests that individual technical experience with the technology may also influence their perceptions of trust through design factors of electronics retailer Websites.

College students’ familiarity with other Websites may influence how they perceive online electronics retailer Websites’ trustworthiness. Participants of this study shared how the design factors they looked for in Websites were influenced by their

experience with other Websites. McKnight et al. (2005a) posited that, “People make trust-related assumptions about others based on whatever they know” (p. 341).

Carl, who is majoring in Graphics Design, has had training and a number of experiences in designing Websites and spends a significant amount of his time online every day. Since he is familiar with the current trends and techniques in Web design he looks for these design features in Websites. He identified the use of Adobe Flash player to display pictures and interactive features of the Website such as live chat to have positive influence in his trust perceptions because he knows that these are some of the latest technologies implemented in Web design. He believes that these factors indicated that a Website was designed professionally and can be trusted.

If the customer perceives a Website is of high quality, they will assume that the Web vendor has positive attributes and will form trusting intentions. Amanda based her perception of how a professional Website looks like based on what she sees in the Websites she frequently uses. Similarly, Bree also based her perceptions of trust of electronics retailer Websites on her familiarity with other sites she has used before as well as the recommendations of her friends. She associates her perception of an unfamiliar Website’s trust with her experience using other Websites she more commonly uses, such as Wal-Mart’s online store. Because she sees design factors such as categorization of products and navigational procedures on Websites she is familiar with, her trust perceptions will be positively if an unfamiliar Website would have the same design factors. She said that it helps her trust perception more if a Website has similarities with sites that she has used before than finding a completely different layout.

Rutter (2001) suggested that trust is a dynamic process that may deepen or retreat based on experience. This suggests that the students' perception of trust through the design factors in the user interface of electronics retailer Websites may be influenced by both positive and negative experience in online shopping in general. During our interviews, Amanda and Dan both related bad experiences with the live chat feature of Websites they visited. The students said that because of their unfavorable experience, they do not believe that the design factor will positively influence their trust perception of online retailers' Websites.

Some participants of the focus group also related how they associate bright and neon colors with the fraudulent Websites or pop-up windows they encounter online. They believe that the presence of pop-up windows have a negative effect in their perception of trust.

Dan also related an encounter with a Website that sells counterfeit iPods. He described the Website as "bland", with a simple white background, dysfunctional tabs, and pixilated pictures. This experience gave him an impression that bland-looking Websites are untrustworthy. In addition, the Websites that he had favorable transactions with and trusts have stylish and trendy Web design. For him this is the basis of how a trustworthy electronics retailers' Website should look like.

Understanding how customers' trust is formed and the factors that influence their perceptions is important in order to gain further knowledge about the target market. The perspectives shared by the participants of this study about how their individual experiences influence their trust perception about electronics retailer Websites provide insights on how college students' trust is enhanced and what may cause possible failure

of trust. This may provide online electronics retailers with a deeper understanding of the college student market.

Theme Three: Design factors of electronics retailers' Websites may influence students' decision to purchase electronics online

McKnight et al. (2002a) proposed a Web trust model positing that beliefs about online retailers' ability, integrity, and benevolence may lead to trusting intentions that includes making a purchase. The researchers stated that, "if consumers perceive that the Web site is of high quality; they will assume that the Web vendor has positive attributes and will form trusting intentions" (p. 341).

Chang et al. (2008) cited a survey conducted by Genex, an Internet consulting and development firm. The survey indicates that 65% of B2C consumers are deterred from engaging in online shopping because of poor customer interfaces. This suggests that the purchasing intentions of online customers are influenced by the design factors user interface. Participants of this study expressed how their trust perceptions of design factors can encourage or discourage them from purchasing electronics online.

Respondents to the survey were instructed to assume that they were interested in purchasing electronics from an online electronics retailer, Abt Electronics. They were then asked how important each of the 14 design features in influencing their trust. Given that the respondents assumed that they were shopping online, the 14 design factors were revealed to have importance in influencing their trust.

Participants of the study shared how their purchasing decision may be influenced by the design factors provided by online electronics retailers in their Websites' GUI. Participants shared various design factors that may either make or break their decision to

transact with online retailers. These suggest how their decision to purchase electronics online may be influenced by the design factors of the Websites' GUI.

Displaying high-quality photographs of the products that the interviewees intend to buy may influence whether or not they will purchase or not. Dan expressed how high-quality pictures of the product allow him to visualize it in his own hands thereby influencing his decision to purchase. Bree shared that although pictures alone will not influence her decision to purchase, if she finds it easy to find the product she wants and she was provided with comprehensive information and a photograph of the product, then her purchasing decision may be influenced. She stressed that she prior deciding whether to purchase or not, hence completing the purchasing offline, she need to see the product information.

Amanda also shared the how customer reviews and product ratings as well as the return policy of the Website influence her purchasing decision. She related how prior to buying in an unfamiliar Website, she makes sure to research about the online retailer. She reads customer reviews and ratings about the product and the online retailer. She also makes sure to review the return policy posted on the Website. She explained that, "policies give me confidence that if I do not like what she buys, she can return it." Amanda also shared that the up-front disclosure of policies and fees has a positive influence in her trust perception. She said that if there were any hidden shipping fees to the product that she will buy, she will feel cheated and would not be a satisfied customer.

Dan also related how he was discouraged to purchase from a Website that, upon seeing the user interface, he immediately perceived it as an untrustworthy Website. He said that overall, the design factors on electronics retailer Websites GUI influence his

decision to trust and purchase as he can never buy from a Website that is “bland” in his opinion.

