

The Effects of Website Design on Consumer Trust in E-Commerce

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Statement of Originality

I certify that the work presented in this thesis is, to the best of my knowledge and belief, original, except as acknowledged in the text, and that the material has not been submitted, either in whole or in part, for any other degree at this or any other university.

I acknowledge that I have read and understood the University's rules, requirements, procedures and policy relating to my degree and to my thesis. I certify that I have complied with the rules, requirements, procedures and policy of the University (as they may be from time to time).

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Abstract

Vendors operating commercial websites face significant obstacles with regard to the uptake and acceptance of e-commerce in the minds of consumers. The impact of cyber-crime has had a substantial influence on the attitudes and perceptions of consumers, creating an atmosphere of distrust in the systems. Although considerable progress has been made towards securing the Internet environment many consumers remain reluctant to participate in making on-line purchases.

The main argument in this study is that consumer trust depends on more than just the consumers' belief in the security of on-line systems, of equal or greater importance is the application of traditional trust building strategies which have been utilised in marketing for many years. In many cases these strategies have been overlooked by web developers and vendors alike. The main conclusions reached after evaluation of the literature and the findings of the study that forms the basis of this thesis indicate that website design can indeed have a positive effect on consumer trust in e-commerce. A great deal of responsibility for reinforcing trust in consumers lies with the web developers. This can be achieved by making efforts to educate and engender trust in visitors through the overall design and informational content of the website itself and through a careful selection and combination of website design components to be included on each website.

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List of Terms and Abbreviations

B2B - Business-to-Business e-commerce.

B2C - Business-to-Consumer e-commerce.

Explanatory Variable - See Independent Variable.

GLM – General Linear Model.

HTTP - Hypertext Transfer Protocol.
A set of rules for the transmission of data over the Internet.

Intercept - often labelled the constant in regression analysis, is the expected mean value of Y when X = 0.

Internet - the infrastructure of the World Wide Web consisting of a vast network of computers and other devices interconnected throughout the world via communications channels.

MLR – Multiple Linear Regression.

OECD - an international organisation helping governments tackle the economic, social and governance challenges of a global economy.

p – Probability. See sig.

Response Variable - See Dependent Variable.

Sampling Frame - a statistical term which is described as the accessible population from which a sample is drawn.

SCU - Southern Cross University.

sig. – Significance; SPSS term for probability.

Skype – On-line audio visual communications web service.

SPSS - an acronym for "Statistical Package for the Social Sciences", now re-branded as PASW "Predictive Analytics SoftWare".

URL - "Universal Resource Locator" often described as a link or Web address.

WWW - an acronym for "World Wide Web". This represents the content displayed on the Internet.

XHTML - an acronym for "Extensible Hypertext Markup Language".

XHTML is the language of the World Wide Web.

Conventions Used in this Thesis

Throughout this thesis when referring to variables used in the survey and the data analyses the response variables have been underlined whilst the explanatory variables have been italicised.

Chapter 1: Introduction

1.1 Background

The World Wide Web (WWW) began as a concept contained in Tim Berners-Lee's proposal to physicists in 1989, suggesting a means for physicists to exchange data with each other. Hypertext Mark-up Language (HTML) and Hypertext Transfer Protocol (HTTP) together with a platform independent web browser were eventually developed for this purpose at CERN European Council for Nuclear Research, in late 1989. In 1991 the first server at CERN was established with only a few web pages, a single decade later there were over 24 million servers in existence worldwide (Kizza 2002).

In their March 2009 survey netcraft.com (2009) reported responses from 224,749,695 websites. This unprecedented growth in the Web has led to a plethora of new types of crime that did not exist before the advent of the Internet revolution. These crimes range from spam, fraud, harassment, obscene content... through to cyber terrorism. Of particular concern to the development of e-commerce has been the impact that cyber fraud has had on consumer trust in Internet transactions.

Recent OECD (2008a) reports indicate that security problems in the on-line environment continue to grow despite increasing efforts to counteract them and that credit/debit card fraud remains a major barrier preventing the acceptance of e-commerce by potential users.

Ethical practices and security within e-commerce are a concern for all who make transactions over the Web. The main concern is that the transaction information may be used unethically or in a manner that is not approved by the consumer. E-commerce practitioners are beginning to understand the connection between trust and profit, and in response are designing websites focused on what the consumers want when it comes to how their data is used in an effort to earn or reinforce consumer trust. Consumer trust can be built by reinforcing website security and by embedding within the website design sound strategies to engender trust.

1.2 Research Problem and Hypothesis

This research focussed on the need for e-commerce website operators to engender and maintain the trust of their potential and existing customers. The research problem can be stated as follows:

- **How can web developers, marketers and e-commerce business operators ensure that the design and implementation of their websites are optimised to gain and reinforce the trust of consumers?**

The first point of contact in an e-commerce business for an on-line shopper is the website's interface. The visual appeal of a website is often where an on-line shopper will draw their first impressions and sense an initial level of trustworthiness. However it requires far more than clever visual design to persuade a potential customer to risk making an on-line transaction. It is in the content and design of a website where the initial impressions can be developed into a stronger level of trust. The research questions raised in this study focus upon website design components and seek to identify how the content and design of a website can reinforce the trust of consumers as follows.

- 1. Can website design components have an effect on consumer trust?**
- 2. If so which trust building website components are the most influential?**
- 3. Are there differences relating to on-line trust and website components across different user profiles?**

The research conducted in this study was focussed on identifying website components and features which play a significant part in building on-line trust in consumers and sought to identify which components and features were most important to different user profiles. The following research hypotheses were formulated from the above research questions.

H1: "Website components can have a positive effect on a consumer's trust in e-commerce"

H2: "There are differences in the importance of various website design components towards gaining consumer trust between differing user profiles."

The aim of the study was to explore questions above and confirm the above hypotheses. This involved an on-line survey where respondents are asked to give their responses regarding their interaction with a number of website components which are commonly incorporated into the design of many e-commerce websites.

The findings of the study indicate that combinations of various website components can have a positive effect upon a number of users of different profiles. In particular it can be seen that *Privacy Statements* are in general the most influential and that *E-Trust Certificates* become increasingly important as an on-line user's experience increases.

Thus the findings of this research make a significant contribution to the field of e-commerce by validating that website design can indeed positively have an effect upon consumer trust and by identifying which components are the most influential. Website developers, marketers and e-commerce practitioners have a need to be aware of these issues in order to gain the trust of potential customers.

1.3 Justification for the Research

In previous research and other studies of consumer trust issues in e-commerce many have focused on specific factors and/or influences which may have an effect upon trust such as privacy, security, control and cyber crime amongst others (Black 2005; Castelfranchi & Falcone 1999; Chellappa & Pavlou 2002; Cook & Luo 2003; Davis 1989; Egger 2003; Flavián & Guinalú 2006; Ganzaroli, Tan & Thoen 1999; Hu & Wu 2008; Kim & Benbasat 2006; Lauer & Deng 2007; Lee, Ang & Dubelaar 2004; Luo et al. 2006; Marsh, Meech & Dabbour 2000; Pan & Zinkhan 2006; Patton & Josang 2004; Pavlou 2003; Pavlou & Ba 2002; Peterson et al. 2007; Pittayachawan 2007; Robert, Bernard & Gladie 2008; Tan & Sutherland 2004; Wakefield & Whitten 2006; Xiaorui & Yuhong 2008). Yet these studies have often overlooked the effects that different website design components and features may play in the task of building consumer trust from a website itself.

Although many of the above factors are shown to have an effect on consumer trust and are also often the basis for the design and development of various website components, no studies or literature were identified that have focused on the combined effects of the components themselves. The costs involved in website development represent a significant investment of resources for the businesses concerned. By identifying which components are important to which users the costs of the development of a website can be incrementally managed more efficiently. Identifying those components that can be built into a website to maximise customers trust can lead to more efficient development practices.

For example the findings of the study show that *Privacy Statements* are in general the most influential component on a website for reinforcing a consumer's trust. The study also reveals that *Privacy Statements* can be more effective when combined with other website components. In the case of Trust in giving Credit Card details to Websites, the findings show that trust is further reinforced when *Privacy Statements* are combined with *Assistance via Phone* and *Product Branding*.

1.4 Methodology

The methodology used in this research as mentioned previously involved an on-line survey where respondents were asked to rate the importance of a number of website components. An on-line survey was chosen as the research instrument for the study as it can easily target Internet users who are potential/practicing on-line shoppers and also filter out those who do not have Internet access and little interest in on-line shopping

The survey questionnaire was designed to measure how often a respondent would check for the presence of a variety of website components commonly found on many e-commerce sites. Respondents were also asked to complete a number of questions regarding their demographic profile, their technical experience and their predisposition towards trust in websites in general and in particular trust in giving credit card details to websites.

The data was examined using descriptive statistical techniques with the hypothetical models shown in Chapter 3 tested using Multiple Linear Regression analysis.

1.5 Limitations and Key Assumptions

Possible limitations to the study primarily concern the survey's sample population, which consists of respondents who show a higher level of education and technical experience than the overall population. Also younger males appear to be under represented in the survey sample and user profiles are primarily limited to technical experience due to the scope of the study and the limits of the study's timeframe. These limitations are not assumed to place any doubt upon the findings of the study.

1.6 Outline of the Thesis

This thesis is comprised of five chapters as follows:

1. Introduction

Chapter 1 outlines and briefly discusses the scope of this research. Here the reasons for the research, the importance of the topic as well as the research problems and hypotheses are briefly discussed. The methodology behind the research and the final conclusions are also introduced in order to ensure that the reader has a clear overview of the study and its relevance within the field of e-commerce.

2. Literature Review

Chapter 2 presents a review of previous academic research related to consumer trust in e-commerce and the theoretical frameworks put forward by earlier studies of the subject. The chapter begins with an outline of recent trends leading up to the present and discusses issues impeding the growth of Business to Consumer (B2C) e-commerce including the impact of technology, security and the problems of engendering trust in the minds of consumers. Several theoretical models of how the establishment of trust works within the context of e-commerce are reviewed and these models become the theoretical foundations upon which this research is based. Finally three questions are raised from which the research hypotheses are formulated in the next chapter.

3. Methodology

Chapter 3 begins by introducing the research hypotheses formulated from the questions raised in Chapter 2 and then outlines the measures used in the study to test them. The methodology and approach taken is then discussed, identifying the primary research instrument chosen for the study as an on-line survey, and then the methods employed and the reasons why they were chosen are detailed. The target population, sampling techniques, survey questionnaire design and the handling and processing of data are explained as well as the control measures taken to ensure the validity of the data that was collected from the survey. Finally the primary technique for the data analysis used in the study is introduced and identified as Multiple Linear Regression.

4. Data Analysis

Chapter 4 reports the results of the on-line survey and the findings from the descriptive and regression analysis of the data. The descriptive statistics reported for each variable are divided into 4 separate categories as follows:

- trust,
- demographic characteristics,
- respondents computer experience and
- use of website components.

This chapter provides both a descriptive analysis of the data and the results of model testing. Model testing was undertaken using Multiple Linear Regression analysis. The description of this process includes discussion of the assumptions that underlie regression analysis and the testing undertaken to ensure the data set from the study meets these assumptions. The chapter then concludes by outlining and discussing the non-parametric tests which were conducted to support the model analysis.

5. Conclusion

Chapter 5 revisits the research problems, questions and hypotheses and summarily confirms the accomplishments of the research effort of this study. Firstly general conclusions are drawn from the findings of the data analysis and then these conclusions are expanded to specifically focus upon the problem of engendering trust in consumers. An analogy is presented which is used to relate the research findings to the theoretical frameworks chosen for the study which were identified in the Literature Review. Further conclusions are then drawn concerning the implications of the research findings related to policy and practice in the field of E-Commerce. Limitations of the study and suggestions for further research are then discussed before a final summary of the conclusions is made.

Chapter 2: Literature Review

2.1 Introduction

The purpose of this study was to discover to what extent consumer trust amongst differing user profiles purchasing from an on-line vendor can be reinforced by website components and features. The more importance an on-line vendor places upon customer care the higher the degree of trust that will be instilled in each visitor hopefully resulting in increased sales and customer loyalty.

E-commerce developed from Electronic Data Interchange (EDI) which allowed established business traders to trade over *private* networks. The evolution of the Internet provided a more affordable means for businesses to trade on a single and *open* network; Business-to-Business (B2B) e-commerce emerged. Businesses embraced this avenue for trade quickly as commercial relationships between businesses are formed on the basis that the trading partners know and trust each other. The Internet has since grown and so too has the number of private users. This has led to the advent of **Business-to-Consumer** (B2C) e-commerce (Egger 2003). The issues of consumer trust in e-commerce have emerged as the relationship between a provider and a customer is more transient and usually involves a single transaction between unknown parties.

In efforts to promote consumer trust in B2C e-commerce much emphasis has been placed upon the development of security measures in the underlying technologies of the Internet i.e. protocols, encryption, hardware and systems. These efforts, which have primarily been made by technicians and engineers working on the infrastructure, have indeed led to more secure systems. However Ulivieri (2004) argues that this has not translated well into the minds of consumers who in the vast majority of cases have little comprehension of the technologies involved. The security measures to make the Internet a safer place to conduct business have not significantly increased consumer trust (OECD 2008a). The establishment of consumer trust is far more related to sociological principles than it is to technical solutions (Ulivieri 2004).

Vendors, consumers and marketing experts appear to lack an understanding of the security technologies involved in web based transactions. Business policy in respect to consumer trust should be determined by each business in partnership with the web developer rather than relying solely on the web developer to embed the business's culture and goals on the website.

However if developers understand the fundamental design and marketing principles for gaining trust they can act in an advisory capacity and provide possible solutions to the problems of building consumer trust on the web.

2.2 Barriers to Growth of E-Commerce

Some of the obstacles to be overcome include that the infrastructure of the Internet and the communications protocol it uses are not secure. Another constraint is that an average user has very little knowledge of how the Internet works and overall society is becoming more dependent on its infrastructure. It is difficult to educate the public in this regard especially as the Internet is a global environment crossing international boundaries and is developing at such a pace that regulation by conventional law is often inadequate. In many cases when weaknesses in the technologies behind the systems are compromised the only means of repair is patching loopholes after an intrusion has happened, often this is too late. Also the reporting of security flaws and fraud is not and cannot be made compulsory and the seriousness of the matter is yet to be fully realized (Kizza 2002).

Recent OECD (2008a) reports state that security and trust issues in the on-line environment continue to grow despite increasing efforts to counteract them and that the impact of reports of credit/debit card fraud (often overstated) remains a major barrier preventing the acceptance of e-commerce in the minds of potential users. They also suggest that there is a real challenge to businesses to persuade consumers that e-commerce can be managed safely (OECD 2008a). This indicates a need for on-line vendors to play an active part in the education of users with regards to their on-line practices and to make efforts to instil trust in their customers.

2.3 Impact of Technology

Consumer trust related to the Internet is a major growth area of research according to the findings of a review of the current literature and the future research directions in Internet marketing (Schibrowsky, Peltier & Nill 2007). Trust in internet transactions is a key issue for the whole of the e-business industry and with the recent increases in phishing websites, identity theft, spam, and consumer tracking activities; consumers remain wary of all activities related to the WWW (OECD 2008a; Schibrowsky, Peltier & Nill 2007; Singh 1997; Tan & Sutherland 2004). These issues are compounded by the fact that new technologies of interacting on the WWW and new payment systems are constantly evolving even in new areas such as mobile telecommunications. It appears that as many new technologies emerge so too

do new ways to exploit unsuspecting users. These mobile technologies have been classified as what is termed Mobile Commerce (OECD 2008b). This field represents an area of research which has as yet seen little investigation.

Currently many existing websites are being adapted to enable mobile devices to interact with them as many new devices are now web capable. Mobile devices have permeated throughout society and users are particularly vulnerable due to this mobility, as these devices can be easily lost or stolen. One such example is illustrated by the OECD (2008b). The case describes a user travelling overseas and having her phone stolen. She was informed that her phone would not work overseas and therefore did not report its theft. Upon her return home she arrived to find a bill in the vicinity of \$20,000.00. Although the phone itself would not work in a foreign network the sim card in it could be removed and used in another device (OECD 2008b). Mobile devices can now be easily enabled with a payment system where charges for goods and services can be made to the users' phone bill. This represents a huge potential for many kinds of exploitation from fraud to identity theft which further contributes towards consumers overall distrust in e-commerce. Mobile Commerce or m-commerce which is relatively new has a close relation to e-commerce and has its own unique set of problems yet falls outside the scope of this study.

2.4 Security Issues

Progress toward establishing consumer trust has primarily concerned the development of security technologies utilising encryption standards in order to validate, authorize and protect users over the Internet. The Internet is an open or public network as opposed to a private or closed network as utilised by the banking industry in systems such as Electronic Funds Transfer (EFT) and Electronic Funds Transfer Point of Sale (EFTPOS).

An open system is subject to the possibility of the interception of sensitive data transmitted between parties by another unknown party. The main concern is data containing a user's credit/debit card details. If this data is intercepted by an unknown agent the information can be used fraudulently. Encryption of the data greatly reduces this risk. However the majority of users have little comprehension of how this process works and their distrust is predominantly oriented towards the vendor whom they are giving the information to. Unsure of the details of the process consumers fear that the vendor may somehow violate their security in some way.

Another frequent misunderstanding is that in order to process a credit card payment the vendor must be a registered merchant. Credit card networks are comprised of four different participants'; consumers, issuers, merchants and acquirers. Issuers are the financial institutions such as banks that issue cards to consumers. Acquirers such as VISA or MasterCard issue merchant accounts to merchants and regulate the credit card systems by paying fees to issuers and earning income via discounts from merchants (Chakravorti 2001). Merchants come under the close scrutiny of the acquirers to ensure proper adherence to the rules and regulations of the system. However the fears in the minds of consumers are not entirely unwarranted due to the practice of auto billing where a merchant bills a consumer on a periodic basis.

This implies that the consumer's credit card details must be recorded somewhere in order to facilitate this process. Credit cards have been in use for many years preceding the emergence of Internet based e-commerce however recorded details of consumers' credit card information would reside on the premises, whereas details provided to an e-commerce system could reside on a server anywhere (not necessarily on the vendors premises) and as the server is web-based is therefore more vulnerable to security breaches.