Carl summed up his decision process when shopping for electronics online by saying, “If they use current trends in designing a Website, if the details on the Website impresses me and then that is how I start exploring it more. And hopefully what I see is good and that builds up my trust and I can see myself coming back and actually making a purchase.”

After the exercise conducted with the focus group, most participants shared that they see themselves actually making a purchase from the electronics retailer Websites they visited because of the design features that were displayed on the Website’s GUI. The focus group discussed how seeing design factors on the electronics retailer Websites they visited influenced their decision. They agreed that checking product reviews online is an imperative prior to making a purchase. They seek information about how the product works for other customers. A member of the focus group stressed that for electronics it is important to know the return policies, as she wants to be guaranteed that if the product is defective, she will be able to return it to the retailer. At the end of our discussion, all participants agreed that the design factors they look for in electronics retailer Websites influence their trust and purchasing decision.

Design factors such as easy navigation, organized layout, contact information, product information, seals of approval, package tracking option and privacy policy were also identified by the focus group as positively influencing their decision to purchase. On the other hand, a member of the focus group related that when he was browsing online, “the prices were done in a different font and that threw me off.” This suggests that

inaccuracies in the information provided on the Website may have a negative influence in their trust perception of the online electronics retailer.

Participants of the focus group also agreed that accurate product information is a consideration for them when shopping for electronics online. A participant also said that if she gets pop-up windows about different deals, this discourages her from buying from the Website. Participants of the focus group agreed that pop-up windows make them leave a Website and decide against purchasing.

Corbitt et al. (2003) suggested that a higher level of trust would lead to higher level of participation in e-commerce. McKnight et al., (2002a) argued that the trust construct they proposed supports their theory that perceived qualities of a Website are highly correlated with trusting beliefs about the online retailer and trusting intentions. This suggests that the design factors that influence college students' trust perceptions of electronics retailer Websites, may influence their decision to browse through the Website and— depending on other factors such as the individual's disposition to trust—eventually purchase and engage in an e-commerce relationship with the online retailer.

Gaining insights about the design factors that may influence the participants' purchasing decisions about electronic retailer Websites provide a deeper understanding of the college student market. This understanding may be helpful to online electronics retailers in conceptualizing strategies in order to gain college students' trust and potentially their business through the design factors of their Websites' GUI.

Limitations

This study was affected by several limitations. Those limitations include:

1. Participants in the study (survey, interviews, and focus group) were a relatively small sample of college students given the population of university students.
2. The setting of this study was at one Upper Midwest university with a majority of the students coming from similar cultural backgrounds and experiences. Differences in culture and background at other universities might produce different insights.
3. The age of participants was limited to 18 to 30 year olds. The results of this study might be different for college students who are outside this age range.
4. I was the only one who transcribed during the interviews and it is possible that I might have missed some details of the conversation.
5. The focus group was not videotaped or tape-recorded and I was the only one who facilitated and transcribed the discussion. It is possible that I might have missed a comment, reaction, or facial expression.
6. The survey provided one sample Website to the respondents. Presenting multiple or different Websites may have resulted in different outcomes.
7. The design factors identified in this study were based on the initial 14 design features proposed by Wang et al. (2005a) and the ones identified by the participants. Thus, it is not an exhaustive set of design factors that may influence college students' perceptions of trust and purchasing decisions.
8. Being exploratory in nature, the findings of this study may be regarded as tentative.

Recommendations

The following recommendations are provided to all online retailers, Web designers, college students, online shoppers, and Internet users. These recommendations may also be informative to researchers in various fields of study such as E-commerce, Human-Computer Interaction (HCI), Marketing, and Technology.

1. Online electronics retailers should invest in the building and design of their Websites to make sure their online store promote positive trust perceptions for college students in order to gain their confidence and business.
2. Online electronics retailers should disclose all aspects of customer relationship in their GUI as this may increase college students' perceptions of trust in the Website.
3. Electronics retailers should offer comprehensive, correct, and current product information in their GUI's as this may increase college students' perception of trust in the Website.
4. Comprehensive, correct, and current product information is an important factor that may encourage college students, who have been cheated previously by other retailers, to trust electronics retailer Websites.
5. The findings of this research, though focused on electronics retailer Websites, may also provide insights to online retailers selling other products.
6. Web designers should make sure that information presented in their GUI are accessible with no broken links or images as this may increase college students' perception of trust in the Website.

7. Web designers should have up-to-date knowledge of the trends and technologies in Web design that may be helpful in developing a Website that enhances customers' trust perceptions.
8. College students who have not purchased electronics online should familiarize themselves to this technology as it is considered generally helpful, more economical, and convenient by their fellow students.
9. The experiences shared by the college students are insightful recommendations for other college students in selecting online retailer Websites to trust.
10. Graphics Design students should familiarize themselves with the college student market as they may utilize this knowledge in future Web design projects.
11. The design factors identified in this research may be further evaluated to determine the intensity of influence each design feature has in college students' perception of trust through another survey conducted on a larger sample of college students.
12. This study should be conducted in other universities to compare with the findings of this research.
13. A cross-cultural study should be conducted to explore the impact of culture in online trust.
14. More focus group discussions should be conducted to compare with the findings of this research.

15. The categorization of design factors in four constructs needs to be refined and evaluated in terms of correlation and interdependence.
16. Further research may be conducted by other researchers or students to add to the body of research on this topic.

Conclusion

Trust is an essential element in business relationships, more so in an intangible environment such as the World Wide Web. Due to the lack of personal face-to-face interaction, the graphical user interfaces (GUI) of online retailers' Websites serve as the storefront of the business through which impressions of trustworthiness are formed. By gaining the trust of their customers through their Websites, online retailers may also gain the business of their targeted market.

In this study, college students' trust perceptions were explored to gain insights about how design factors in electronics retailer Websites influence their trust. By gathering qualitative and quantitative data, design factors and the beliefs of participants were identified. From the data gathered, three themes emerged that show relationships between design factors and college students' trust perceptions, college student's experiences and trust perceptions, and design factors and college students' purchasing decisions. All these themes appear to suggest that design factors in online retailers' Websites GUI influence college students' perception of trust and decision to purchase electronics. Familiarity with the target market is the initial step in designing trust-inducing e-commerce Websites.

By exploring the perspectives, beliefs and experiential accounts of college students, an understanding of the college student market was realized. Students in this

study reported that when they see certain key design elements in e-commerce Websites, which they actively looked for, this would convey a sense of trust to them. Students like receiving information about products—from both the company and other customers—which they perceive as providing comprehensive product description as well as customer reviews and ratings. Students also said that they specifically look for a symbol or proof of the company's identity through the company profile, and third party certifications.

This study adds to the growing body of research about how consumer trust can be gained in an e-commerce environment. In addition, the insights gained about college students' trust perceptions through GUI design factors may be helpful in targeting their market segment. Because of the potential of becoming loyal customers, targeting the college student market and gaining their trust and business may be beneficial to the online retailer and the e-commerce industry as a whole.

APPENDICES

Appendix A

Informed Consent—Survey

Dear Student,

You are invited to participate in a research study titled “Graphical User Interface Design Factors: How college students perceive electronics retailers' Websites”. The purpose of this research is to study the correlation between the design factors of electronics Websites and how college students perceive their trustworthiness. There will be approximately 300 participants in this study.

If you decide to participate, you will first be asked to complete a demographics questionnaire. Then, you will be shown an actual electronics retailer’s Website which you will rate according to the design features identified by researchers Diana Wang and Henry Emurian in a recent study. Participation should take about 15-20 minutes and will be completed after one day.

Once you complete the survey, you will be asked if you would like to participate in a follow-up interview to probe deeper into your answers. If you wish to participate in a follow-up interview, you will be contacted through email to set-up the interview at a later time.

There are no foreseeable risks of participation in this study. Your confidentiality and privacy as participants will be maintained throughout the study. All virtual data gathered for the study will be stored in a secured, password-protected server accessible only to the investigator. All participant files will be stored in a locked file cabinet accessible only to the investigator and the student’s advisor, _____. All data acquired from this research will be securely stored for at least three years after the completion of this study, at which point it will be deleted and discarded appropriately.

You will not be identified individually and names of participants will not be released in the study. The benefit of this research for you, as a participant, is the knowledge of the trust-inducing features that may or may not affect your perception of Website trustworthiness.

Your participation in this study is completely voluntary and you may discontinue participation at anytime. Whether or not you choose to participate in this study will in no way affect your relationship with the electronics Website merchants, _____, or the Department of Technology. You may choose to discontinue your participation in this survey anytime.

Your signature/email address below means that you have read this consent form, that you fully understand the nature and consequences of participation and that you have had all questions regarding participation in this study answered satisfactorily. You will be sent a copy of this consent form through your email address for your perusal.

If you have questions about this research please contact the Principal Investigator, Zue Anne Zapanta by calling _____ or _____, or emailing me at zueanne.zapanta@und.edu. You may also contact my advisor, _____, at _____ or _____.

If you have any concerns regarding your rights as a research subject, or if you have any concerns or complaints about this research, you may contact the _____ Institutional Review Board at _____. Please call this number if you cannot reach research staff, or you wish to talk to someone else

Thank you for your participation in this study.

Zue Anne Zapanta
M.S. Industrial Technology Student
____ Department of Technology

*This consent form appeared on the online survey.

Appendix B

INFORMED CONSENT—Interview

TITLE: Graphical User Interface Design Factors: How college students perceive electronics retailers' Websites

PROJECT DIRECTOR: Zue Anne Zapanta

TELEPHONE: _____ or _____

DEPARTMENT: Technology

STATEMENT OF RESEARCH: A person who is to participate in the research must give his or her informed consent to such participation. This consent must be based on an understanding of the nature and risks of the research. This document provides information that is important for this understanding. Research projects include only subjects who choose to take part. Please take your time in making your decision as to whether to participate. If you have questions at any time, please ask.

PURPOSE OF RESEARCH: The purpose of this research is to study the correlation between the design factors of electronics Websites and how college students perceive their trustworthiness. The graphical user interface is the part a Website that people can see, hear, touch, talk to, or otherwise understand or direct. In order to gain this information, the researcher will analyze how college students perceive Website trustworthiness through its “face”. Gaining the consumer’s trust through the GUI is essential in e-commerce given the numerous competitions by retailers for college student consumers since their purchasing decision is affected by factors such as budget and time. Formulating strategies on how online electronics retailers can gain college student consumers’ trust is best developed by knowing and understanding how they perceive a Website’s graphical user interface.

HOW MANY PEOPLE WILL PARTICIPATE? It is anticipated that approximately four to five college students from the _____ will be interviewed separately.

HOW LONG WILL I BE IN THIS STUDY? The one-on-one interview will take approximately 30 minutes.

WHAT WILL HAPPEN DURING THIS STUDY? The interview will start once you have read and signed this consent form. You will be asked follow-up questions according to the preliminary answers you gave in the online survey. These questions will allow you to explain your answers further and probe deeper on your perceptions about Website design features and trustworthiness.