A detailed explanation of these security issues appears to be missing from the research materials. Further research is required to examine the possibility that consumers trust may be enhanced by informing them of details behind the payment processes. This could be difficult to achieve as the following quote by a contributing editor of "The Green Sheet" The Financial Services Industry Source for Education, Inspiration and Actionable Advice may illustrate:

"I remember the first time I needed to set up a merchant account to accept credit and debit cards. I knew plenty about banking and payments, at least on a theoretical level. Heck, at that time I'd been writing about those subjects for 20 years. But I actually had little understanding about the mechanics of accepting card payments." (Murphy 2004, p. 1)

Here is another quote from the chief editor Tony Ogden:

"If the massive efforts of practically every company in the bank card industry are embodied in the terms of a merchant agreement, shouldn't you at least read it? Surprisingly, despite the tremendous resources expended to build solid businesses and maintain strong merchant account portfolios, many operations never bother to read, review, and understand the terms of their merchant agreements."(Ogden 2002, p. 1)

If the merchants don't fully appreciate the processes how can they possibly educate the customers from their websites?

2.5 Implications of Trust Relating to E-Commerce

Trust is a multidimensional concept and relevant to a number of disciplines including personal and social psychology as well as economics and marketing. Most of the concepts related to trust are applicable to all of these fields including e-commerce. Trust has long been associated with marketing, for example many business operators would not argue that sales can increase dramatically if your establishment is clean, the décor pleasing and the sales staff well presented and attentive to customers needs. These kinds of measures can be seen as efforts to reinforce trust in potential customers.

Trust or the decision/act of trusting is strongly associated with the management of risk (Castelfranchi & Falcone 1999; Ulivieri 2004). Ulivieri (2004) suggests that trust is never certain and that the process of making a decision to trust involves the acceptance of some level of risk. He suggests that where there is no perceived level of risk, trust is not a concern. Castelfranchi and Falcone (1999) suggest that risk concerns the outcome of an event or a choice and that trust is associated with a person, entity or some other agent. This can be described in such a way as: We risk trusting a particular agent (website), expecting the outcome to be successful.

Another implication is that trust and risk can be measured in degrees from. low to high and that trust is dynamic by nature, meaning that it can be gained or lost over a period of time, depending upon the outcome of events (Castelfranchi & Falcone 1999; Ulivieri 2004). Castelfranchi & Falcone (1999) also suggest that trust is not always good and can lead to a level of *over confidence* which in turn may lead to a failure and or a vulnerability. These concepts become an important factor later in Chapter 5 'Conclusion' regarding the interpretation of what the responses to the survey's questionnaire signifies.

2.6 Aspects of Trust

Website design is the domain of web developers who traditionally focus their efforts on technical detail such as coding of the site. Design in this context refers to the structure and functionality as opposed to visual design elements. Visual design however is an important factor as it is often the first aspect of a website a visitor will notice (Egger 2003). Although cosmetic in nature the visual appeal of a website gives cues to a visitor which engender an initial trust value. Egger (2003) states that this first impression can lead to a deeper level of trust as the visitor explores the content of the website. In contrast too much focus on clever visual design may also hide important informational content. It is often left to the developer to balance all the elements of the websites construction and consequently marketing fundamentals may be overlooked in the overall design.

Topics of research into consumer trust in e-commerce in the past have seen a strong focus on security. Although security is an important issue it is more relevant to what is termed “**Hard**” trust (Singh & Slegers 1998). Hard trust issues concern the underlying technologies which build security in transactions by the means of encryption and warranting structures and establish the authenticity of a user. Ulivieri (2004) uses the term “**Control**” trust to refer to a similar concept as does Egger (2003) in his thesis.

Ulivieri (2004) states in his report “Naïve Approaches to Trust Building in Web Technologies” that it is more important to consider the “perceived” security engendered in users as a result of the sites efforts to build trust.

He states that:

“If a user doesn’t believe that the environment they are in is secure it will make little difference if it is secure or not”

(Ulivieri 2004, p. 4).

This implies that increasing the security of the on-line environment through technical advances, may not influence on-line shoppers as they may have little understanding of how such technologies work and fail to recognise any benefit. Without a sufficient understanding on the part of the majority of users, the advances in security have had little impact on trust. Ulivieri (2004) suggests that what users can relate to is information provided on the website, designed to engender trust within the consumer. This is the concept of “**Soft**” trust.

“**Soft**” trust deals with issues related to user control, comfort and caring (Singh & Slegers 1998) and is similar to what is termed as “**Party**” trust by Ulivieri (2004) and also Egger (2003) in his thesis “From Interactions to Transactions: Designing the Trust Experience for Business-to-Consumer Electronic Commerce”. It is assumed that the issues of “**Hard**” trust (Control trust) are similar for all parties concerned across the web. The focus of the study undertaken in this thesis is concerned primarily with the aspects of “Soft” or “Party” trust available to the web designer.

2.7 Models of Trust

Ulivieri (2004) and Egger (2003) both cite Ganzaroli, Tan & Thoen (1999) with regards to their “*Generic*” model for trust in electronic transactions which is simply stated as:

$$\text{Party Trust} + \text{Control Trust} = \text{Transaction Trust}$$

“*Transaction*” trust is the level of trust which a user must reach in order to confidently complete a transaction i.e.

“The willingness of a party to be vulnerable to the actions of another party based on the expectation that the other party will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party”

(Ganzaroli, Tan & Thoen 1999, p. 1).

This means that if a user has reached a sufficient level of trust in both the technology and in the vendor then that user is more likely to risk a transaction or purchase. This depends upon the user having a sufficient understanding of security technologies.

Ulivieri (2004) argues that the model presented by Ganzaroli, Tan & Thoen (1999) has certain limitations. He suggests that it is rare to find users who have a sufficient understanding of technology to completely trust in it and that it is not reasonable to assume that it is possible to educate them to the point where they sufficiently understand how security technologies work. He also questions if it is necessary to fully understand these security technologies in order to use them confidently. He suggests that it is only necessary to understand what these security technologies are for in a similar way in which the driver of a car needs only know how to accelerate, turn and stop but does not need to know the full particulars of how the car functions in order to drive it (Ulivieri 2004).

2.7.1 Web Trust Model (McKnight, Choudhury & Kacmar 2002)

The Web Trust Model presented by McKnight, Choudhury & Kacmar (2002) is significantly more elaborate than the generic model presented by Ganzaroli, Tan & Thoen (1999). McKnight, Choudhury & Kacmar (2002) suggests that a major instrument for reinforcing consumer trust lies in the design of the website itself. Their “**Web Trust Model**” (McKnight, Choudhury & Kacmar 2002) is illustrated below in Figure 2.1.

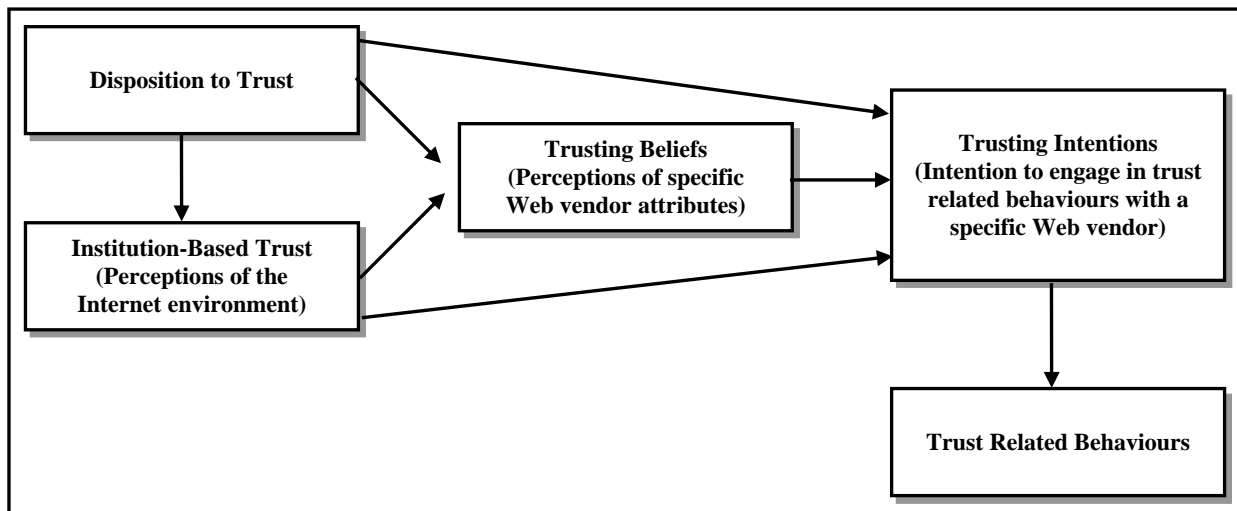


Figure 2.1 - Web Trust Model – Overview
(McKnight, Choudhury & Kacmar 2002)

The study by McKnight, Choudhury & Kacmar (2002) focuses on “**Initial**” trust which is considered important in the process of a web vendor establishing sufficient trust in a new customer to encourage a sale. Their model includes an *Institution-Based* trust component which represents the user’s perceptions of the Internet environment i.e. “**Hard**” trust.

The Web Trust Model by McKnight, Choudhury & Kacmar (2002) categorizes users’ **Trusting Beliefs** into three groups.

Competence - ability of the vendor to provide what the user needs.

Benevolence – vendor is caring and considers the users interests.

Integrity – vendor is honest and keeps promises.

These beliefs are seen to be established as the result of a user exploring the vendor’s website and conveyed to the user via the interface. This is similar in context to the *Interface Properties* dimension in the next model to be examined Egger’s (2003) **Model of Trust in E-Commerce** (MoTEC). The **Trusting Intentions** component is also similar to the **Relationship Management** dimension in Egger’s MoTEC.

2.7.2 MoTEC (Egger 2003)

Initially presented by Egger in 1998 **MoTEC** underwent refinement until it was finally presented as part of his thesis in 2003 (Egger 2001, 2003). Modifications to the original model reflect changing patterns in the nature of related disciplines including website design and trust building strategies related to e-commerce. Four dimensions make up the final model, each consisting of separate components and sub-components.

The model is structured around the various stages a user goes through whilst initially investigating an e-vendors website. The four dimensions and their components are as follows and displayed in Figure 2.2:

1. Pre-Interactional Filters

- User Psychology
- Pre-purchase Knowledge

2. Interface Properties

- Branding
- Usability

3. Informational Content

- Competence (Company, Products & Services)
- Risk (Security & Privacy)

4. Relationship Management

- Pre-purchase and Post-purchase interactions
- Trust over time

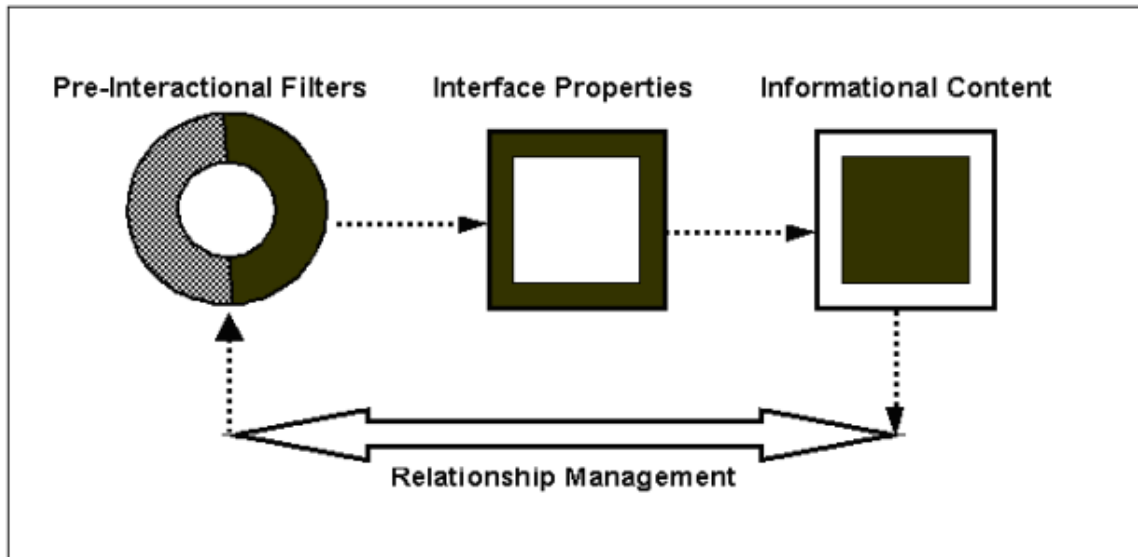


Figure 1.2 - The Four Dimensions of MoTEC
(Egger 2003)

Egger's model takes into account the dynamic aspects of trust and suggests that trust is developed over a period of time and that this is an iterative process. The model suggests that there are **Pre-Interactional Filters** where the user has a pre-disposition towards trust even before visiting a website for the first time based on pre-knowledge and their own psychology i.e. propensity towards distrust. This contributes to an initial trust value which is added to by the first impressions made by the branding and usability perceived by the user in the **Interface Properties**. Further exploration of the websites' **Informational Content** leads the user to re-assess that trust value once more when evaluating the vendor's competence and the perceived level of risk in making a purchase. The fourth dimension **Relationship Management** refers to how the vendor's website handles enquiries and/or orders over time. For example help provided to the user either before or after a purchase (Egger 2003) which further contributes to the users overall trust in the website. In turn this established trust value influences the **Pre-Interactional Filters** when accessing other e-commerce websites.

Examination of **Web Trust Model** and **MoTEC** reveals that there are overlaps between the various components in each and that they are strikingly similar in nature. McKnight, Choudhury & Kacmar (2002) conclude that users make judgements which are highly influenced by their perceptions of the website design. This further strengthens the concept that website design is instrumental in engendering consumer trust in e-commerce sites.

Eggers' model draws upon earlier concepts outlined in the “**Human-Computer Interaction**” (HCI) model presented by Long and Dowell (1989) as well as the “**Technology Acceptance Model**” (TAM) proposed by Davis (1989). The Web Trust Model presented by McKnight, Choudhury & Kacmar (2002) also builds on the principles of TAM and attempts to integrate the earlier framework of the “**Theory of Reasoned Action**” (TRA) presented by Fishbein and Ajzen (1975). These models although somewhat superseded are mentioned here for the sake of their historical relevance as the use of computers has now become ubiquitous in many societies throughout the world. Yet both HCI and TAM still have relevance to consumer trust in e-commerce regarding a users' evaluation of the usefulness of the e-commerce system and accompanying website.

2.8 A Real World Example

Just as when dealing with real world, physical shop based commerce, different vendors often display an intuitive talent for winning the trust and loyalty of their customers. Rather than just relying on intuition the findings of research conducted by the Marketing and Economics disciplines have become the foundations of many courses of education which can be studied. Regardless of how a vendor acquires the talent or skill of engendering trust in consumers, it can lead to an advantage over their competitors and can also lead to considerable success in their business endeavours.

Earlier research conducted by Singh & Slegers (1998) includes a case study of one such success story. The study details an on-line store which retails boots and other apparel manufactured by the famous Australian icon R.M.Williams. Because the website was established in 1995 as an adjunct to a physical outlet in Melbourne and that the majority of sales on-line have been to international customers it represents an important case study where trust has been established in an on-line environment early in the history of e-commerce. This is especially noteworthy as the uptake of e-commerce in Australia can be considered to have been relatively slow by comparison to other OECD countries. Singh & Slegers (1998) in their study portray a classic example where the vendor clearly had an intuitive understanding of what is required to win the trust of customers in his business operations. This vendor has also had the insight and knowledge to integrate trust building factors into the website.

The construction and design of a vendor's website is in effect an attempt to provide a virtual on-line shop by means of the interface. It is the interface which provides information to the user. When shopping in a physical environment the customer is face to face with a shop attendant and can see and touch the goods as well as communicate directly with a sales person. A shopper can reach a level of trust in such a situation quite readily. Shoppers also experience the care and assistance from the attendant. It is in the design of the interface where the "Soft" trust issues generally associated with marketing need to be conveyed to the user in the virtual environment. The above example outlined by Singh & Slegers (1998) again reinforces the concept that website design can influence consumer trust in e-commerce.

2.9 Trust Building Components in Websites

Current trends in website design which attempt to build consumer trust include components such as:

- **Privacy statements** (Lin & Wu 2008; Pan & Zinkhan 2006)
- **Contact Information** (OECD 2003)
- **Feedback Facilities** (Pavlou & Ba 2002)
- **Web Seal Certificates** (Hu & Wu 2008)
- **User centric design and testing** (Egger 2003)
- **Secure Sockets Layer** (Flavián & Guinalú 2006)
- **Branding** (Egger 2003)
- **Money Back Guarantees** (Lee, Ang & Dubelaar 2004)
- **Order Tracking** (Egger 2003)
- **Payment Tracking** (Singh & Slegers 1998)
- **Customer Care** (Egger 2003)
- **Delivery Information** (Egger 2003)
- **Over Help** (Ulivieri 2004)

The concept of "Over-Help" as presented by Ulivieri (2004) does not refer to an overload of technical jargon, which is often the case in help systems, but is related to a developer anticipating the needs of users in advance and guiding them through the entire process of interacting with the website. This is accomplished by giving users useful and relevant information at each step of the transaction process. This concept encapsulates almost all of the components in the above list. Providing the threshold of intrusion is not breached, the user

perceives this as strong attention for their needs creating a feeling of reassurance. This reassurance comes from a feeling that the situation is under control and leads towards building trust in the mind of the consumer.

2.10 Summary

In this chapter the review of the literature relating to the issues of trust in B2C e-commerce indicates that there is a gap between the vendors, web developers, marketing disciplines and an understanding of the infrastructure of the Internet. Unlike B2B e-commerce where relationships between parties are established and conducted on an ongoing process of trading, B2C e-commerce lacks the element of trust established between trading partners.