WILL IT COST ME ANYTHING TO BE IN THIS STUDY? The study will not have any costs for you as the participant.

WILL I BE PAID FOR PARTICIPATING? Compensation will not be provided to students who choose to participate in this study.

WHO IS FUNDING THE STUDY? The _____ and the investigator are not receiving any payments from e-commerce merchants, other agencies, organizations or companies to perform this research.

CONFIDENTIALITY: Your confidentiality and privacy as participants will be maintained throughout the study. The data is not accessible to outside parties. The door to the interview room will be closed to allow you to be comfortable in voicing your opinions and to avoid any interruption. All transcribed notes and data from the interview will be password protected and stored in a private computer. All participant files will be stored in a locked file cabinet accessible only to the investigator and the student's advisor, _____. Names of participants will not be released in the study. All data acquired from this research will be securely stored for at least three years after the completion of this study, at which point will be deleted and discarded appropriately.

IS THIS STUDY VOLUNTARY? Participation in this study is voluntary and you may discontinue participation at anytime. Whether or not you choose to participate in this study will in no way affect your relationship with the e-commerce merchants, _____ or the Department of Technology. If you wish to discontinue participation in the study, please feel free to inform me.

WHAT ARE THE RISKS OF THE STUDY? There are no foreseeable risks or discomforts related to your participation in this study.

WHAT ARE THE BENEFITS OF THIS STUDY? You will have the experience of participating in a interview which may include advancing your knowledge in this inquiry strategy.

CONTACTS AND QUESTION: I will be available to answer any questions you may have about this study before, during or after the interview. You may contact me by calling _____ or _____, or emailing me at zueanne.zapanta@und.edu. You may also contact my advisor, _____, at _____ or _____.

If you have questions regarding your rights as a research subject, or if you have any concerns or complaints about the research, you may contact the _____ Institutional Review Board at _____. Please call this number if you cannot reach research staff, or you wish to talk with someone else.

Your signature indicates that this research study has been explained to you, that your questions have been answered, and that you agree to take part in this study. You will receive a copy of this form. Upon request, you will be informed of the findings of this study.

Thank you for your participation in this study.

Zue Anne Zapanta
M.S. Industrial Technology Student
___ Department of Technology

Participant's Name: _____

Participant's Signature: _____

Date: _____

Appendix C
INFORMED CONSENT—Focus Group

TITLE: Graphical User Interface Design Factors: How college students perceive electronics retailers' Websites

PROJECT DIRECTOR: Zue Anne Zapanta

TELEPHONE: _____ or _____

DEPARTMENT: Technology

STATEMENT OF RESEARCH: A person who is to participate in the research must give his or her informed consent to such participation. This consent must be based on an understanding of the nature and risks of the research. This document provides information that is important for this understanding. Research projects include only subjects who choose to take part. Please take your time in making your decision as to whether to participate. If you have questions at any time, please ask.

PURPOSE OF RESEARCH: The purpose of this research is to study the correlation between the design factors of electronics Websites and how college students perceive their trustworthiness. The graphical user interface is the part a Website that people can see, hear, touch, talk to, or otherwise understand or direct. In order to gain this information, the researcher will analyze how college students perceive Website trustworthiness through its “face”. Gaining the consumer’s trust through the GUI is essential in e-commerce given the numerous competitions by retailers for college student consumers since their purchasing decision is affected by factors such as budget and time. Formulating strategies on how online electronics retailers can gain college student consumers’ trust is best developed by knowing and understanding how they perceive a Website’s graphical user interface.

HOW MANY PEOPLE WILL PARTICIPATE? It is anticipated that approximately eight to ten college students from the _____ will participate in this focus group discussion.

HOW LONG WILL I BE IN THIS STUDY? The focus group will meet for one hour.

WHAT WILL HAPPEN DURING THIS STUDY? The focus group discussion will start after everybody has read and signed the consent form. The facilitator will ask questions on how the individuals in the group perceive a Website’s trustworthiness through the design factors of its GUI. The facilitator will also present three to five Websites and ask the participants to share their perception of each Website’s trustworthiness. Each participant will be allowed to share their thoughts and opinions freely.

WILL IT COST ME ANYTHING TO BE IN THIS STUDY? The study will not have any costs for you as the participant.

WILL I BE PAID FOR PARTICIPATING? Compensation will not be provided to students who choose to participate in this study. Refreshments will be served after the focus group discussion.

WHO IS FUNDING THE STUDY? The _____ and the investigator are not receiving any payments from e-commerce merchants, other agencies, organizations or companies to perform this research.

CONFIDENTIALITY: Your confidentiality and privacy as participants will be maintained throughout the study. The data to be collected are not accessible to outside parties. The room will be closed to allow you to be comfortable in voicing your opinions and to avoid any interruption. You will be assigned numbers so as not to divulge names among participants. Also, prior to the focus group discussion, all participants will be reminded that all opinions and views must remain among the group and must not be disclosed to outside parties. All transcribed data from the focus group discussion will be password protected and stored in a private computer. All participant files will be stored in a locked file cabinet accessible only to the investigator and the student's advisor, _____. Names of participants will not be released in the study. All data acquired from this research will be securely stored for at least three years after the completion of this study, at which point will be deleted and discarded appropriately.

IS THIS STUDY VOLUNTARY? Participation in this study is voluntary and you may discontinue participation at anytime. Whether or not you choose to participate in this study will in no way affect your relationship with the e-commerce merchants, _____ or the Department of Technology. If you wish to discontinue participation in the study, please feel free to approach me.

WHAT ARE THE RISKS OF THE STUDY? There are no foreseeable risks or discomforts related to your participation in this study.

WHAT ARE THE BENEFITS OF THIS STUDY? You will have the experience of participating in the focus group discussion which may include advancing your knowledge in this inquiry strategy and how your fellow college students choose e-commerce Websites that they trust.

CONTACTS AND QUESTIONS: I will be available to answer any questions you may have about this study before, during or after the focus group discussions. You may contact me by calling _____ or _____ or emailing me at zueanne.zapanta@und.edu. You may also contact my advisor, _____, at _____ or _____.

If you have questions regarding your rights as a research subject, or if you have any concerns or complaints about the research, you may contact the _____ Institutional Review Board at _____. Please call this number if you cannot reach research staff, or you wish to talk with someone else.

Your signature indicates that this research study has been explained to you, that your questions have been answered, and that you agree to take part in this study. You will receive a copy of this form. Upon request, you will be informed of the findings of this study.

Thank you for your participation in this study.

Zue Anne Zapanta
M.S. Industrial Technology Student
____ Department of Technology

Participant's Name: _____

Participant's Signature: _____

Date: _____

Online Survey Questions

Study Title: Graphical User Interface Design Factors: How college students perceive electronics retailers' Websites

Demographical Information:

1. Age
2. Gender: M or F
3. Status: Freshman, Sophomore, Junior or Senior
4. Average hours per day spent online:
5. Have you ever purchased electronics online? Yes or No
6. How many times have you purchased electronics online?
7. Have you ever been cheated by an online merchant? Yes or No

Background Information

This research is all about consumer's trust when it comes to purchasing electronics from an online merchant's Website. The purpose of this study is to evaluate your perceptions about trust of an e-commerce Website by asking you to rate the importance of several graphic features on the Abt Electronics Website, which is an actual electronics retailer.

I would like you to assume that you are interested in purchasing a product online from Abt Electronics, review the Website, and then answer the survey questions to determine your opinion about the merchant's reliability and integrity.

Design Features to Rate

Please indicate how important each graphic feature of the Abt Electronics Website is in affecting or influencing your perceived trust. The rating scale ranges from 1 = Not important at all, to 5 = Neutral, to 10 = Extremely important. You may choose any number between 1 and 10 to rate the feature.

Please review the examples featured on the Abt Electronics Website before you make your evaluation, and be sure to choose only one number for each feature.

1. How important is the use of three-dimensional and half-screen size images on the home page in influencing your trust?
2. How important is the use of symmetric (balanced), moderate pastel colors of low brightness and cool tone on the Web pages in affecting your trust?
3. How important is the use of photographs on the Web pages in influencing your trust?
4. How important is easy-to-use navigation on the Web pages in affecting your trust?

5. How important is the access of information (do the links and images work) on the Web pages in influencing your trust?
6. How important is the use of navigation reinforcement on the Web pages in affecting your trust? (navigation anchors like “Home >(product category) >(product)” near the upper left side when you click on a specific category/product
7. How important is the application of page design techniques, like use of ample white space and adequate margins or strict grouping of related information and low visual density, on the Web pages in influencing your trust?
8. How important is the display of brand-promoting information (company logo and slogan) on the Web pages in affecting your trust?
9. How important is up-front disclosure of all aspects of customer relationships like policies on shipping, return and price match, as well as privacy policy and site security, in influencing your trust?
10. How important is the display of seals of approval or third-party certificates like BBBOnline, McAfee and VeriSign seals in affecting your trust?
11. How important is the comprehensive, correct, and current product information in influencing your trust?
12. How important is the use of a relevant domain name in affecting your trust?
For example, the domain name of www.abt.com is named after the founder of the company, David Abt.
13. How important is the inclusion of representative photographs or video clips, like the picture of a representative at the bottom of the page, in influencing your trust?
14. How important is the use of synchronous communication media, like a link for “Live Chat” where users can exchange instant messages with a sales representative at the top center of the page in affecting your trust?
15. Rate your opinion or perception of the overall level of trustworthiness of the Abt Electronics Website.

Appendix E

Reference # _____

Interview Questions

Study Title: Graphical User Interface Design Factors: How college students perceive electronics retailers' Websites

Because my research is qualitative in nature, the interview questions will be based on the participant's answers to the initial online survey. Some questions that may be asked are:

1. How did you start shopping online?
2. Did you have any hesitations when you first started online shopping? What were your hesitations?
3. Why did you rate this design feature higher than the others?
4. Why do you believe this design feature is less important?
5. When you see this design feature, how do you perceive the Website?
6. What other design features do you look for in determining a Website's trustworthiness when shopping for electronics online?
7. What aspects of a Website's GUI design features do you believe influence your decision to purchase?
8. What other Websites do you trust when you want or need to purchase electronics?
9. How important is the design features of a Website in your decision to purchase?

Appendix F

Reference # _____

Focus Group Questions

Study Title: Graphical User Interface Design Factors: How college students perceive electronics retailers' Websites

Because my research is qualitative in nature, the focus group questions will be based on the results of the survey and the flow of discussion. Some guiding questions that may be asked are:

1. What aspects of a Website's GUI design features do you believe influence your decision to purchase electronics?
2. What design features do you look for in a Website when shopping for electronics online?
3. After viewing these different Websites, how do you perceive their trustworthiness?
4. What design features of the Website are most influential in determining trustworthiness?