The establishment of consumer trust in B2C e-commerce is more related to sociological principles than it is to technical solutions (Ulivieri 2004). Establishing consumer trust in B2C e-commerce depends upon approaching the problem on a case by case basis. The website itself is often the only means by which a consumer can evaluate the trustworthiness of an on-line vendor. Although there are many other factors involved, this study focuses on *which* website design *components* have an effect on a consumer's trust. Design in this context refers more to the overall design and functionality of the site, this to a lesser extent also includes the visual design of the site.

Vendors seek to sell their products and services and depend on web developers to build and maintain their websites. The security measures undertaken to make the Internet a safer place to conduct business has not managed to establish consumer trust. Marketing principles are the weakness in the equation. This suggests that developers need to focus their efforts more upon the “**Soft**” trust issues related to marketing. A lack of expertise in this area is perhaps the reason why developers have overlooked these aspects of website design. Both vendors and consumers appear to lack an understanding of the technologies that underpin the web. Similarly the marketing evident on many websites does not seem to reflect the technologies or an understanding of these technologies that would promote consumer trust. There seems to be a gap between the key business processes related to the various business functions engendered in an 'on-line' shop. It is unclear whether the solution lies with the developers developing a better understanding of marketing and business processes or marketers and business managers developing a better understanding of web technologies. A partial solution

could be the developers expanding their knowledge of fundamental marketing principles and finding practical ways of incorporating these principles into the design of the websites they build and maintain.

The review of literature in the e-commerce discipline identified the work of Egger (2003) as being a key study on the subject. His “**Model of Trust in E-Commerce**” having undergone refinement for over a period of six years since it was first presented, builds on the key models presented beforehand. It is easy to understand in its final form and a valuable instrument in the analysis of trust in e-commerce. The work of Ulivieri (2004) is also insightful in how the problem can be approached and his explanations of how the concepts of trust and security have been confused are very informative.

Chapter 3 which follows discusses the research methodology and the processes followed to collect data relevant to the following research questions:

- 1. Can website design components have an effect on consumer trust?**
- 2. If so which trust building website components are the most influential?**
- 3. Are there differences relating to on-line trust and website components across different user profiles?**

Chapter 3: Methodology

3.1 Introduction

The literature review in Chapter 2 identified three theoretical models of “Trust” in e-commerce and outlined current issues relating to website design with respect to consumer trust in on-line shopping. In the conclusion of Chapter 2, three questions were raised which are relevant to the focus of this study. This chapter now explains the research methodology, including methods of data collection and the analysis techniques which were adopted to address these issues. The questions raised in Chapter 2 are again expressed here in the form of hypotheses.

H1: “Website components can have a positive effect on a consumer’s trust in e-commerce”

H2: “There are differences in the importance of various website design components towards gaining consumer trust between differing user profiles.”

The following website components were used to test these hypotheses.

- | | |
|---------------------------|--------------------------------|
| • Privacy statements | • Order tracking facilities |
| • Contact information | • Payment tracking facilities |
| • Buyer testimonials | • After sales support |
| • Guest books | • Delivery costs |
| • User forums | • Multiple payment methods |
| • E-Trust certificates | • Maps locating the business |
| • Ease of navigability | • Images of staff and premises |
| • Absence of errors | • Assistance via Skype |
| • Good visual design | • Assistance via Telephone |
| • Strong product branding | • Assistance via E-mail |
| • Money back guarantees | |

The following were used to set the parameters of differing user profiles for the second hypothesis.

- | | |
|-------------|-------------------------------------|
| • Gender | • Computer skills |
| • Education | • Experience in web browsing |
| • Age | • Understanding of web technologies |

3.2 Quantitative Approach

To test the hypotheses a quantitative approach was adopted and an on-line survey in the form of a questionnaire was considered the most appropriate method to use given the nature of the study. The benefits to this approach are outlined as follows. Firstly data collected in a quantitative study is in numerical format suitable for statistical analysis. Secondly because an on-line questionnaire can only be reached via the Internet and that the target population consists solely of Internet users who are potential/practicing on-line shoppers, then this method can filter out those who do not have Internet access and those who have little interest in on-line shopping. Furthermore the on-line survey process can also ensure that all questions are completed before submission, the cost is minimal and the results can be collated readily for entry into a statistics application for analysis. Finally an on-line survey can reach far beyond local geographic boundaries quickly and easily.

Several prior studies into on-line trust have often involved having respondents visit a number of predetermined websites, either real or fictitious, on an experimental basis and then to have those respondents complete a questionnaire (Egger 2003; McKnight, Choudhury & Kacmar 2002). This has usually been conducted in an effort to evaluate which of the websites chosen were perceived as being the most trustworthy.

The above mentioned approach was considered as simply a means of having respondents evaluate the perceived trustworthiness of each website that was selected for inclusion in those experiments.

The focus of interest in this study however is specifically determining how a variety of different website components, commonly present on different e-commerce sites affect users with differing profiles. On this basis the survey questionnaire asks respondents to recall and reflect upon their previous experience with on-line shopping/browsing.

3.3 Sampling Frame

The sampling frame is a statistical term which is described as the accessible population from which the sample is drawn (Herek 2009; statistics.com 2009; Trochim 2006; Zikmund 2003). Because the research objectives were to identify the effects of website design components on consumer trust in on-line shopping, the sampling frame includes *only* those people with a

sufficient on-line presence to be considered as a potential/practising on-line shopper. To this extent some degree of on-line experience as well as an interest in on-line shopping is required on the part of respondents. Those with an active email address and the ability to complete an email login process coupled with an interest in on-line shopping are considered as suitable for the study.

A website was established specifically to host the survey. The survey was then designed in such a way that each respondent was required to register and login to the survey site via an email link before they were able to take part. The login process provided another benefit which limited each respondent to be included in the study once only.

To initiate a sample for the study, approximately 15,000 students and 845 staff of Southern Cross University (SCU 2008) were bulk emailed an invitation to take part along with a link to the site hosting the survey. A facility was also provided on the site allowing respondents to invite other people whom they thought may also be interested. This facility titled “**Tell a Friend**” (section 3.9) was intended to broaden the sample beyond the students and staff of Southern Cross University (SCU). This method is termed as Snowball Sampling (Trochim 2006) and is categorised as a non probabilistic sampling technique which is discussed further in section 3.9.

The sampling frame is often termed as the working population (Zikmund 2003) and in this study includes SCU staff, students and friends. The primary sampling unit is SCU students, secondary sampling unit is SCU staff and tertiary sampling unit is friends referred on. The sampling frame therefore covers a reasonably diverse range of disciplines, age groups, education and on-line experience.

3.4 Sample Size

The minimum sample size required which would allow the study to be generalised for a larger population was calculated using Cochran’s formulae (Bartlett, Kotrlik & Higgins 2001) for sample sizes.

Cochran’s equation for calculating a minimum sample size involving continuous data items is stated as follows:

$$N = \frac{(t)^2 * (s)^2}{(d)^2} = \frac{1.96^2 * 1.167^2}{7 * 0.03^2} = 118$$

Where:

t = the value for a selected alpha level of 0.025 in each tail i.e. 1.96, which is the approximate value of the 97.5 percentile point of the normal distribution used in probability and statistics. 95% of the area under a normal curve lies within roughly 1.96 standard deviations of the mean, and due to the Central Limit Theorem (CLT), this number is therefore used in the construction of approximate 95% confidence intervals.

s = estimate of standard deviations in the population.

(Estimate of variance deviation for 7 point scale calculated by using 7 [inclusive range of scale] divided by 6 [number of standard deviations that include almost all (approximately 98%) of the possible values in the range]).

$$s = \frac{7 \text{ (number of points on the scale)}}{6 \text{ (number of standard deviations)}} = 1.167$$

d = acceptable margin of error for mean being estimated = .21.

(Number of points on primary scale * acceptable margin of error; points on primary scale = 7; acceptable margin of error = .03 [error the researcher is willing to except]).

Not all of the data collected from the survey could be classed as continuous data and in particular the gender variable is nominal data. For this Cochran's equation (Bartlett, Kotrlik & Higgins 2001) for categorical data was used and is stated as follows:

$$N = \frac{(t)^2 * (p)(q)}{(d)^2} = \frac{1.96^2 * 0.5 * 0.5}{0.05^2} = 384$$

Where:

(p)(q) = estimate of variance.

(Maximum possible proportion (0.5) * 1 - maximum possible proportion (0.5))

d = acceptable margin of error the researcher is willing to accept = .05.

The survey ran for exactly 1 week and produced 272 valid responses indicating that for the continuous data analysis we have a sample size sufficient to satisfy a confidence level of 95% with a margin of error of 3%. This is conventional in business research involving continuous data (Bartlett, Kotrlik & Higgins 2001). Because the sample size is 272 it can be assumed sufficient to satisfy a confidence level of 95% with a margin of error of 2% which would require 267 as a minimum sample size according to Cochran's equation for sample size concerning continuous data.

For the gender variable, being nominal data the sample size is too small to satisfy the conventional practices of a confidence level of 95% with a margin of error of 5% for categorical data (Bartlett, Kotrlik & Higgins 2001). However the survey produced a sample size which satisfies a confidence level of 90% with a margin of error of 5%. When calculated at a 90% level of confidence the minimum required sample size according to Cochran's equation for sample size concerning categorical data is actually 272, the exact number of valid responses.

The ratio of observations to explanatory variables is critical to many data analysis techniques and should not fall below 5:1 (Abrams 2007; Bartlett, Kotrlik & Higgins 2001). With a total of 272 cases and a maximum possible total of 21 explanatory variables the ratio in this study is $272/21$, approx. 13:1 well within conventional practices. The sample size returned by the survey thus allows for the findings of the study to be generalised for a larger population.

3.5 Self-selection Sampling

As mentioned in section 3.3 the sample population was initiated from a bulk emailing to all students and staff of SCU. Those who responded and completed the survey therefore selected themselves and any friends who were also invited by those respondents also selected themselves. A copy of the initial invitation email can be found in Appendix A (page 2). The invitation email contained comprehensive information about the survey with details regarding ethics approval, how to contact the researcher and how to contact the Ethics Complaints Officer. Privacy and ethics issues regarding the survey were also supplied as well as where to find the Privacy Statement on the website (Appendix A page 4). The invitation clearly explained that there was no obligation to take part, those respondents taking part could quit at

any time during the process and that completion of the survey would be considered as implied consent. In this way respondents were free to make a choice whether to participate or not.

Self selection sampling is a non probabilistic or purposive sampling technique (Trochim 2006) and was chosen to ensure that respondents taking part in the survey were representative of the target population. This approach was taken because it is unlikely for website components to have any affect upon respondents' trust that do not have an Internet connection or those who have little interest in on-line shopping due to reasons such as no access to credit/debit card or other payment facilities.

3.6 Survey Control Measures

The invitation email contained a link to the website hosting the survey. Upon arrival the user was presented with a Title Page introducing the survey (Appendix A page 5) and an enter button to start the process. The user was then asked to register their participation by submitting their name and email address in the Registration Form (Appendix A page 6). In an effort to protect the privacy of respondents entering their name was neither mandatory nor was it recorded at any stage and was used solely for the purpose of being polite in addressing the respondent in the emails sent to them.

Upon submission of the registration form an automated email was then sent to them with a second copy of the invitation, which was formatted in HTML in order to help distinguish it from the initial email (Appendix A page 7). This second email contained a link with the respondent's email address and an encrypted checksum attached to it which would bring them back to the site. Following the link in this email allowed participants access to the survey. Additionally, safeguards using cookie and session variables and capture of a participants IP address prevented participants from submitting results to the survey more than once in either the session or in multiple sessions.

Client side JavaScript validation scripting was also employed for the purpose of validating completion of the survey. This prevented the user from making an incomplete submission. Detection of whether the user had cookies enabled was also tested and the status recorded in the data submitted. If the user had JavaScript and/or cookies disabled no attempt was made to block the user from making a submission, the conditions were simply recorded in the data file for later analysis and filtering.

The survey site was thoroughly tested using several different browsers during the survey design phase and in the pilot study which is discussed further in section 3.9 of this chapter. The browsers employed in the testing process included Internet Explorer versions 7 & 8, Mozilla FireFox version 3.5, Google Chrome version 3.0, and Safari version 4.0. These browsers were the latest releases at the time for Windows, Macintosh and Linux operating systems.

During the survey an email was received that stated that the survey registration/login process could be interpreted as a scam to collect email addresses and posed the question:

“I wonder how many others were turned away by this.”.

This was considered as a valid question and an examination of the server records in comparison to the actual results demonstrated that there could have been no more than 10 users who chose not to complete the registration/login process. This estimate may also include those respondents who may have chosen to quit during the survey process.

The survey data was recorded in two steps. Firstly parts 1 and 2 of the survey (section 3.8), were presented as a single web page and the results were recorded before the respondent proceeded to Part 3 of the survey which was presented as a separate web page. The reason for this approach was to reduce the size of the questionnaire presented on the screen to respondents. Additionally Parts 1 & 2 represented the focus of the survey measuring respondents' *behaviour* and Part 3 was included as a secondary measure in order to evaluate their *opinion* concerning which website components were considered most important in gaining their trust. Finally if a respondent chose to quit during the survey and if they had completed Parts 1 & 2 then their participation up to that point would still constitute a valid submission.

3.7 Survey Response

The survey was released on Tuesday, September 8, 2009 and data collection was terminated on Tuesday, September 15, 2009. This period produced a total of 272 valid responses. This was considered as an unexpected and excellent response with approximately half being submitted on the first day of the release and most of the other half arriving the following day. The reason for such a strong response was attributed partly to the tagline contained in the subject line of the initial email invitation which read,

“Are you concerned about purchasing on-line? Do our survey (Honours Research)”

and partly due to the topical nature of the study, considering the recent growth of the use of debit-credit cards in relation to e-commerce (Digital 2009; Zinman 2004). The response rate is discussed further in Chapter 4.

3.8 Questionnaire Design

The questionnaire was initially developed in Extensible Hypertext Markup Language (XHTML) which was then embedded into PHP files which allowed the implementation of the Survey Control Measures mentioned in section 3.6. PHP is a powerful server side web scripting language.

The use of Likert scales and similar scales depicting two extremes such as those used in the survey from “Always to Never” is controversial among many statisticians, particularly regarding whether such scales can be treated as interval data. However these scales have been found to communicate interval properties to respondents and are often treated as interval scales by many marketing researchers (Allen & Seaman 2007).

The number of points on a Likert scale is also a subject of topical debate. Many studies have found that the absence of a central point can be found to adversely affect the mean and a scale range of 5 points may also reduce extreme responses (Allen & Seaman 2007). Dawes (2008) argues that an 11 point scale is preferable however he reports that mixed results have been found across different studies. Allen & Seaman (2007) suggest that a common scale used often is a seven point scale, which has been found to reach the upper limits of a scale’s reliability. On this basis seven point scales were used in the survey where appropriate.

The following illustration is a partial screen shot of the web page containing the survey questionnaire.

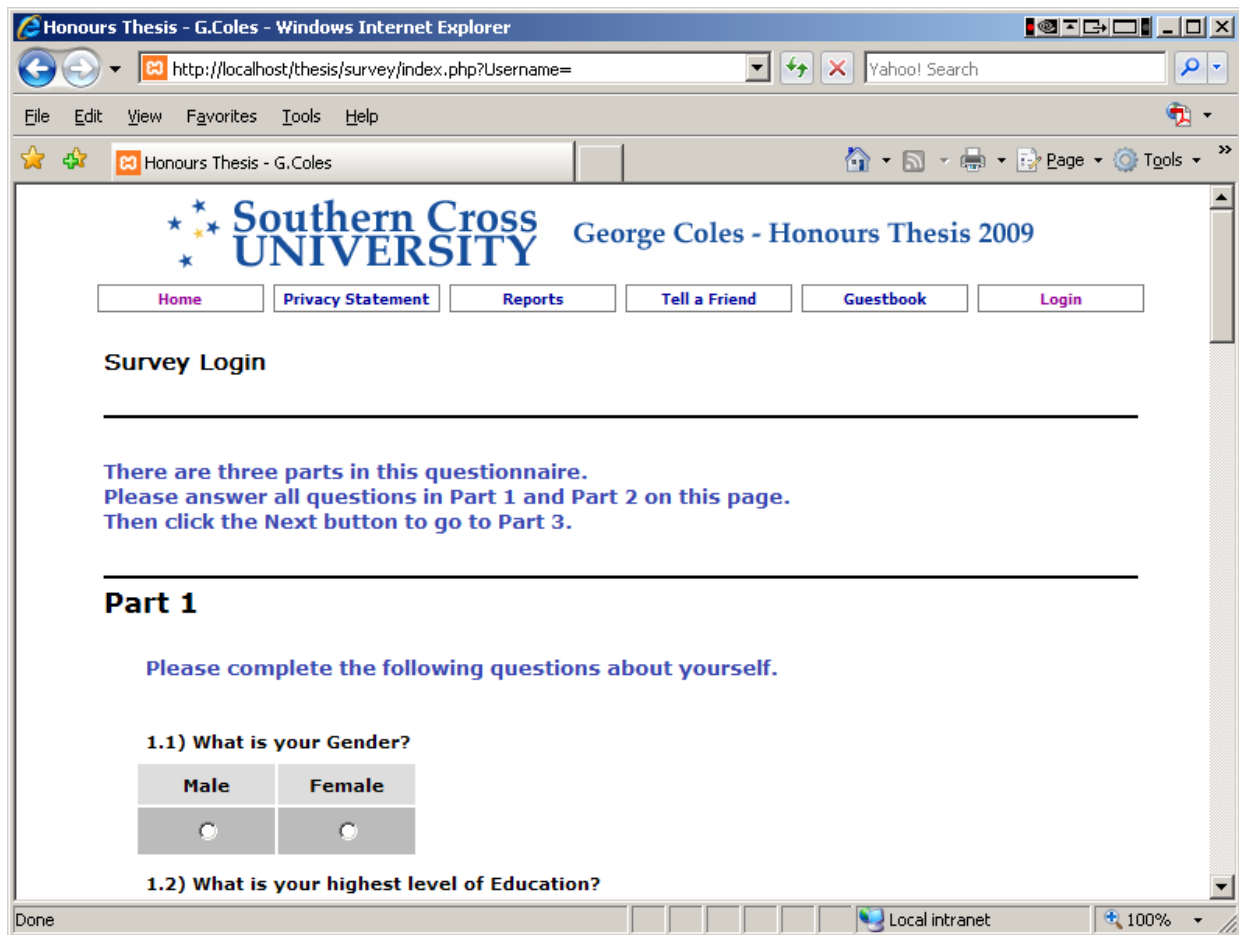


Figure 3.1 - Screen shot of Survey Questionnaire.

A complete view of the questionnaire Parts 1, 2 and 3 can be found in Appendix A page 8.

The final questionnaire consisted of 3 parts. Each of these parts is discussed in detail following:

Part 1 – Demographic, Experience and Trust measures

The first group of questions in Part 1 are demographic in nature and were included to allow the division of the survey participants into differing profiles. The questions were:

- **What is your Gender?**
- **What is your highest level of Education?** This question gave the participant a choice of High School, TAFE, Undergraduate degree or Post graduate degree. In retrospect it is believed that this question may have been ambiguous to users. It is possible that participants understood this question to be asking to mean the highest level studied rather than what was the highest level completed.
- **What is your Age Group?** Respondents were given a choice of 18-25 yrs, 26-35 yrs, 36-45 yrs, 46-55 yrs, 56-65 yrs, 65-75 yrs and 75+ yrs.

The second group of questions in Part 1 of the survey were questions that relate to experience.

- **What is your level of Computer Skills?** Respondents were given a choice of Novice, Beginner, Intermediate, Advanced and Expert.
- **What is your level of understanding of Web-Technologies?** Respondents were given a choice of Novice, Beginner, Intermediate, Advanced and Expert.
- **How many years of experience do you have in Web Browsing?** Respondents were given a choice of 1-2 yrs, 2-3 yrs, 4-5 yrs, 6-7 yrs, 8-9 yrs, 10-11 yrs and 12+ yrs.

A third group of questions in Part 1 of the survey were questions that directly relate to trust. Each question presented the user with a 7-point Likert scale from “Strongly Disagree to Strongly Agree”. Each question is listed following:

- **I generally place trust in sales assistants when shopping?** This question was included in the survey as a base line indicator to a general measure of “Trust” whilst in an offline environment.
- **I generally place trust in the websites I visit?** This was included in the survey as a generalised measure of “Trust” whilst in an on-line environment.
- **I don’t have concerns in giving my credit card details to websites to make a purchase?** This question is the main focus of the study and directly relates to Transaction Trust, the level of trust which a user must reach in order to confidently complete a transaction (Ganzaroli, Tan & Thoen 1999).
- **I generally place trust in the websites recommended by Word of Mouth?** Egger’s (2003) Model of Trust in E-Commerce (MoTEC) suggests that trust is influenced by Pre-Interactional filters. This question was included for the purpose of examining a possible effect due to preconditioning as discussed in section 3.5.1.

Part 2 – Website components and features measures

Part 2 of the survey asks participants how often they check for the 21 e-commerce website components and features identified as important by previous research (section 2.9 Trust Building Components in Websites). A full list of the components included is listed in section 3.1 Introduction. Respondents could indicate their response on a 7 point Likert scale from “Always to Never”. Submission of Parts 1 & 2 was required before a respondent could proceed to Part 3 of the survey.

A complete view of the questionnaire Parts 1, 2 and 3 can be found in Appendix A page 8.

Part 3 – Order of importance to gaining respondents trust

In Part 2 of the survey participants were asked how often they looked for the components identified in the literature as engendering trust. This was to gauge the behaviour of the participants when they are shopping on-line. In Part 3 of the survey respondents were asked to order the 21 components according to how important each is towards gaining their trust. This was achieved by creating a number of buttons in a list on the left hand side of the page. Each button was labelled with the title of the component which the respondent could click on. An extra button was also provided allowing the respondent to include any other items that they thought should be included but had not been listed.

Because it was unknown which items would be added to the list, extra buttons were created dynamically and the respondent was prompted to enter the name of the component they wished to add to the list. The participant could then add the component to the list in the position they desired. Before respondents could submit Part 3 they had to select at least 1 item to be placed in the list. The results of part 3 are reported in Chapter 4: Data Analysis.

3.9 Tell a Friend

After Parts 1-3 of the survey were completed and submitted by the respondent they were presented with the “Tell a Friend” facility. This is a facility provided to allow respondents to inform other people they know who might also be interested in taking part in the survey (Appendix A page 13). As previously noted this was designed to broaden the sample to include respondents from outside of Southern Cross University (SCU) staff and students.

Recipients of the invitation received an email identical to the XHTML version of the invitation allowing them to login directly from the link. There was no tracking of the use of this facility although it would have been useful to know how many respondents were invited through this facility and also how many responded.

Included on this web page was an additional facility that allowed respondents to indicate if they wanted to be notified of the findings of the survey when they became available. Of the 272 valid submissions a total of 150 respondents indicated that they were interested in receiving the results of the survey.

3.10 Pilot Study

The survey instrument and website containing the survey was pilot tested prior to the main data collection. Staff members from the School of Commerce and Management of SCU were emailed and asked to participate in the pilot study. In order to test the “Tell a Friend” facility which enabled respondents to invite friends to also take part, a request was made to the principal of a web development firm to take part in the pilot. He was also asked to invite clients of his firm who were e-commerce business operators.

Also included in the group of participants for the pilot study were academic experts in survey design and statistics, e-commerce and Information Technology. A total of 24 valid submissions out of 30 resulted from the pilot. The feed back from the pilot study was primarily technical in nature which allowed the researcher to hone slight technical problems related primarily to different browser configurations which various users may have set.

The positive feedback confirmed that the survey required only minor alterations to the final question in Part 3 and a minor technical adjustment to the code concerning a pop up blocker. The pilot study submissions were therefore included in the final data.

3.11 Ethics Approval for the Survey

Ethics approval was obtained from the SCU Human Research Ethics Committee (HREC) to conduct the survey and collect data for analysis. Upon completion of the data gathering stage the SCU Human Research Ethics Committee were notified that the survey had been completed. The survey website was then modified to indicate to visitors that the survey had terminated.

3.12 Analysis Technique

Multiple Linear Regression analysis is primarily used to predict a single *continuous* response variable from a number of explanatory variables (Abrams 2007; Chen et al. 2003; StatSoft 2007). Because the research in this study involves analysing the effects of multiple explanatory variables, i.e. website components, upon a single response variable of “Trust”, Multiple Linear Regression analysis was chosen as the principle method used to analyse the data collected from the survey.

Many statistical tests rely upon several assumptions about variables, which when not met, may incur Type I and Type II errors and place doubt upon the results. Easton & McColl (2004) explain that a Type I error occurs when the null hypothesis is rejected when it is actually true and a Type II error occurs when the null hypothesis, is *not* rejected when it is actually false. A Type I error is considered to have more serious consequences. Lane (2006) states that a Type II error is less severe since no conclusion is drawn when the null hypothesis is not rejected. Similarly over- or under-estimation of significance and/or the magnitude of the effects may also occur (Osborne & Waters 2002; Rubinfeld 2000).

Normality, linearity and homoscedasticity are important assumptions which should be tested before the results of a Multiple Linear Regression analysis are considered as reliable (Abrams 2007; Osborne & Waters 2002). These assumptions of regression are discussed further in Chapter 4 Data Analysis.

When dealing with nominal and ordinal data non-parametric tests such as the Mann-Whitney and Kruskal-Wallis tests can provide reliable results. Although somewhat more conservative in nature these tests utilise the *ranks* as opposed to the *means* of the response data (Allen & Seaman 2007). Because the Gender variable in the survey contains nominal data consisting of two categories and that the distribution of responses were twice the number of females to males, the Mann-Whitney test was used to analyse differences in trust between males and females. As previously discussed there may have been some ambiguity in the interpretation of the question in the survey regarding respondents' level of education. Some respondents may have considered the question "*What is your highest level of education?*" to mean the highest level studied rather than the highest level completed. For example a third year undergraduate who has recorded High School as the highest level in education completed can be considered to have a higher level of education than someone who had reported TAFE as the highest level of education attempted. On this basis the Kruskal-Wallis test was also conducted to analyse differences in trust between respondents related to education.

3.13 Summary

The research methodology outlined in this chapter was chosen to test the theoretical models outlined in Chapter 2 and the hypotheses defined at the beginning of this chapter. The research methods were described and justified for the nature of the study being conducted.

The survey was designed, tested and deployed using the above methodology and the resulting data was then collated for entry into a statistical analysis software application. In the following chapter the results and analysis of the data produced by the methodologies outlined in this chapter are presented.

Chapter 4: Data Analysis

4.1 Introduction

Chapter 3 outlined the methodology chosen for this research and described the development of the on-line survey as the data collection instrument for the study. This chapter discusses the analysis of the data. The analysis proceeded in 4 stages starting with a description of the response rate and its representativeness for extrapolation to the broader population, data filtering, descriptive analysis and finally, model testing using Multiple Linear Regression analysis. PASW “Predictive Analytics SoftWare” version 17.0 was the software used for the data analysis.

4.2 Response Rate

All students and staff of Southern Cross University were invited to take part in the survey which meant that a total of approximately 15,845 people received the invitation to participate in the study.

$$\text{Response Rate} = \frac{\text{Number of Valid Surveys Completed}}{\text{Number of Participants Contacted – Out of Scope}}$$

$$\text{Response Rate} = \frac{272}{15,845 - 0}$$

$$\text{Response Rate} = 0.017$$

$$\text{Response Rate} = 1.7 \%$$

(DAA 2009)

As mentioned earlier in section 3.7 self selection sampling coupled with snowball sampling was used to gather responses to the survey. The response rate of 1.7% is small in comparison to the total number of respondents contacted however because purposive, non-probabilistic sampling techniques were used and a total of 272 valid responses were received the low response rate does not affect the validity of the results (Saunders, Lewis & Thornhill 2003). Given the time limitations of the study it was felt that although the response rate was low the number of responses was more than adequate for the intended analysis and to enable investigation of the research questions.

4.3 Data Filtering

The Survey Control Measures outlined in section 3.6 were applied in the survey instrument. Any submissions with missing and suspect data items were filtered out of the dataset. The remaining responses to parts 1, 2 and 3 of the survey were combined into a final dataset with a total of 272 valid cases.

4.4 Descriptive Statistics

The following subsections present a descriptive analysis for the dataset. The associated frequency tables scatter plots and normality plots for each of the variables can be found in Appendix B.

4.4.1 Trust Measures

There were four questions included in the survey to measure levels of trust. Each of these is discussed separately in this section.

Trust in Shop Assistants represents a measure of “Trust” when purchasing offline and was included for the purpose of comparison between on-line “Trust” measures and trust in conventional shopping methods. Because Trust in Shop Assistants cannot be influenced by website components it was excluded from the regression analysis detailed later in this chapter. The following figure displays the frequency distribution of responses to this survey question. More respondents ‘distrusted’ shop assistants (115) than ‘trusted’ shop assistants (90) with 67 responses on the scale midpoint.

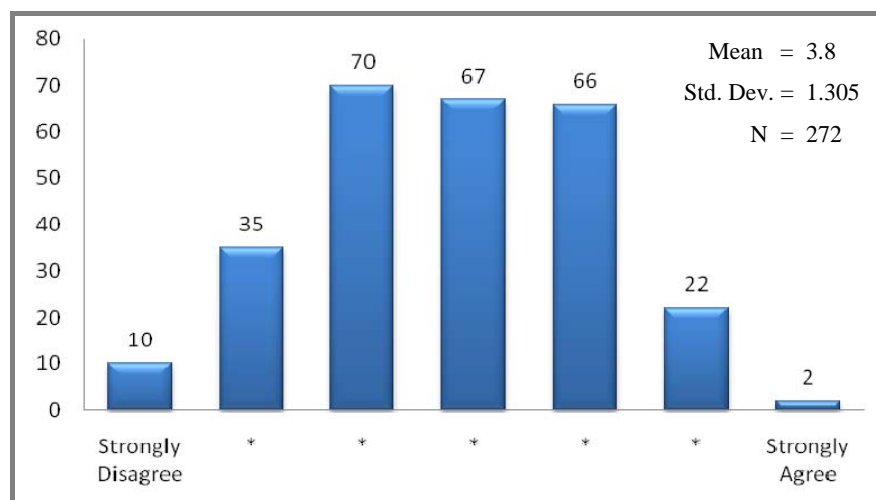


Figure 4.1 - Frequency Distribution of Trust in Shop Assistants

Trust in Websites Recommended by Word of Mouth represents a measure of “Trust” when a website is recommended by others. This measure was included for the purpose of examining a possible effect due to preconditioning as suggested by the “Pre-Interactional Filters” posed by Eggers MoTEC model (2003) as discussed in Chapter 2. The following figure displays the frequency distribution of responses to the survey item measuring Trust in Websites Recommended by Word of Mouth. Slightly more people (108) trusted a website recommended by someone else than distrusted it (99) with 65 people providing a neutral response.

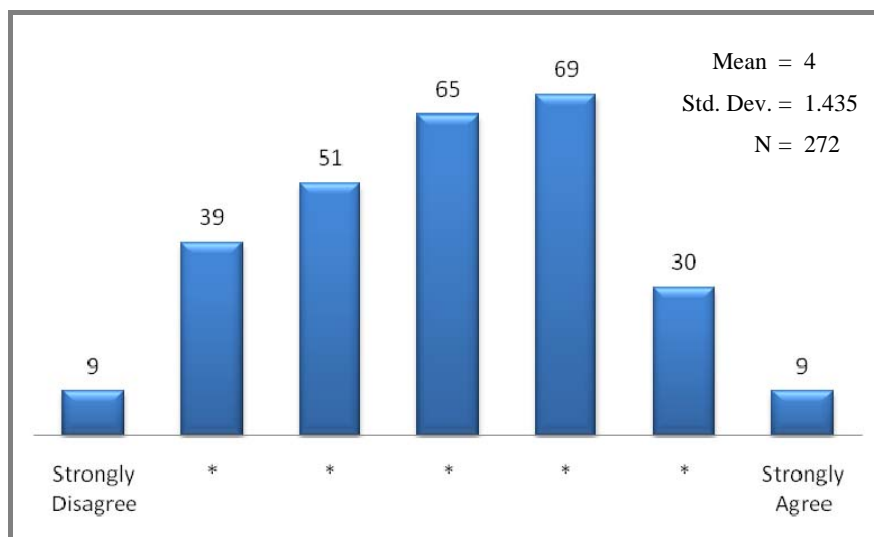


Figure 4.2 - Frequency Distribution of Trust in Websites by Word of Mouth

The question measuring *Trust in Websites* was included in the survey as a general measure of trust on-line and does not necessarily involve a transaction, however there are other trust issues regarding information referenced or exchanged on a website such as during a login process where sensitive details such as personal identification and email addresses rather than financial details may be involved. The following figure displays the frequency distribution of responses to the survey item measuring Trust in Websites. More people were distrustful of websites (124) than were trustful of them (66) with 82 respondents indicating neutrality (neither trusted nor mistrusted websites).

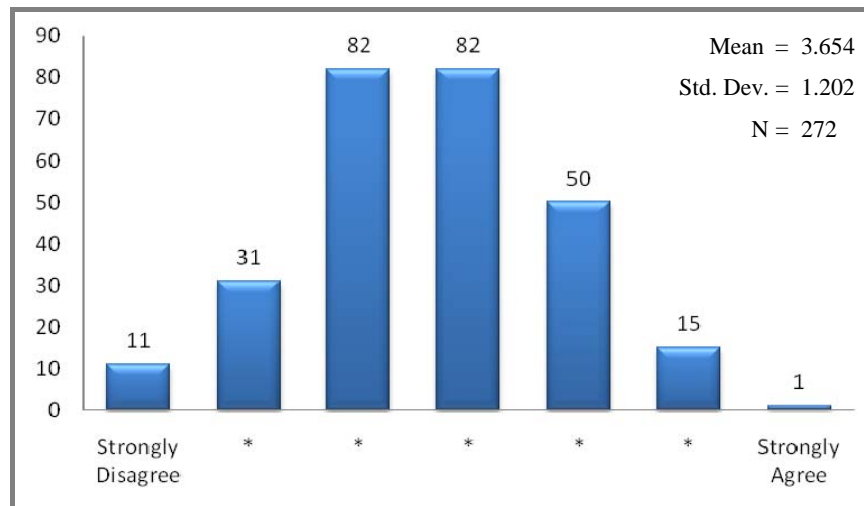


Figure 4.3 - Frequency Distribution of Trust in Websites

The question included in the survey to measure *Trust in giving Credit Card details to Websites* was included to measure the trust of respondents related to engaging in an entire financial transaction, including payment, via a website. This is where the level of trust must be sufficient for a user to confidently complete a transaction on-line i.e. “Transaction Trust” (Ganzaroli, Tan & Thoen 1999). The following figure displays the frequency distribution of responses to the survey item measuring Trust in giving Credit Card details to Websites. Quite clearly, the majority of respondents were suspicious of providing their credit card details to websites.

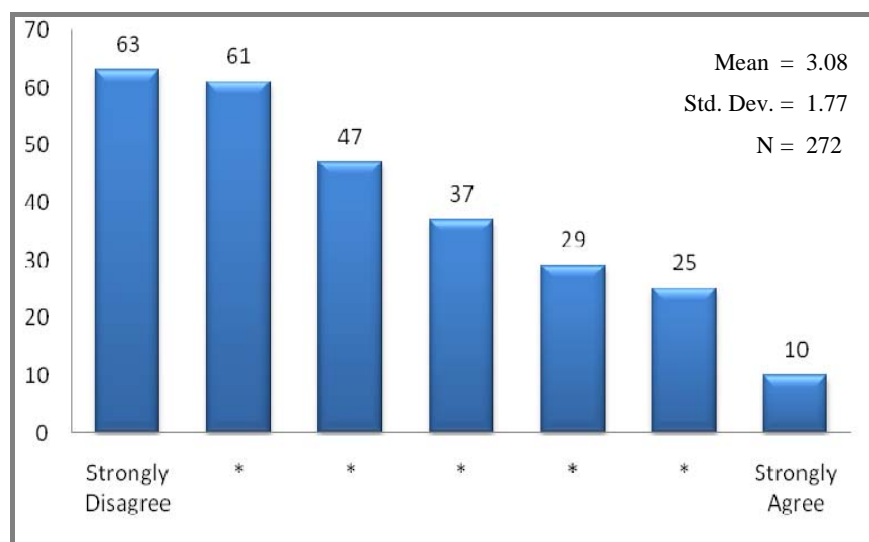


Figure 4.4 - Frequency Distribution of Trust in giving Credit Card details to Websites

Table 4.1 below lists key descriptive statistics for each of the four measures of “Trust”. The means of these items shows that respondents were most distrustful of providing their credit

card details to websites. In fact this is the only item below the scale midpoint. The other three measures of trust all have their means above the scale midpoint showing that there is an element of trust related to each of these items for the majority of respondents.