Appendix G

Online Survey Screenshots

Informed Consent

Dear Student,

You are invited to participate in a research study titled 'Graphical User Interface Design Factors: How college students perceive electronics retailers' Websites'. The purpose of this research is to study the correlation between the design factors of electronics websites and how college students perceive their trustworthiness. There will be approximately 300 participants in this study.

If you decide to participate, you will first be asked to complete a demographics questionnaire. Then, you will be shown an actual electronics retailer's website which you will rate according to the design features identified by researchers Diana Wang and Henry Emurian in a recent study. Participation should take about 15-20 minutes and will be completed after one day.

Once you complete the survey, you will be asked if you would like to participate in a follow-up interview to probe deeper into your answers. If you wish to participate in a follow-up interview, you will be contacted through email to set-up the interview at a later time.

There are no foreseeable risks of participation in this study. Your confidentiality and privacy as participants will be maintained throughout the study. All virtual data gathered for the study will be stored in a secured, password-protected server accessible only to the investigator. All participant files will be stored in a locked file cabinet accessible only to the investigator and the student's advisor, Dr. Lynda Kenney. All data acquired from this research will be securely stored for at least three years after the completion of this study, at which point it will be deleted and discarded appropriately. You will not be identified individually and names of participants will not be released in the study. The benefit of this research for you, as a participant, is the knowledge of the trust-inducing features that may or may not affect your perception of website trustworthiness.

Your participation in this study is completely voluntary and you may discontinue participation at anytime. Whether or not you choose to participate in this study will in no way affect your relationship with the electronics website merchants, University of North Dakota, or the Department of Technology. You may choose to discontinue your participation in this survey anytime.

Your signature/email address below means that you have read this consent form, that you fully understand the nature and consequences of participation and that you have had all questions regarding participation in this study answered satisfactorily. You will be sent a copy of this consent form through your email address for your perusal.

If you have questions about this research please contact the Principal Investigator, Zue Anne Zapanta by calling 1-701-777-2429 or 1-218-779-7268, or emailing me at zueanne.zapanta@und.edu. You may also contact my advisor, Dr. Lynda Kenney, at 1-701-777-2197 or Lynda.kenney@und.edu.

If you have any concerns regarding your rights as a research subject, or if you have any concerns or complaints about this research, you may contact the University of North Dakota Institutional Review Board at 701-777-4279. Please call this number if you cannot reach research staff, or you wish to talk to someone else.

Thank you for your participation in this study.

Zue Anne Zapanta
M.S. Industrial Technology Student
UND Department of Technology

Enter your email address below to signify your consent to participate in this study:

Screenshot 1. Informed consent page

Demographic Information

1. Age.....

2. Gender.....

3. Status.....

4. Average hours per day spent online.....

5. Have you ever purchased electronics online?.....

6. How many times have you purchased electronics online?.....

7. Have you ever been cheated by an online merchant?.....

Background Information

This research is all about consumer's trust when it comes to purchasing electronics from an online merchant's website. The purpose of this study is to evaluate your perceptions about trust of an e-commerce website by asking you to rate the importance of several graphic features on the Abt Electronics website, which is an actual electronics retailer.

I would like you to assume that you are interested in purchasing a product online from Abt Electronics, review the website, and then answer the survey questions to determine your opinion about the merchant's reliability and integrity.

Design Features to Rate

Please indicate how important each graphic feature of the Abt Electronics website is in affecting or influencing your perceived trust. The rating scale ranges from 1 = Not important at all, to 5 = Neutral, to 10 = Extremely important. You may choose any number between 1 and 10 to rate the feature.

Please review the examples featured on the Abt Electronics website before you make your evaluation, and be sure to choose only one number for each feature.

Screenshot2 . Demographic information page

SURVEY - Graphical User Interface Design Factors: How college students perceive electronics retailers' Websites

There are 16 questions in this survey.

A note on privacy

This survey is anonymous. The record kept of your survey responses does not contain any identifying information about you unless a specific question in the survey has asked for this. If you have responded to a survey that used an identifying token to allow you to access the survey, you can rest assured that the identifying token is not kept with your responses. It is managed in a separate database, and will only be updated to indicate that you have (or haven't) completed this survey. There is no way of matching identification tokens with survey responses in this survey.

Next >>

(Exit and clear survey)



Screenshot3 . A note on privacy

SURVEY - Graphical User Interface Design Factors: How college students perceive electronics retailers' Websites

0% 100%

Design Factors

*1. How important is the use of three-dimensional and half-screen size images on the home page in influencing your trust?

1 2 3 4 5 6 7 8 9 10

1 2 3 4 5 6 7 8 9 10

1 = Not Important 5 = Neutral 10 = Extremely Important

<< Previous Next >>

(Exit and clear survey)



Screenshot4 . Survey question 1: How important is the use of three-dimensional and half-screen size images on the home page in influencing your trust?

0% 100%

Design Factors

2. How important is the use of symmetric (balanced), moderate pastel colors of low brightness and cool tone on the web pages in affecting your trust?

1 2 3 4 5 6 7 8 9 10

1 = Not important 5 = Neutral 10 = Extremely important

<< Previous Next >> (Exit and clear survey)



Screenshot 5. Survey question 2: How important is the use of symmetric (balanced), moderate pastel colors of low brightness and cool tone on the Web pages in affecting your trust?