Trust Measure	Mean	Median	Std. Error	Std. Deviation
Trust in Shop Assistants	3.80	4	.079	1.305
Trust in Websites recommended by Word of Mouth	4.00	4	.087	1.435
Trust in Websites	3.65	4	.073	1.202
Trust in giving Credit Card details to Websites	3.08	3	.107	1.770

Table 4.1 - Summary of Descriptive Statistics for Trust Measures (N = 272)

The frequency tables and scatter plots for the Trust Measures can be found in Appendix B (pages 2 and 4 respectively).

4.4.2 Experience Measures

Three questions were included in the survey to measure respondents' levels of technical experience related to internet use.

Respondents to the survey were asked to rate their Computer Skills on a 5 point scale. The scale descriptors used for each of the five levels of experience were novice, beginner, intermediate, advanced or expert. Figure 4.5 shows the response for this survey item.

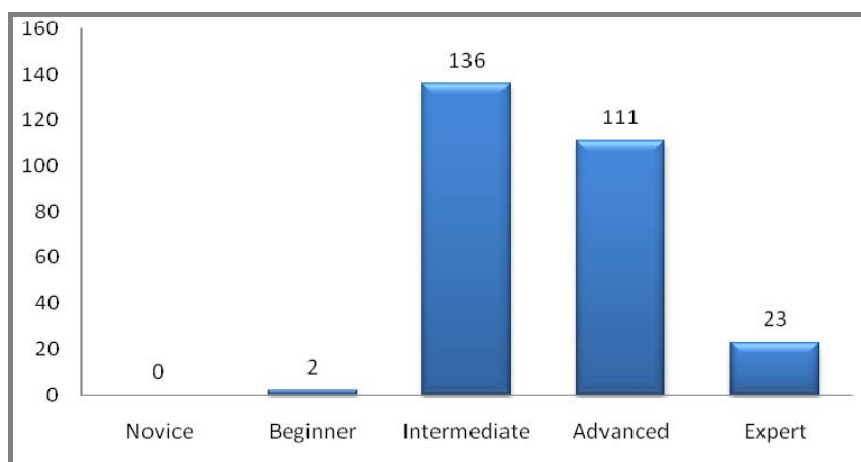


Figure 4.5 - Frequency Distribution of Computer Skills

Based on this self-evaluation of expertise, the majority of respondents (>99%) saw themselves as being experienced in using computers (intermediate or higher skills) with 49.3% being advanced or expert users. This indicates a well-informed set of computer-literate respondents.

Respondents were also asked to rate their Understanding of Web Technologies, on a 5 point scale with identical scale descriptors as those for Computer Skills. The following figure displays the frequencies of responses to the question used to measure this item on the survey.

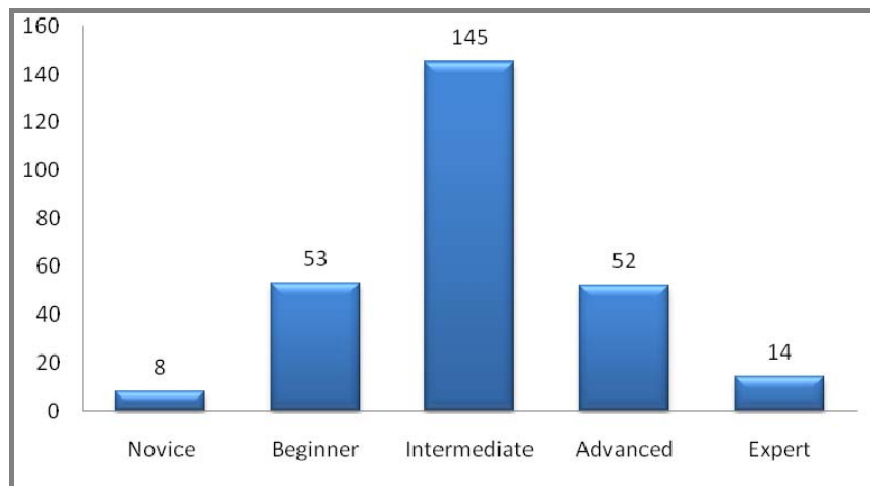


Figure 4.6 - Frequency Distribution of Understanding of Web Technologies

Most respondents (53%) self-identified themselves as having an intermediate Understanding of Web Technologies. There were an almost equal proportion of respondents who rated themselves below and above the scale midpoint for this item. The equal distribution of responses to this item coupled with the responses to the item measuring Computer Skills shows a group of respondents with above average computer skills but with a normally distributed Understanding of Web Technologies.

The final item included on the survey to measure “Experience” was Experience with Web Browsing. Respondents were asked to self-identify the number of years experience they had browsing the Web on a seven point scale. The responses to this item are summarised in the histogram in Figure 4.7 below. 83% of respondents answered that they had 6 years or more experience. The responses to these questions indicate a computer literate and 'web-savvy' group of respondents. With the level of experience the majority of the sample respondents have, it is likely most of the respondents would have at some time availed themselves of on-line purchases.

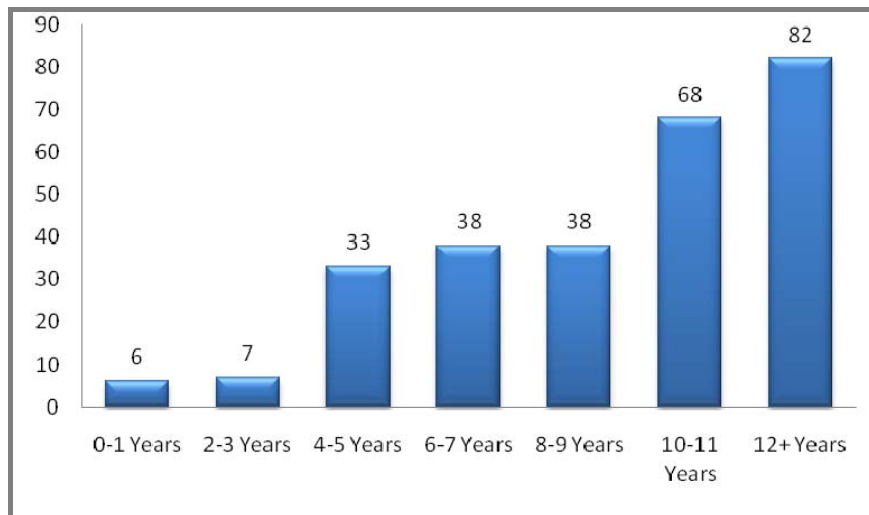


Figure 4.7 - Frequency Distribution of Experience with Web Browsing

The following table shows key descriptive statistics for each of the survey items measuring “Experience”.

Experience Measure	Scale	Mean	Median	Std. Error	Std. Deviation
Computer Skills	5 point	3.57	3	.040	.656
Understanding of Web Technologies	5 point	3.04	3	.051	.842
Years Experience Web Browsing	7 point	5.31	6	.97	1.607

Table 4.2 - Summary of Key Descriptive Statistics for Experience Measures (N=272)

The frequency tables for all of the Experience Measures can be found in Appendix B (page 16).

4.4.3 Demographic Measures

Three demographic items were included in the survey that the key characteristics of respondents could be determined. These items would allow the dataset to be examined to see if differences existed across the differing demographics of the sample. As well, these demographic items enable development of an accurate description of the sample should future researchers need to use it as a reference point for comparison with their findings. The three demographic items included on the survey were:

- **Gender**
- **Level of Education**
- **Age**

The sample consisted of 90 males (33%) and 182 females (66%). As previously mentioned in Chapter 3 (section 3.4) the sample size is too small to satisfy the conventional practices of a confidence level of 95% for Gender (Bartlett, Kotrlik & Higgins 2001). However the survey produced a sample size which satisfies a confidence level of 90% with a margin of error of 5%.

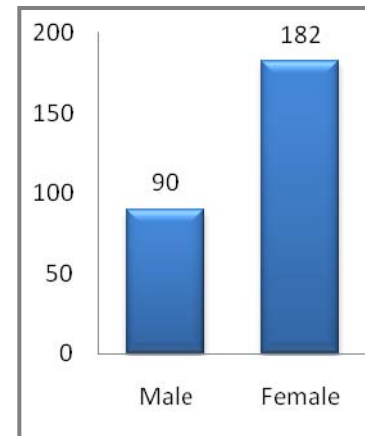


Figure 4.8 - Sample Gender

Respondents were asked to identify the highest Level of Education achieved. However, as mentioned in Chapter 3 (section 3.8) it is believed that this question may have been ambiguous to participants and instead of highest level of education completed they may have presumed it to mean highest level studied. Therefore responses to this item were interpreted to mean that respondents had studied or were studying at the level of education indicated. The following figure displays the frequency distribution of responses to this survey item.

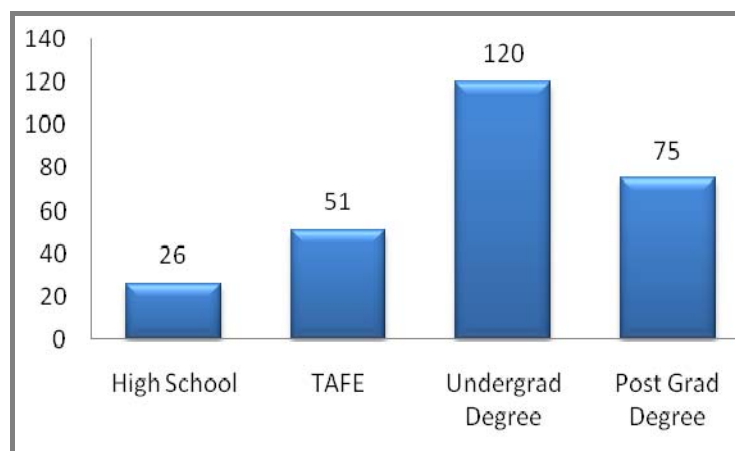


Figure 4.9 - Frequency Distribution of Level of Education

It should be noted that with 71% of respondents studying or having completed an Undergraduate University Degree is significantly different from the general population. The Australian Bureau of Statistics (2009) reported that 19% of the total population of Australia had a University Degree.

The final demographic variable included to differentiate respondents was Age. Figure 4.10 following displays the distribution of ages.

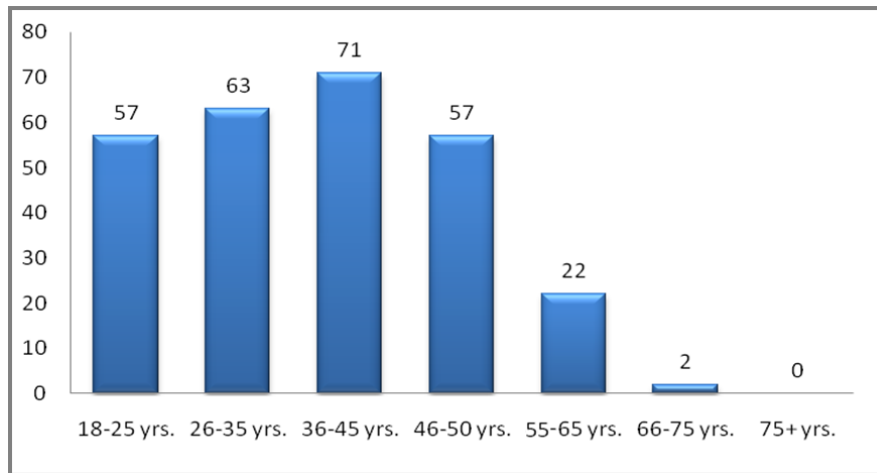


Figure 4.10 - Frequency Distribution of Age

The frequency tables for all of the Demographic Measures can be found in Appendix B (page 17).

4.4.4 Explanatory Measures

The survey contained 21 questions concerning the components of web-based e-commerce systems that influence user's trust.

The frequency tables and normality plots for each of these can be found in Appendix B (pages 18 and 25 respectively). Table 4.3 following displays a summary of the key descriptive statistic for these variables.

Explanatory Measure	Mean	Std. Error	Std. Deviation
Assistance via Skype	2.04	0.091	1.501
Guest Books	2.41	0.104	1.709
Images of Staff and Premises	3.12	0.111	1.825
User Forums	3.32	0.117	1.938
Privacy Statements	3.72	0.135	2.234
E-Trust Certificates	3.76	0.143	2.351
Buyer Testimonials	3.93	0.123	2.024
Maps Locating the Business	4.25	0.118	1.949
Assistance via Phone	4.43	0.123	2.028
Product Branding	4.63	0.107	1.773
Absence of Errors	4.69	0.121	1.996
Good Visual Design	4.7	0.102	1.687
Ease of Navigation	4.78	0.114	1.876
Payment Tracking Facilities	4.79	0.124	2.038
Contact Information	4.95	0.12	1.976
Money Back Guarantees	4.97	0.113	1.863
Order Tracking Facilities	5.06	0.114	1.875
After Sales Support	5.07	0.108	1.788
Multiple Payment Methods	5.23	0.11	1.806
Assistance via Email	5.33	0.107	1.757
Delivery Costs	6.22	0.077	1.27

Table 4.3 - Key Descriptive Statistics for Explanatory Measures ordered by Mean Ascending

Most of the explanatory measures have a mean within 1 of the midpoint (neutral) of the 7-point scale. What is interesting is that the explanatory measures that are not centred on the midpoint of the scale. These measures have a grey background in the above table and are discussed following:

- Assistance via Skype is a website component that most respondents (80% below the midpoint of the scale) do not check for when making a purchase on an e-commerce site. Indeed 58% of the respondents from this sample “Never” check for this component.
- Guest Books are another component that most respondents (72% below the midpoint of the scale) appear not to check for on an e-commerce site.
- Most respondents do however check for the following components on e-commerce sites Order Tracking Facilities (69% above midpoint), After Sales Support (68% above midpoint), Multiple Payment Methods (72% above midpoint) and Assistance via Email (73% above midpoint of the scale).

- The highest rated item is Delivery Costs, almost all respondents (91.5% above the midpoint of the scale) check for its presence before committing to a purchase on an e-commerce site. In fact 159 of the 272 respondents “Always” check for the presence of this component before making a purchase. This explanatory variable does not appear in any of the further analysis undertaken which may mean it has nothing to do per se with trust but has a lot to do with the economics of the transaction. What is apparent is that developers and vendors should not overlook this component on an e-commerce site.

4.5 General Linear Models

A key focus of the study was to identify models of 'trust' and determine those factors that indicate 'trust'. The first stage in examining the data was to examine General Linear Models (GLM). Univariate Analysis of Variance was the technique used to examine the relationships between each of the three demographic variables and the four measures of “Trust”. The results from this analysis are shown in Table 4.4. Significant associations are shaded grey and highlighted in bold.

Variable		Statistics		
Response	Demographic	F	df	p
Trust in Shop Assistants	Gender	1.153	1, 270	0.284
	Level of Education	0.409	3, 268	0.747
	Age	2.381	5, 266	0.039
Trust in Websites	Gender	3.392	1, 270	0.067
	Level of Education	0.090	3, 268	0.966
	Age	1.506	5, 266	0.188
Trust in giving Credit Card details to Websites	Gender	9.834	1, 270	0.002
	Level of Education	0.063	3, 268	0.979
	Age	1.329	5, 266	0.252
Trust in Websites Recommended by Word of Mouth	Gender	0.129	1, 270	0.720
	Level of Education	0.498	3, 268	0.684
	Age	2.648	5, 266	0.023

Table 4.4 - GLM of Trust and Demographic variables

The GLM of Trust and Demographic variables indicate the following;

- Age is significant in predicting the variance in Trust in Shop Assistants and Trust in Websites Recommended by Word of Mouth.
- Gender is significant in predicting the variance in Trust in giving Credit Card Details to Websites.
- No demographic predicted significant variance in Trust in Websites.
- Education is shown to have no significant effect upon any of the four Trust measures.

The three demographic measures Gender, Level of Education and Age represent categorical data and as such should be analysed using non-parametric tests. This is accomplished later in this thesis (see section 4.8).

For each of the Trust measures in the study a General Linear Model (GLM) was run for each of the Experience measures.

Variable		Statistics		
Response	Experience	F	df	p
Trust in Shop Assistants	Computer Skills	0.684	3, 268	0.563
	Understanding of Web Technologies	0.210	4, 267	0.933
	Web Browsing	0.942	6, 265	0.465
Trust in Websites	Computer Skills	2.720	3, 268	0.045
	Understanding of Web Technologies	1.754	4, 267	0.138
	Web Browsing	1.600	6, 265	0.147
Trust in giving Credit Card details to Websites	Computer Skills	2.388	3, 268	0.069
	Understanding of Web Technologies	2.232	4, 267	0.066
	Web Browsing	1.173	6, 265	0.321
Trust in Websites Recommended by Word of Mouth	Computer Skills	1.018	3, 268	0.385
	Understanding of Web Technologies	2.373	4, 267	0.053
	Web Browsing	0.545	6, 265	0.774

Table 4.5 - GLM of Trust and Experience variables

This analysis shows that Computer Skills is the only variable that predicts significant variance in Trust in Websites. However, the amount of variance in this case is in the order of 1% and therefore not worthy of further investigation.

4.6 Introduction to Multiple Regression Analysis

The Univariate Analysis of Variance described in the previous section identified relationships among key measures. The next stage of the analysis sought to identify the effects of multiple explanatory variables (website components) upon each of the “Trust” and “Experience” variables. Linear Regression analysis is used to determine significant predictive relationships between variables and Multiple Linear Regression in particular is used where there are multiple explanatory variables acting upon a single response variable (Abrams 2007; Gupta 1999, 2000).

As mentioned in section 3.12 certain assumptions regarding the data involved in regression analysis must be met before the results can be considered as reliable (Abrams 2007; Chen et al. 2003; Gupta 1999, 2000; Osborne & Waters 2002; Rubinfeld 2000; StatSoft 2007; Zikmund 2003). These assumptions are discussed in the following sub-sections.

4.6.1 Assumptions of Regression

Classical Assumptions of Regression include the following (Abrams 2007; Gupta 1999, 2000; Osborne & Waters 2002):

- **Response variables have normal distributions**
- **Residuals of Multiple Linear Regression models have normal distributions**
- **Relationships between variables are linear in nature**
- **Residuals display minimal heteroscedasticity**

Another important assumption is that the ratio between the number of observations and the number of explanatory variables should ideally be 20:1 and no less than 5:1 (Abrams 2007; Bartlett, Kotrlik & Higgins 2001). One drawback of PASW (formerly SPSS) is its inability to test directly for the breakdown of classical assumptions and each test must be performed separately (Gupta 1999). In order to check that the data obtained from the survey satisfy the above mentioned assumptions of regression scatter plots of the standardised residuals against the standardised predicted values as well as histograms of the standardised residuals were generated as part of the analysis for each of the models. The scatter plots and histograms of the standardised residuals can be found in Appendix B (page 27).

Examination of the outputs from each of the analyses meant that it could be assumed that in all cases the data obtained from the survey satisfies all of the necessary assumptions for Multiple Linear Regression analysis.

4.6.2 Normal Distribution

Normality of the sample and the distribution of responses to each of the variables were discussed earlier in this chapter in section 4.4 ‘Descriptive Statistics’. These analyses show that it can reasonably be assumed that the responses to the survey are sufficiently normally distributed for the results of the Multiple Linear Regression analyses to be considered reliable.

Furthermore, examination of the histograms of the standardised residuals generated for each of the Multiple Linear Regressions reported in the subsections of the following section 4.7 Multiple Linear Regression Analysis, confirms that the residuals of the Multiple Linear Regression models have normal distributions (Appendix B page 27).

4.6.3 Linearity

The scatter plots displayed in Appendix B (page 4) show that the relationships between the response variables of Trust in Websites, Trust in giving Credit Card details to Websites and Trust in Websites recommended by Word of Mouth and the explanatory variables are linear by nature. The same is also demonstrated in the scatter plots of the explanatory variables and the “Experience” variables. Furthermore examination of the scatter-plots of the standardised residuals vs. standardised predicted values indicates that the relationships between the variables are linear (Appendix B page 27). Nonlinearity is indicated in a plot of residuals when the overall shape of the plot is uneven, curved or fanned (Chen et al. 2003; Osborne & Waters 2002).

4.6.4 Homoscedasticity

Homoscedasticity is where the variance of errors occurs evenly across all levels of the explanatory variables. Heteroscedasticity is indicated when the variance of errors adversely differs and can increase the possibility of a Type I error (Abrams 2007; Chen et al. 2003; Osborne & Waters 2002; Pryce 2002). As in the above linearity assumptions, examination of the scatter-plots of the standardised residuals vs. standardised predicted values (Appendix B page 27) also indicates that there are no adverse heteroscedastic tendencies present in the relationships between the variables returned in the Multiple Linear Regression analysis models outlined in the following section.

4.7 Multiple Linear Regression Analysis

Multiple Linear Regression analysis is a statistical technique which involves several steps. A summary of the steps carried out in the analysis of findings in the study are outlined as follows:

1. Correlations were generated in order to preview significant relations among the variables (Appendix C page 2).
2. The greater the number of variables entered into a Multiple Linear Regression analysis the greater the chances of a type 1 error (false positive) occurring. As there are 21 explanatory variables in the dataset, simple Linear Regressions were conducted for each of the “Trust” measures (with the exception of Trust in Shop Assistants) and the “Experience” measures by each of the explanatory variables (Website components) to reduce the number of variables to be used in the Multiple Linear Regression analysis. The criteria for inclusion in the analysis was set at 85% certainty (i.e. $p \leq 0.15$) that the explanatory variable is having an effect upon the measure of “Trust” or “Experience”. The 85% level of certainty was chosen as it reduced the chance of a type 2 error (false negative) occurring.
3. Multiple Linear Regression Models at the 95% level of certainty (i.e. $p \leq 0.05$) were then produced for each of the “Trust” and “Experience” response variables and fitted by the explanatory variables identified in step 2 above to satisfy the criteria for inclusion in the Multiple Linear Regression Analysis.

Results of each the above steps are reported in the following sub-sections.

4.7.1 Correlations

Correlations were output from PASW (formerly SPSS) and are available in Appendix C (page 2) and Non-Parametric correlations showing Spearman’s coefficients in Appendix C (page 5). Note that the tables produced by PASW were truncated in order to reduce redundancy. Significant correlations at the 0.01 level are embolden and shaded in grey and significant correlations at the 0.05 level are shaded in a lighter grey. These correlations served as a guide towards the construction of the final models produced by the Multiple Linear Regression analyses and the non-parametric tests outlined in section 4.8.

4.7.2 Simple Linear Regressions

Simple Linear Regressions were produced for each of the response variables included in the “Trust” measures and the “Experience” measures by each of the explanatory variables (Website components). The complete results of the tests are available in Appendix B (page 33) These Simple Linear Regressions were conducted in an effort to find candidates for inclusion in the Multiple Linear Regressions conducted in the next step of the analysis.

The following tables summarise the results of the Simple Linear Regressions showing only those website components which matched the criteria for inclusion in the Multiple Linear Regression Analysis. This process was undertaken in order to reduce the overall number of variables used to produce the final Multiple Linear Regression models. From this a twofold effect is realised. Firstly the incidence of Type I and II errors is reduced and secondly the ratio of the number of observations to explanatory variables is maximised (Abrams 2007; Bartlett, Kotrlik & Higgins 2001). This step also confirms the relationships evident in the correlations conducted in step 1 and also allows the beta values to be perused before each item was examined in the Multiple Linear Regression models.

Variable		Model Coefficients			Statistics	
Response	Explanatory		β	SE(β)	t	p
Trust in giving Credit Card details to Websites	Privacy Statements	Intercept	3.676	0.205		
		Privacy Statements	-0.159	0.040	-3.360	0.001
	Contact Information	Intercept	3.599	0.289		
		Contact Information	-.104	0.054	-1.918	0.056
	Product Branding	Intercept	2.549	0.299		
		branding	0.116	0.060	1.917	0.056
	Assistance via Phone	Intercept	3.804	0.254		
		Assistance via Phone	-0.162	0.052	-3.110	0.002
	Assistance via E-mail	Intercept	3.650	0.342		
		Assistance via E-mail	-0.106	0.061	-1.739	0.083

Table 4.6 – Explanatory variables selected for MLR for Trust in giving Credit Card details to Websites

Variable		Model Coefficients			Statistics	
Response	Explanatory		β	SE(β)	t	p
Trust in Websites	Privacy Statements	Intercept	4.037	0.140		
		Privacy Statements	-0.103	0.032	-3.196	0.002
	Buyer Testimonials	Intercept	3.428	0.159		
		Buyer Testimonials	0.058	0.036	1.605	0.110
	Assistance via Skype	Intercept	3.501	0.123		
		Assistance via Skype	0.075	0.049	1.546	0.123
	Assistance via Phone	Intercept	3.998	0.174		
		Assistance via Phone	-0.078	0.036	-2.172	0.031

Table 4.7 - Explanatory variables selected for MLR for Trust in Websites

Variable		Model Coefficients			Statistics	
Response	Explanatory		β	SE(β)	t	p
Trust in Websites recommended by Word of Mouth	Privacy Statements	Intercept	4.509	0.166		
		Privacy Statements	-0.137	0.038	-3.582	0.000
	Absence of Errors	Intercept	3.648	0.222		
		Absence of Errors	0.075	0.044	1.724	0.086
	Product Branding	Intercept	3.619	0.243		
		Product Branding	0.082	0.049	1.677	0.095
	Payment Tracking	Intercept	4.541	0.220		
		Payment Tracking	-0.113	0.042	-2.668	0.008
	Maps of Location	Intercept	4.285	0.209		
		Maps of Location	-0.067	0.045	-1.502	0.134
	Assistance via Phone	Intercept	4.342	0.208		
		Assistance via Phone	-0.077	0.043	-1.803	0.073

Table 4.8 - Explanatory variables selected for MLR for Trust in Websites recommended by Word of Mouth

Variable		Model Coefficients			Statistics	
Response	Explanatory		β	SE(β)	T	p
Level of Computer Skills	Contact Information	Intercept	3.381	0.107		
		Contact Information	0.038	0.020	1.902	0.058
	User Forums	Intercept	3.446	0.079		
		User Forums	0.037	0.020	1.816	0.070
	E-Trust Certificates	Intercept	3.348	0.074		
		E-Trust Certificates	0.059	0.017	3.564	0.000
	Ease of Navigability	Intercept	3.276	0.108		
		Ease of Navigability	0.061	0.021	2.933	0.004
	Absence of Errors	Intercept	3.349	0.101		
		Absence of Errors	0.047	0.020	2.379	0.018
	Good Visual Design	Intercept	3.383	0.118		
		Good Visual Design	0.040	0.024	1.692	0.092
	Assistance via Skype	Intercept	3.484	0.067		
		Assistance via Skype	0.042	0.026	1.592	0.113
	Assistance via Email	Intercept	3.390	0.127		
		Assistance via Email	0.034	0.023	1.486	0.138

Table 4.9 - Explanatory variables selected for MLR for Level of Computer Skills

Variable		Model Coefficients			Statistics	
Response	Explanatory		β	SE(β)	t	p
Experience with Web Browsing	Contact Information	Intercept	4.795	0.262		
		Contact Information	0.103	0.049	2.098	0.037
	User Forums	Intercept	4.860	0.192		
		User Forums	0.134	0.050	2.687	0.008
	E-Trust Certificates	Intercept	4.670	0.179		
		E-Trust Certificates	0.169	0.040	4.193	0.000
	Ease of Navigability	Intercept	4.638	0.264		
		Ease of Navigability	0.139	0.051	2.711	0.007
	Absence of Errors	Intercept	4.438	0.243		
		Absence of Errors	0.185	0.048	3.877	0.000
	Good Visual Design	Intercept	4.830	0.288		
		Good Visual Design	0.101	0.058	1.755	0.080
	Order Tracking	Intercept	4.577	0.277		
		Order Tracking	0.144	0.051	2.799	0.005

Table 4.10 - Explanatory variables selected for MLR for Experience with Web Browsing

Variable		Model Coefficients			Statistics	
Response	Explanatory		β	SE(β)	T	p
Understanding of Web Technologies	Privacy Statements	Intercept Privacy Statements	2.900 0.038	0.099 0.023	1.652	0.100
	Contact Information	Intercept Contact Information	2.584 0.092	0.135 0.025	3.636	0.000
	Buyer Testimonials	Intercept Buyer Testimonials	2.716 0.083	0.110 0.025	3.329	0.001
	Guestbooks	Intercept Guestbooks	2.902 0.057	0.088 0.030	1.928	0.055
	User Forums	Intercept User Forums	2.676 0.110	0.099 0.026	4.275	0.000
	E-Trust Certificates	Intercept E-Trust Certificates	2.685 0.095	0.093 0.021	4.494	0.000
	Ease of Navigability	Intercept Ease of Navigability	2.462 0.121	0.135 0.026	4.593	0.000
	Absence of Errors	Intercept Absence of Errors	2.648 0.084	0.128 0.025	3.323	0.001
	Good Visual Design	Intercept Good Visual Design	2.515 0.112	0.148 0.030	3.776	0.000
	Product Branding	Intercept Product Branding	2.692 0.075	0.142 0.029	2.634	0.009
	Order Tracking	Intercept Order Tracking	2.747 0.058	0.146 0.027	2.141	0.033
	After Sales Support	Intercept After Sales Support	2.583 0.090	0.151 0.028	3.205	0.002
	Multiple Payment Methods	Intercept Multiple Payment Methods	2.641 0.076	0.155 0.028	2.725	0.007
	Payment Tracking	Intercept Payment Tracking	2.856 0.038	0.130 0.025	1.535	0.126
	Delivery Costs	Intercept Delivery Costs	2.463 0.093	0.254 0.040	2.322	0.021
	Assistance via Skype	Intercept Assistance via Skype	2.898 0.070	0.086 0.034	2.055	0.041
	Assistance via Email	Intercept Assistance via Email	2.618 0.079	0.162 0.029	2.753	0.006

Table 4.11 - Explanatory variables selected for MLR for Understanding of Web Technologies

4.7.3 Multiple Linear Regression Models

The first Multiple Linear Regression analyses outlined in the following subsections concern the “Trust” measures. The next three Multiple Linear Regression analyses examine the “Experience” measures.

User behaviour regarding website components and features on a website before making a purchase provides an indication of their level of trust and this is the reason why these variables have been used as predictors of the variation in the “Trust” and “Experience” response variables.

4.7.3.1 Trust in Websites

A total of four explanatory variables resulting from the previous step were entered in this Multiple Linear Regression analysis (Table 4.7). The final solution shown in the table below reveals that only two of the four variables in this model, *Privacy Statements* and *Buyer Testimonials*, make a significant contribution to the explanation of variance in Trust in Websites.

Variable	β	Std.Err(β)	t	p
intercept	3.732	0.171	21.769	0.000
Privacy Statements	-0.138	0.034	-4.082	0.000
Buyer Testimonials	0.111	0.037	2.979	0.003
$R^2 = 0.067$, $F_{2, 269} = 9.694$, $p = 0.000$				

Table 4.12 – Final MLR model for Trust in Websites

The amount of variance explained by the relationship in this instance is not particularly large (6.7%, $R^2 = 0.067$). However, the fact that together these variables contribute to the variance in Trust in Websites should be noted by researchers.

The negative relation indicated by the negative beta value for *Privacy Statements* was revealed in the correlation analysis Appendix C (page 2) Correlations ($r = -.191$, $p < 0.01$). This suggests that respondents who have less Trust in Websites are more likely to search for a *Privacy Statement*.

The positive relationship between *Buyer Testimonials* and Trust in Websites indicates that respondents were more likely to trust the *Buyer Testimonials* on a site that was perceived as more trustworthy.

4.7.3.2 Trust in giving Credit Card details to Websites

A total of five explanatory variables resulting from the Simple Linear Regressions step were entered in this Multiple Linear Regression analysis (Table 4.6). The final solution shown below reveals that three of the five variables, *Privacy Statements*, *Assistance via Phone* and *Product Branding*, make a significant contribution to the explanation of variance in Trust in giving Credit Card details to Websites.

Variable	β	Std.Err(β)	t	p
intercept	3.501	0.349	10.041	0.000
Privacy Statements	-0.142	0.047	-2.995	0.003
Assistance via Phone	-0.168	0.054	-3.132	0.002
Product Branding	0.185	0.060	3.072	0.002
$R^2 = 0.093$, $F_{3, 268} = 9.166$, $p = 0.000$				

Table 4.13 – Final MLR model for Trust in giving Credit Card details to Websites

In this case the amount of variance explained by the relationships among these variables is slightly higher than in the first model with Trust in Websites as the dependant variable. These three variables contributed to 9.3% ($R^2 = 0.093$) of the variance in Trust in giving Credit Card details to Websites.

Here the negative relation indicated by the negative beta value for *Privacy Statements* was revealed in the correlation analysis Appendix C (page 2) Correlations ($r = -.200$, $p < 0.01$). This also suggests that respondents who have less Trust in giving Credit Card details to Websites are more likely to search for *Privacy Statements* before making a purchase.

The negative relation indicated by the negative beta value for *Assistance via Phone* ($r = .186$, $p < .01$) was also evident in the correlation analysis (Appendix C, page 2). This also suggests that respondents who have less Trust in giving Credit Card details to Websites are more likely to search for *Assistance via Phone* before making a purchase.

The positive relationship between *Product Branding* and Trust in giving Credit Card details to Websites suggests that respondents who have a higher level of Trust in giving Credit Card details to Websites are more likely check for *Product Branding*.

4.7.3.3 Trust in Websites Recommended by Word of Mouth

Six explanatory variables identified from the Simple Linear Regressions stage of the analysis were entered to the model with Trust in Websites Recommended by Word of Mouth (Table 4.8). The final solution shown in table 4.14 below shows that three of the variables, *Privacy Statements*, *Absence of Errors* and *Payment Tracking*, make a significant contribution to the explanation of variance in Trust in Websites recommended by Word of Mouth.

Variable	β	Std.Err(β)	t	p
intercept	4.270	0.259	16.512	0.000
Privacy Statements	-0.141	0.042	-3.373	0.001
Absence of Errors	0.154	0.045	3.412	0.001
Payment Tracking	-0.097	0.046	-2.098	0.037
$R^2 = 0.091$, $F_{3, 268} = 8.960$, $p = 0.000$				

Table 4.14 – Final MLR model for Trust in Websites recommended by Word of Mouth

Collectively these variables explain 9.1% of the variance in the variable measuring Trust in Websites recommended by Word of Mouth. Here once more the negative relation indicated by the negative beta value for *Privacy Statements* ($r = -.213$, $p < 0.01$) was evident in the correlation analysis (Appendix C, page 2). This suggests that respondents who have less Trust in Websites recommended by Word of Mouth are again more likely to search for *Privacy Statements*.

The positive relationship existing between *Absence of Errors* and Trust in Websites Recommended by Word of Mouth suggests that respondents are more likely to check for *Absence of Errors* on a site which has been previously recommended as a trusted site.

A negative relation is indicated by the negative beta value for *Payment Tracking* which was also revealed in the correlation analysis Appendix C (page 2) Correlations ($r = -.160$, $p < 0.01$). This suggests that respondents who have less Trust in Websites Recommended by Word of Mouth are more likely to search for *Payment Tracking* facilities before making a purchase.