0% 100%

Design Factors

3. How important is the use of photographs on the web pages in influencing your trust?

1 2 3 4 5 6 7 8 9 10

1 = Not important 5 = Neutral 10 = Extremely important

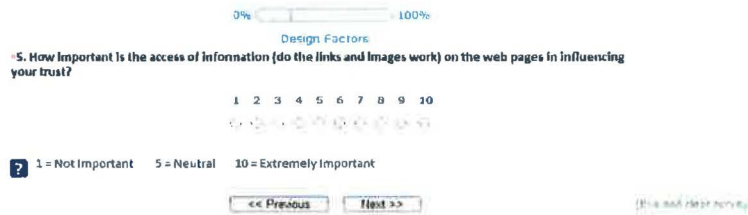
<< Previous Next >> (Exit and clear survey)



Screenshot 6. Survey question 3: How important is the use of photographs on the Web pages in influencing your trust?



Screenshot 7. Survey question 4: How important is easy-to-use navigation on the Web pages in affecting your trust?



Screenshot 8. Survey question 5: How important is the access of information (do the links and images work) on the Web pages in influencing your trust?

0% 100%

Design Factors

6. How important is the use of navigation reinforcement on the web pages in affecting your trust? (navigation anchors like "Home >(product category) > (product)" near the upper left side when you click on a specific category/product)

1 2 3 4 5 6 7 8 9 10

1 = Not Important 5 = Neutral 10 = Extremely important

<< Previous Next >>

[End and close survey]



Screenshot 9. Survey question 6: How important is the use of navigation reinforcement on the Web pages in affecting your trust?

0% 100%

Design Factors

7. How important is the application of page design techniques, like use of ample white space and adequate margins or strict grouping of related information and low visual density, on the web pages in influencing your trust?

1 2 3 4 5 6 7 8 9 10

1 = Not Important 5 = Neutral 10 = Extremely important

<< Previous Next >>

[End and close survey]



Screenshot 10. Survey question 7: How important is the application of page design techniques, like use of ample white space and adequate margins or strict grouping of related information and low visual density, on the Web pages in influencing your trust?

0% 100%

Design Factors

***8. How important is the display of brand-promoting information (company logo and slogan) on the web pages in affecting your trust?**

1 2 3 4 5 6 7 8 9 10

1 = Not Important 5 = Neutral 10 = Extremely Important

<< Previous Next >>

[Exit and close survey]



Screenshot 11. Survey question 8: How important is the display of brand-promoting information (company logo and slogan) on the Web pages in affecting your trust?

0% 100%

Design Factors

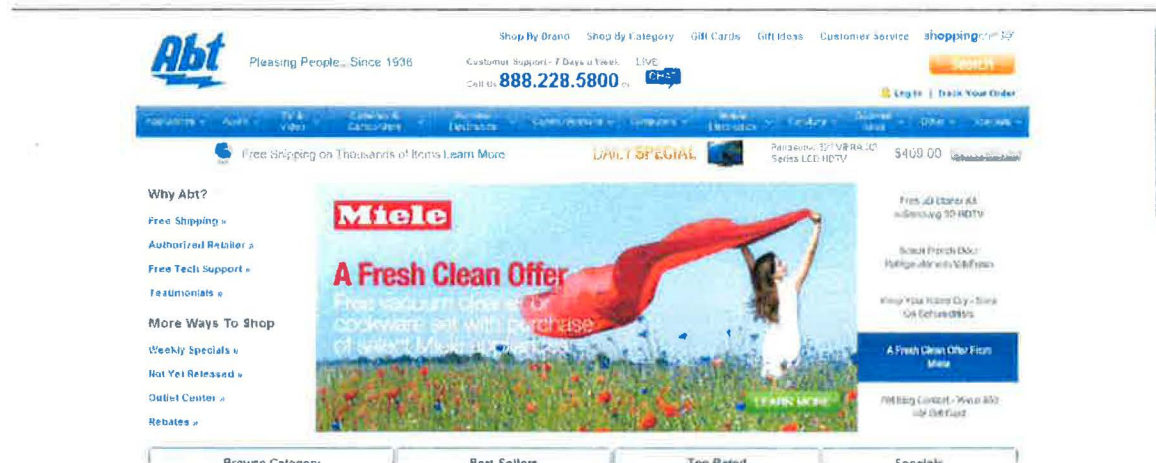
***9. How important is up-front disclosure of all aspects of customer relationships like policies on shipping, return and price match, as well as privacy policy and site security in influencing your trust?**

1 2 3 4 5 6 7 8 9 10

1 = Not Important 5 = Neutral 10 = Extremely Important

<< Previous Next >>

[Exit and close survey]



Screenshot 12. Survey question 9: How important is up-front disclosure of all aspects of customer relationships like policies on shipping, return and price match, as well as privacy policy and site security in influencing your trust?

0% 100%

Design Factors

*10. How Important is the display of seals of approval or third-party certificates like BBBOnline, McAfee and VeriSign seals in affecting your trust?

1 2 3 4 5 6 7 8 9 10

1 = Not Important 5 = Neutral 10 = Extremely Important

<< Previous Next >>

(Exit and clear survey)



Screenshot 13. Survey question 10: How important is the display of seals of approval or third-party certificates like BBBOnline, McAfee and VeriSign seals in affecting your trust?

0% 100%

Design Factors

*11. How Important is the comprehensive, correct, and current product information in influencing your trust?

1 2 3 4 5 6 7 8 9 10

1 = Not Important 5 = Neutral 10 = Extremely Important

<< Previous Next >>

(Exit and clear survey)



Screenshot 14. Survey question 11: How important is the comprehensive, correct, and current product information in influencing your trust?