4.7.3.4 Level of Computer Skills

Eight explanatory variables were returned from the Simple Linear Regressions stage of the analysis for Computer Skills (Table 4.9). These eight explanatory variables were entered to the Multiple Linear Regression analysis which resulted in only one of them explaining significant variance in the response variable i.e. *E-Trust Certificates*. Therefore, even though there were eight variables identified from the simple linear regression analyses (three at the 95% confidence level), only one variable *E-Trust Certificates* is required to measure this dimension.

Variable	β	Std.Err(β)	t	p
intercept	4.270	.074	45.526	0.000
E-Trust Certificates	0.059	.017	3.564	0.000
$R^2 = 0.045$, $F_{1, 270} = 12.700$, $p = 0.000$				

Table 4.15 - Final MLR model for Level of Computer Skills

The resulting model indicates that the effect is tiny as the amount of variance explained by the relationships is only 4.5% ($R^2 = 0.045$). A relationship between the *E-Trust Certificates* and Level of Computer Skills variables was also revealed in the correlation analysis Appendix C (page 2) Correlations ($r = .212$, $p < 0.01$).

The positive beta value for *E-Trust Certificates* suggests that the higher the Level of Computer Skills a user has the more likely they are to check for the presence of E-Trust Certificates.

4.7.3.5 Understanding of Web Technologies

From the Simple Linear Regression models produced in stage 2 of the analysis with **Understanding of Web Technologies** as the response variable a total of seventeen variables (fourteen with a significance variance where $p \leq 0.05$) were found to satisfy the criteria for inclusion in the Multiple Linear Regression model (Table 4.11). However the final model shows that only three of these variables explain significant variance in the response variable. The three variables accounted for 11.6% of the variance in the dependant variable Understanding of Web Technologies.

Variable	β	Std.Err(β)	t	p
intercept	2.299	0.140	16.416	.000
Ease of Navigability	0.072	0.029	2.487	.014
E-Trust Certificates	0.053	0.023	2.260	.025
User Forums	0.059	0.028	2.121	.035
$R^2 = 0.116$, $F_{3, 268} = 11.774$, $p = 0.000$				

Table 4.16 – Final MLR model for Understanding of Web Technologies

The above table shows the final model produced by the Multiple Linear Regression analysis for Understanding of Web Technologies. In the correlation analysis (Appendix C, page 2) a total of eleven variables were found with significant relationships with the response variable ($p \leq 0.01$).

The positive beta values for *Ease of Navigability*, *E-Trust Certificates* and *User Forums* suggests that the higher the level of Understanding of Web Technologies a respondent has the more likely they are to check for *Ease of Navigability* and the presence of *E-Trust Certificates* and *User Forums*.

4.7.3.6 Experience with Web Browsing

From the Simple Linear Regressions produced in step 2 of the analysis with Experience with Web Browsing seven variables were found to satisfy the criteria for inclusion (Table 4.10). However the final model revealed that only two of the variables accounted for significant variance in Experience with Web Browsing ($R^2 = 8.1\%$). These two variables were *E-Trust Certificates* and *Absence of Errors* as shown in the table below.

Variable	β	Std.Err(β)	t	p
intercept	4.256	0.248	17.148	0.000
E-Trust Certificates	0.125	0.044	2.851	0.005
Absence of Errors	0.123	0.052	2.381	0.018
$R^2 = 0.081$, $F_{2, 269} = 11.777$, $p = 0.000$				

Table 4.17 – Final MLR model for Experience in Web Browsing

The above table shows the final model produced by the Multiple Linear Regression analysis for Experience in Web Browsing. In the correlation analysis (Appendix C, page 2) a total of five variables were found with highly significant relationships with this response variable ($p \leq 0.01$).

The positive beta value for *E-Trust Certificates* and *Absence of Errors* suggests that respondents with more Experience with Web Browsing are more likely to check for the presence of *E-Trust Certificates* and the *Absence of Errors* on a website.

4.8 Non-Parametric Tests

Non-parametric tests were also run on the data to test for differences based on the demographic characteristics of the sample. Complete tables of the results can be seen in Appendix B (pages 39-41 inclusively).

Three demographic measures and three “Experience” measures were included in the study, which define various user profiles. The “Experience” measures of: Computer Skills, Web Technologies and Web Browsing were examined in the Multiple Linear Regression Analysis (section 4.7). However the three demographic measures of: Gender, Education and Age represent categorical data and are the focus of interest for the following non-parametric tests.

4.8.1 Mann-Whitney Tests for Gender

Variables	Mann-Whitney	Z	p
Trust in giving Credit Card details to Websites	6298.500	-3.152	0.002
User Forums	6365.500	-3.040	0.002
E-Trust Certificates	6656.000	-2.571	0.010
Assistance via Phone	6237.000	-3.243	0.001

Table 4.18 - Summary of Mann-Whitney Tests for Gender

The above table shows a summary of the results of the Mann-Whitney Tests for Gender.

The following table shows the mean ranks of Males and Females.

Variables	Males = 90		Females = 182	
	Mean Rank	Difference	Mean Rank	Difference
Trust in giving Credit Card details to Websites	157.52	31.41	126.11	-31.41
User Forums	156.77	30.29	126.48	-30.29
E-Trust Certificates	153.54	25.47	128.07	-25.47
Assistance via Phone	114.80	-32.43	147.23	32.43

Table 4.19 - Mean Ranks of significant variables for Gender

The summary of results of the Mann-Whitney Tests for Gender shown in Table 4.19 indicate highly significant associations between Gender and the variables of *Trust in giving Credit Card details to Websites*, *User Forums*, *E-Trust Certificates* and *Assistance via Phone*. The mean ranks indicate that Males score higher for *Trust in giving Credit Card details to Websites*, *User Forums*, *E-Trust Certificates* and that Females score higher for *Assistance via Phone*.

4.8.2 Kruskal-Wallis Tests for Level of Education and Age

Education

The following table shows a summary of the results of the Kruskal-Wallis Tests for Education.

Variables	Chi-Square	df	p
Level of Computer Skills	16.419	3	0.001
Understanding of Web Technologies	13.748	3	0.003
Experience with Web Browsing	12.423	3	0.006
Age	44.079	3	0.000
Money back Guarantees	14.713	3	0.002

Table 4.20 - Summary of Kruskal-Wallis Tests for Level of Education

The following table shows a summary of the Mean Ranks of significant variables for Education.

Variables	High School N = 26	TAFE N = 51	Under grad N = 120	Post grad N = 75
Level of Computer Skills	99.00	129.24	133.05	159.95
Understanding of Web Technologies	97.65	128.10	136.39	155.86
Experience with Web Browsing	119.25	135.23	124.83	162.02
Age	89.69	144.37	115.63	180.77
Money back Guarantees	138.81	140.80	151.69	108.47

Table 4.21 – Mean Ranks of significant variables for Level of Education

The summary of results of the Kruskal-Wallis Tests for Level of Education in Table 4.20 detail highly significant associations existing between Level of Education and *Level of Computer Skills*, *Understanding of Web Technologies*, *Experience with Web Browsing*, *Age* and *Money Back Guarantees*.

Examination of the mean ranks in Table 4.21 indicates a trend that as Level of Education increases the mean ranks of *Level of Computer Skills* and *Understanding of Web Technologies* also increase. The mean ranks for *Experience with Web Browsing* and *Age* appear to undulate as Level of Education increases and the mean ranks of *Money back Guarantees* appear to peak at Undergraduate level and taper off at Postgraduate level.

Age

The following table shows a summary of the results of the Kruskal-Wallis Tests for Age.

Variables	Chi-Square	df	p
Experience with Web Browsing	16.214	5	0.006
Contact Information	21.795	5	0.001

Table 4.22 - Summary of Kruskal-Wallis Tests for Age

The following table shows a summary of the Mean Ranks of significant variables for Age.

Variables	18-25 yrs N = 57	26-35 yrs N = 63	36-45 yrs N = 71	46-55 yrs N = 57	56-65 yrs N = 22	65-75 yrs N = 2
Experience with Web Browsing	105.03	145.17	132.89	150.88	162.41	194.00
Contact Information	103.89	124.00	153.52	146.14	173.48	174.00

Table 4.23 - Mean Ranks of significant variables for Age

The Kruskal-Wallis Tests for Age summarised in Table 4.22 indicate highly significant associations existing between the Age variable and the *Experience with Web Browsing* and *Contact Information* variables. The ranks of the means for these variables shown in Table 4.23 appear to undulate as Age increases.

4.9 Results of Part 3 of the Survey

Part 3 of the survey allowed respondents to order the 21 web components according to how important each is towards gaining their trust in a website. The table below shows the top ten of these web components ranked by importance for gaining respondents trust.

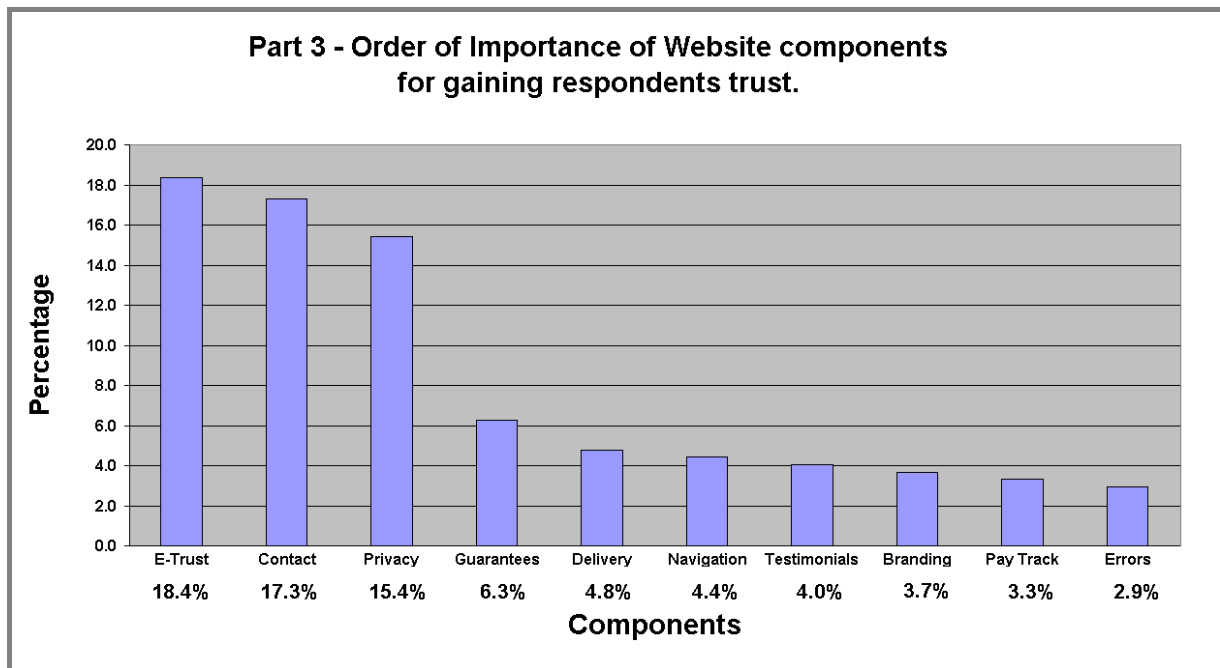


Figure 4.11 - Top ten rankings of web components Part 3

The first three website components E-Trust Certificates, Contact Information and Privacy Statements collectively account for 51% of the website features required to ensure consumer trust in a website.

Part 3 of the survey also included a section that allowed respondents to add to the list of website “Trust” components. Out of the 272 submissions a total of 18 extra web “Trust” components were submitted by 13 different respondents. Six of these components were chosen by the respondent that entered it to be the most important “Trust” component on a website.

These components are listed below. Those selected by the respondent to be the most important “Trust” component on a website have ‘1st choice’ listed beside them..

- Recommendations from other trusted site
- Pay pal facilities for payments
- Presence of on shore Staff in Australia
- Word of mouth recommendation – 1st choice
- Secure payment facilities – 1st choice
- Previous Purchase – 1st choice
- Price
- Warranty Information Available
- Gut Feeling
- Word of mouth on site reliability
- Encryption for payment information – 1st choice
- Endorsement by well-known companies – 1st choice
- Absence of pop-ups and advertisements – 1st choice
- Real time assistance through pop ups
- Product Approved by State Regulatory Body
- Compliance of product with industry standards
- Local authorised dealer for direct inquiries
- Bank guarantee of goods and services

4.10 Summary

The data analysis undertaken for this study is outlined in this chapter. The modelling has resulted in identification of key variables that can be used to identify “Trust” in websites. The identification of these components will be of interest to researchers and website developers. A discussion of the implications of the findings ensues in the next chapter.

Chapter 5: Conclusion

5.1 Introduction

Chapter 2 presented a review of the literature and state of research related to consumer trust in e-commerce and identified several relevant theoretical models.

This chapter revisits the two hypotheses and three research questions which are central to this study. It then presents a number of conclusions drawn from the data analysis and discusses the implications for future studies and describes the limitations of the study. Finally it also presents suggestions for further research.

The findings from this study contribute to existing research by identifying that website components can engender consumer trust in an on-line environment and in particular by identifying those components which users identify as being important in engendering their trust.

5.2 Conclusions related to the Research Hypotheses

The final models of the Multiple Linear Regression analysis presented in section 4.7.3 directly support the first hypothesis:

H1: “Website components can have a positive effect on a consumer’s trust in e-commerce”

The results of the Multiple Linear Regression analyses for the “Trust” measures showed that:

- 6.7% of the variance in Trust in Websites can be predicted by the frequency of users checking for the presence of a combination of *Privacy Statements* and *Buyer Testimonials*.
- 9.3% of the variance in Trust in giving Credit Card details to Websites can be predicted by the frequency of checking for the presence of a combination of *Privacy Statements*, *Assistance via Phone* and *Product Branding*.
- 9.1% of the variance in Trust in Websites recommended by Word of Mouth can be predicted by the frequency of checking for the presence of a combination of *Privacy Statements*, the *Absence of Errors* and *Payment Tracking* facilities.

The results of the analysis for the “Experience” measures showed that:

- 4.5% of the variance in Level of Computer Skills can be predicted by the frequency of users checking for the presence of *E-Trust Certificates*.
- 11.6% of the variance in Understanding of Web Technologies can be predicted by the frequency of users checking for the presence of a combination of *Ease of Navigability*, *E-Trust Certificates* and *User Forums*.
- 8.1% of the variance in Experience with Web Browsing can be predicted by the frequency of users checking for the presence of a combination of *E-Trust Certificates* and the *Absence of Errors* on a website.

The above results also support the second hypothesis:

H2: “There are differences in the importance of various website design components towards gaining consumer trust between differing user profiles.”

Examination of the descriptive statistics for the explanatory measures shown in Table 4.3 in section 4.4.4 indicates that at the lower end of the spectrum where the responses were well below the midpoint of the scale. *Assistance via Skype* and *Guest Books* are two website components which are the least checked for by respondents. In the case of *Assistance via Skype*, 58% of respondents reported that they “Never” check for this component and 80% of the responses fell below the midpoint of the scale. In the case of *Guest Books*, 47% of the respondents indicated that they “Never” check for the presence of *Guest Books* on websites before making a purchase and 72% of the responses fell below the midpoint of the scale.

Guest Books have often been incorporated into many websites from the early stages of the development of the WWW, in contrast *Skype* is relatively new and is a Voice Over Internet Protocol (VoIP) Internet to telephone network implementation which was founded in 2003 (skype.com 2009). From the correlation analysis shown in Appendix C (page 2), *Assistance via Skype* shows weak associations with the Level of Education and Understanding of Web Technologies response variables whilst *Guest Books* showed no associations with any of the other measures. This could mean that *Guest Books* are possibly fading in importance and that *Assistance via Skype* may be an emerging component increasing in importance as users become more familiar with its use.

Other variables which show no associations with any of the response variables in the correlation analysis shown in Appendix C (page 2) are *Images of Staff and Premises* and *Maps Locating the Business*. Whilst 26% of respondents reported that they “Never” check for *Images of Staff and Premises* and 58% of responses falling below the midpoint of the scale, a total of 11% of respondents reported that they “Never” check for *Maps Locating the Business* and 32% of responses for this variable fell below the midpoint of the scale. These two website components can be considered to contribute to a single factor identified by Pittayachawan (2007), which he describes as ‘Proof of Real Business’. For many consumers ‘Proof of Real Business’ may depend more upon business registration numbers as opposed to *Images of Staff and Premises* and *Maps Locating the Business*. In an environment where customers are making a purchase entirely on-line from a remote location consumers are less likely to need to refer to a map if they are expecting the items to be delivered.

At the higher end of the spectrum where the responses fell well above the midpoint of the scale *Delivery Costs* were the most checked for item by respondents before making a purchase. Only 2% of respondents indicated that they “Never” check for this item and 58% indicated that they “Always” check for *Delivery Costs* before making a purchase. *Assistance via Email*, *Multiple Payment Methods*, *After Sales Support* and *Order Tracking Facilities* also rated highly as website components which are frequently checked for. Although respondents reported that these components are the most frequently checked for items before making a purchase they did not result in any of the models produced by the Multiple Linear Regression analyses for any of the “Trust” or “Experience” response variables. Hence they are not shown to account for any significant variance in the response variables. However because these components are frequently checked for they may play an important role in the functionality of on-line transactions where their absence may adversely impact upon a consumer’s “Trust” in a website.

The Multiple Linear Regression models produced for the “Trust” measures were the result of the analysis of all responses to the survey without consideration of the level of on-line technical (expertise with computers, web technologies and years of browsing) knowledge of the respondents. The Multiple Linear Regression models produced for the “Experience” measures similarly did not take into account the level of trust the respondent had, and were produced to see if there was a difference in what respondents searched for on websites based on experience.

Privacy Statements clearly predominate as the most commonly checked for website component which can be seen to account for variance in the “Trust” measures, considering all respondents irrespective of differences in profile. In comparison it can be seen that as a user’s technical experience increases, the presence of *E-Trust Certificates* on websites becomes more significant. In the case of Understanding of Web Technologies it can be seen that *Ease of Navigability* takes a slight precedence over *E-Trust Certificates*.