0% 100%

Design Factors

***12. How important is the use of a relevant domain name in affecting your trust? For example, the domain name of www.abt.com is named after the founder of the company, David Abt.**

1 2 3 4 5 6 7 8 9 10

1 = Not Important 5 = Neutral 10 = Extremely Important

<< Previous Next >>

(End of 2009 Survey)



Screenshot 15. Survey question 12: How important is the use of a relevant domain name in affecting your trust?

0% 100%

Design Factors

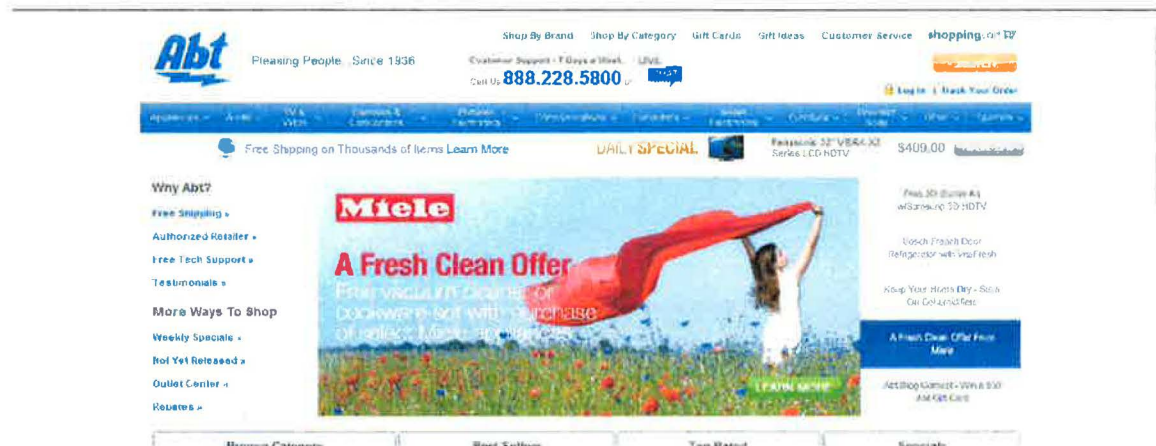
***13. How important is the inclusion of representative photographs or video clips, like the picture of a representative at the bottom of the page, in influencing your trust?**

1 2 3 4 5 6 7 8 9 10

1 = Not Important 5 = Neutral 10 = Extremely Important

<< Previous Next >>

(End of 2009 Survey)



Screenshot 16. Survey question 13: How important is the inclusion of representative photographs or video clips, like the picture of a representative at the bottom of the page, in influencing your trust?

0% 100%

Design Factors

14. How important is the use of synchronous communication media, like a link for "Live Chat" where users can exchange instant messages with a sales representative at the top center of the page in affecting your trust?

1 2 3 4 5 6 7 8 9 10

1 = Not Important 5 = Neutral 10 = Extremely Important

<< Previous Next >>

[Exit and clear survey]



Screenshot 17. Survey question 14: How important is the use of synchronous communication media, like a link for "Live Chat" where users can exchange instant messages with a sales representative at the top center of the page in affecting your trust?

0% 100%

Design Factors

15. Please rate your overall level of trust of the Abt Electronics Website.

1 2 3 4 5 6 7 8 9 10

1 = Not Important 5 = Neutral 10 = Extremely Important

<< Previous Next >>

[Exit and clear survey]



Screenshot 18. Survey question 15: Please rate your overall level of trust of the Abt Electronics Website.

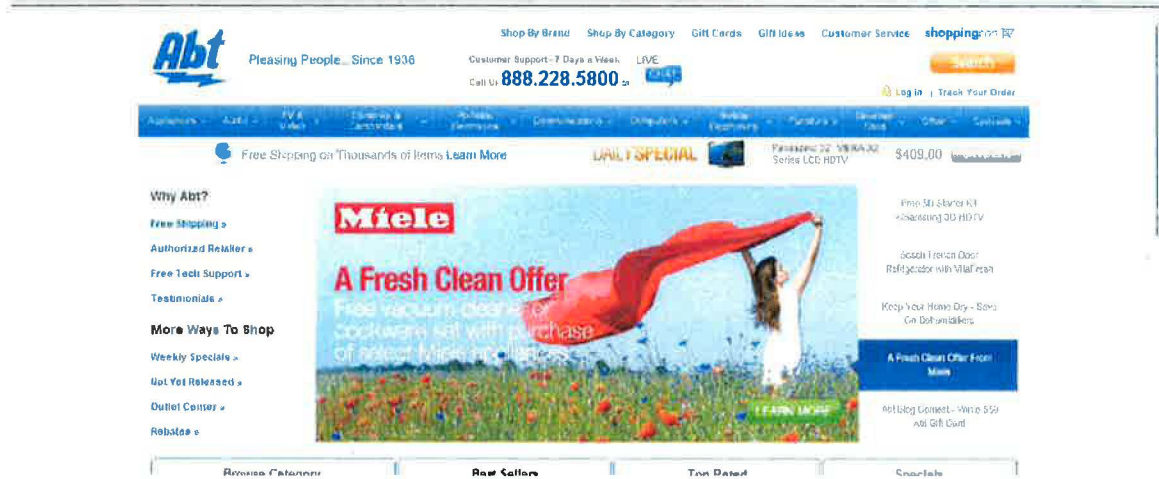
0% 100%

Design Factors

15. Are you interested in participating in a follow-up interview to further share your views and thoughts on this subject?

Yes No

(Exit and clear survey)



Screenshot 19. Interview volunteer recruitment



Screenshot 20. End page

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