The results of the Mann-Whitney tests in section 4.8.1 show that there is a highly significant difference between males and females regarding Trust in giving Credit Card details to Websites. This is also indicated in the General Linear Models shown in section 4.5. Other significant differences shown from the Mann-Whitney tests regarding website components include *User Forums*, *E-Trust Certificates* and *Assistance via Phone*.

Examination of the mean ranks of significant variables for Gender in Table 4.19 indicate that males show a higher level of Trust in giving Credit Card details to Websites and also a stronger preference for *User Forums* and *E-Trust Certificates* than females, whereas females are shown to have a stronger preference for *Assistance via Phone* than males.

The results of the Kruskal-Wallis tests in section 4.8.2 also show significant differences across the groups in the Level of Education measure regarding *Money Back Guarantees*. The mean ranks indicate that as the Level of Education increases from high school through to undergraduate level, *Money Back Guarantees* increase in importance and then sharply drops off for postgraduates. However as stated earlier the statistics for Level of Education may not be reliably accurate due to the ambiguity of the survey question. Having said this it could be considered that the postgraduate variable, representing the highest level measured, would be less susceptible to this ambiguity.

The Kruskal-Wallis tests in section 4.8.2 for the Age measure indicate that preference for *Contact Information* generally increases as Age increases.

Results of part 3 of the survey (section 4.9), show that *E-Trust Certificates*, *Contact Information* and *Privacy Statements* rank closely as the first three components reported by respondents which are regarded to be the most important to gaining their trust. Part 3 of the

survey was a measure of respondent's opinions as opposed to a measure of their behaviour, which was included in part 2 of the survey.

A possible reason for part 3 showing a higher result for *E-Trust Certificates* overall, than is demonstrated in the Multiple Linear Regression Analysis of the part 2 data could be that many e-commerce sites do not have *E-Trust Certificates*. The costs involved in establishing an e-trust certificate on an e-commerce website are substantive, in terms of both organisational and financial resources.

Anecdotally this suggests that *E-Trust Certificates* are less likely to be incorporated on a website before other website components such as a privacy statement which bears little cost to a business operator. For this reason it could be assumed that users would encounter *E-Trust Certificates* less frequently than *Privacy Statements*, *Contact Information* and other website components, which attract lower overheads. As a result the practice of searching for the presence of *E-Trust Certificates* may be less habitual for users, yet may still be of higher importance to gaining their trust.

5.3 Conclusions related to the Research Problem

The research problem detailed in this study concerns engendering sufficient consumer trust to encourage an on-line transaction. As discussed in section 2.7 the generic model of trust put forward by Ganzaroli, Tan & Thoen (1999), *Transaction Trust* is the level of trust that a website must convey to users if they are to encourage an on-line transaction. The theoretical models put forward by McKnight, Choudhury & Kacmar (2002) and Egger (2003) more elaborately described the process by which a user reaches a level of *Transaction Trust*.

McKnight, Choudhury & Kacmar's (2002) Web Trust Model (section 2.7.1), described the process of a user reaching a level of intention to make a transaction in the Trusting Intentions component of their model before making a commitment to a transaction in the final Trust Related Behaviours component. Egger's (2003) model, MoTEC (section 2.7.2), elaborates even further suggesting that the process is cyclic, whereby a user arrives at a website pre-conditioned by their own psychology (attitudes) and pre-purchase knowledge (experience) and initially evaluates the website's interface properties of branding and usability. The user then considers the website's informational content and evaluates the competence of the

company and its products and services and then evaluates the risk involved, taking into account the security and privacy aspects related to a purchase from the website. Finally the user enters the Relationship Management phase whereby a purchase is completed i.e. *Transaction Trust* is reached and then the Post-purchase Interactions phase continues to influence the trust in a user over time i.e. after sales service, which plays a further role in the user's continuing level of trust and also contributes to the user's pre-conditioning towards the next purchase.

The following describes how the findings of this research relate to the above theoretical models of trust in e-commerce. The key focus of the study is the effects upon the response variable of Trust in giving Credit Card details to Websites. The model returned by the Multiple Linear Regression analysis for Trust in giving Credit Card details to Websites in section 4.7.3.2 shows that three explanatory variables resulted, which taken together predict 9.3% of the variance in the "Trust" measure. These explanatory variables represent the frequency in which a user checks for the presence on the site, of *Privacy Statements*, *Assistance via Phone* and *Product Branding*.

The beta values for the explanatory variables in a Multiple Linear Regression analysis indicate the magnitude and directionality of the effect upon the response variable. In this case *Privacy Statements* and *Assistance via Phone* have negative beta values whilst *Product Branding* is positive (Table 4.13). As noted in section 4.7.3.2 the resulting model in the Multiple Linear Regression analysis suggests that, the lower a user's predisposition to trust is the more likely they will search for *Privacy Statements* and *Assistance via Phone* and conversely the higher a user's trust is the more likely they will search for *Product Branding*. However it is actually the user's behaviour regarding their use of these website components that is predicting their level of trust.

To draw an analogy to Egger's MoTEC model consider the steps in the following scenario:

1. A user visits an e-commerce website; this suggests that the user is in the process of shopping and has interest in what the site may offer. This can be seen as Dimension 1, Pre-Interactional Filters, of MoTEC, where the user has an initial predisposition to trust based on their attitudes and experience.
2. The user then initially evaluates the site via its interface properties. This can be seen as Dimension 2, Interface Properties, of MoTEC. If the user does not find the items of

interest and the services required on the website then the site would be regarded as unusable and the user would simply look elsewhere. For this analogy consider that the user has found the item/s of interest and the services offered. At this point the user has determined that the website is usable and that it may be able to satisfy their needs. Their attention then turns toward evaluation of the websites branding including the site itself, the products available and its functionality.

3. If the website is deemed as usable and the level of branding acceptable, the user then enters into the next stage for further evaluation. This is Dimension 3, Informational Content of MoTEC. In order to evaluate the site's trustworthiness the user considers the competence of the company and its products and services and considers the risk involved. If there is some degree of doubt or a perception of risk the user will attempt to manage that risk in an effort to make a decision to trust the site and its vendor i.e. the evaluation of privacy, security, etc.
4. Dimension 4, Relationship Management, of MoTEC is where a level of trust is reached sufficient to complete a transaction on-line i.e. *Transaction Trust* is reached. The user completes the order form (a pre-purchase interaction) and then submits the order along with their credit card details and awaits delivery (a post-purchase interaction). Trust is again reinforced upon final delivery of the goods and services supplied and then re-evaluated on the basis that the goods and services are of the standards expected (trust over time).

The above analogy depicts the stages a user goes through in the process of making an on-line purchase in accordance with Egger's Model of Trust in E-Commerce, MoTEC. The resulting model in the Multiple Linear Regression analysis for Trust in giving Credit Card details to Websites in section 4.7.3.2 supports the theoretical framework of MoTEC. Using the above analogy it can be clearly seen that the website components *Privacy Statements*, *Assistance via Phone* and *Product Branding* fit directly into Egger's MoTEC model as follows.

In step 2 in the above scenario branding and usability play distinct roles in engendering a customer trust i.e. Dimension 2, Interface Properties of MoTEC. A customer's evaluation of usability can also be considered to include yet not limited to, checking for *Delivery Costs*, *Assistance via Email*, *Multiple Payment Methods*, *After Sales Support*, *Order Tracking Facilities* which were shown to be commonly checked for in the descriptive statistics for the explanatory measures shown in Table 4.3 section 4.4.4. As noted before the Multiple Linear

Regression model returned in the analysis suggests that the more often a user checks for *Product Branding* the higher the predicted value for “Trust” will be. In step 3 in the above scenario, the user, in an effort to manage risk, evaluates the trustworthiness of the website and its vendor, before proceeding to the next stage of making a purchase. The Multiple Linear Regression model indicates that the more often a user checks for *Privacy Statements* and *Assistance via Phone* the lower the predicted value for trust will be.

This can be explained more clearly by revisiting the association between trust and risk as described in section 2.5 where Ulivieri (2004) is cited suggesting that the decision to trust involves the acceptance of some level of risk and that where there is no perception of risk, trust is of no concern. To elaborate further upon how this applies to the above scenario and taking into account the model returned by the Multiple Linear Regression analysis. Before making an on-line purchase the user can be seen to be making an attempt to manage a perceived risk by checking for the presence of *Privacy Statements* and *Assistance via Phone* on the website.

This also suggests that if the user is intent on making a purchase from a website and makes no attempt to check for either *Privacy Statements* or *Assistance via Phone* then it can be presumed that they perceive no level of risk in doing so. In such a situation they would have no reason to try to reinforce their trust because they already have a high level of trust in the site and so *Product Branding* is then their primary concern.

The above synopsis demonstrates that in conclusion the findings of this study answer the first two research questions, contributes to the third research question and conclusively confirms the first research hypothesis and also contributes to confirmation of the second research hypothesis. This synopsis also contributes to substantiating the theoretical frameworks used in this research regarding the theoretical models and concepts outlined in the literature review in sections 2.5, 2.6 and 2.7.

5.4 Implications for Theory

In regards to the Multiple Linear Regression analysis for each of the two secondary trust measures in the study, Trust in Websites and Trust in Websites Recommended by Word of Mouth, the findings can also be applied to the above analogy outlined in section 5.3 and

conclusions for these measures can be drawn in a similar manner. Although these measures do not explicitly involve a level of *Transaction Trust* they can still be considered to have a significant relevance to the overall findings of the study and in particular Trust in Websites Recommended by Word of Mouth can be considered to include an implicit level of *Transaction Trust*. In all cases the explanatory variables for the website components used in the Multiple Linear Regression analyses were drawn from the results of the response to the survey question, which explicitly states, “How often would you check for the following website components and features before making a purchase?”

Conclusions can therefore be drawn from the analyses of the above mentioned “Trust” measures which are also relevant to the confirmation of the theoretical models identified in the review of the literature in section 2.7. Whilst the Web Trust Model presented by McKnight, Choudhury & Kacmar (2002) and MoTEC, presented by Egger (2003) are very similar in nature, for the purposes of this study, MoTEC is considered to be more elaborate due to its dimension of trust over time.

Taking into account the model returned from the Multiple Linear Regression analysis for the Trust in Websites Recommended by Word of Mouth measure in section 4.7.3.3. The returned model identifies three explanatory variables, which when taken together account for 9.1% of the variance in the “Trust” measure. These variables are *Privacy Statements*, *Absence of Errors* and *Payment Tracking* where *Privacy Statements* and *Payment Tracking* are shown to have negative beta values and *Absence of Errors* has a positive value. Without going through the full synopsis as was carried out for Trust in giving Credit Card details to Websites in section 5.3 similar conclusions can be drawn where *Privacy Statements* can be seen to be a website component which reinforces “Trust” also common to this case. The differences can be explained by Dimension 1, Pre-Interactional Filters of MoTEC whereby the user is pre-conditioned by the recommendation. This further supports the theoretical foundations upon which this research is based.

Furthermore when considering the Multiple Linear Regression analysis for the Trust in Websites measure in section 4.7.3.1 only two variables resulted in the final model which can be seen to predict 6.7% of the variance in the “Trust” measure. In this case *Privacy Statements* are again common with a negative beta value and *Buyer Testimonials* showing a positive value. Because Trust in Websites does not imply any level of *Transaction Trust*,

however the degree of trust encapsulated in this measure can be considered to be measured at a lower level or perhaps more appropriately a lower level of perceived risk. Hence it can be considered that the theory used in this study, put forward by Castelfranchi & Falcone (1999) and Ulivieri (2004) in section 2.5, regarding the associations between trust and risk, is also supported.

5.5 Implications for Policy and Practice

The above conclusions have strong implications for policy and practice within the field of E-Commerce. This section now draws conclusions focusing on the analysis of the “Experience” measures included in the survey, which have further implications for policy and practice.

Additional conclusions may also be drawn from the Multiple Linear Regression analysis for each of the “Experience” measures included in the survey, Level of Computers Skills, Understanding of Web Technologies and Experience with Web Browsing, using the above mentioned analogy in section 5.3. However the focus of interest here includes how the results differ when a measure of technical “Experience” is considered in the analysis as opposed to a measure of “Trust”. The Multiple Linear Regression models returned for each of the “Experience” measures clearly showed that the frequency of checking for *E-Trust Certificates* is a common predictor of the variance in the “Experience” measures. The beta values for all variables returned in these models were positive. This means that the more a respondent checks for the presence of *E-Trust Certificates* the higher their Level of Computer Skills, Understanding of Web Technologies and Experience with Web Browsing will be. *Ease of Navigability* and *User Forums* are also associated with *E-Trust Certificates* in the model returned for Understanding of Web Technologies whereas *Absence of Errors* was returned in the model for Experience with Web Browsing.

To briefly summarise the above, the findings of the study suggest that the website component of *Privacy Statements* is the most prominent component included in the study that can be seen to both engender and reinforce a respondent’s trust in making an on-line purchase and that as a respondent’s experience increases they are more likely to also check for *E-Trust Certificates* before making a purchase. From part 3 of the survey *E-Trust Certificates* were identified as being the most important to gaining respondents’ trust followed closely by *Contact Information* and *Privacy Statements*. For practitioners of e-commerce including web

developers, vendors and marketers these findings have strong implications for policy and practice. Considering that as “Experience” amongst the users of the WWW increases with the passage of time, so too will the importance of having third party *E-Trust Certificates* included on e-commerce websites as well as *Privacy Statements*. It can be concluded from the results of the study that *Privacy Statements* are an indispensable website component for an e-commerce website. This website component (and several others) has been found to contribute to the gaining of consumer trust in an e-commerce system.

The following table shows a summary outline of the website components identified in the Multiple Linear Regression models for the “Trust” and “Experience” measures taken in the survey.

Components	Trust Measures			Experience Measures		
	Trust in Websites	Trust in giving Credit Card details to Websites	Trust in Websites recommended by Word of Mouth	Level of Computer Skills	Understanding of Web Technologies	Experience with Web Browsing
Privacy Statements	X	X	X			
E-Trust Certificates				X	X	X
Absence of Errors			X			X
Assistance via Phone		X				
Product Branding		X				
Buyer Testimonials	X					
Payment Tracking			X			
Ease of Navigability					X	
User Forums					X	

Table 5.1 - Outline of Website Components found to explain significant variance in the response variables

5.6 Limitations of the Study

The survey's sampling frame as described in section 3.3 consists of people with an on-line presence to be considered as potential/practising on-line shoppers. However because the sample for the study was initiated from a bulk email to students and staff of SCU it was anticipated that the sample would primarily consist of respondents with a higher level of education than in the general populace.

In their 2009 report, the Australian Bureau of Statistics (2009) reports that in the 2006 census only 19% of the population possessed an undergraduate degree or higher. Whereas an examination of the survey results (section 4.4.3 Demographic Measures) shows that of the 272 respondents a total of 195 indicate a level of education of undergraduate degree or higher. This means that in the sample population, 71% of the respondents fall into this category. This could be considered as a possible limitation of the study. Another possible limitation is that 66% of the respondents were female and that 70% of respondents were aged between 18 and 45 (section 4.4.3 Demographic Measures). This also suggests that younger males are less representative in the sample and given the tagline of the invitation to take part in the survey, i.e. "Are you concerned about purchasing on-line? Do our survey (Honours Research)", this could imply that younger males are less concerned.

Due to the scope of the survey it was not possible to venture beyond a general measure of trust. Considering that there are varying degrees of risk involved when interacting with a multitude of different e-commerce websites, a more detailed study involving differing degrees of risk would have been exhaustive. Also that the primary comparison within different user profiles was essentially made on the basis of technical experience can also be considered as a limitation as there are many other categories which could describe user profiles. The above mentioned limitations are not considered to place any doubt upon the outcomes of the study, yet only to the generalisation of the findings to the overall population, however they could form a basis for consideration in further research.

5.7 Suggestions for Further Research

An examination of the Simple Linear Regressions in Table 4.7 section 4.7.2 shows the variables which were chosen for selection in the Multiple Linear Regression analysis for Trust in Websites, reveals that the p (significance) value for *Buyer Testimonials* is 0.110. This is in

accordance with the criteria which was set for inclusion i.e. p is less than or equal to 0.15. The final model returned in the Multiple Linear Regression analysis for Trust in Websites shows that two variables, *Privacy Statements* and *Buyer Testimonials* together make a significant contribution to the explanation of the variance in Trust in Websites. However in many circumstances by itself a significance value, greater than 0.05 which is returned in a statistical test would not be considered as noteworthy. Whereas in the Multiple Linear Regression analysis for Trust in Websites the results show that when *Privacy Statements* and *Buyer Testimonials* are combined *Buyer Testimonials* becomes highly significant. This is also reflected in the correlation analysis Appendix C (page 2). This is noteworthy to researchers, as discarding variables on the basis that the significance value is considered too large to make a difference should be done with great caution as the above example demonstrates.

A similar situation also exists for the *Product Branding* variable returned in the Multiple Linear Regression analysis for Trust in giving Credit Card details to Websites where in the correlation analysis Appendix C (page 2) shows a p (significance) value of 0.056. This also applies to the *Absence of Errors* variable in the Multiple Linear Regression analysis for Trust in Websites recommended by Word of Mouth where the p value is 0.086.

In contrast the Multiple Linear Regression analysis for Understanding of Web Technologies returned only three variables from a total of seventeen which satisfied the criteria for inclusion and a total of eleven were found to have p values of less than 0.01. This suggests that discarding the other variables should be considered carefully according to the nature of the research. That these variables show a high level of significance in the correlations indicates that there are relationships which could be explored in a different context or setting in future research where they may be more appropriate.

Furthermore it was felt that further exploration of specific attributes that contribute to the “Trust” variables used in the study should also be considered. For example the understanding of the concept of privacy can be seen to consist of several attributes, Pittayachawan (2007) suggests that privacy consists of five aspects including notice (i.e. information that is collected and how it is used), choice (i.e. choices on how the information is used), access (i.e. accessibility to disclosed information), security (i.e. confidentiality of information), and redress (i.e. control to resolve problems regarding a site’s use and disclosure of a consumer’s information). A respondent’s attitude to these individual attributes that could be seen to be

contributing to an overall concept of privacy could affect the outcome if they were asked to consider them individually.

Another consideration for further research is that the results of part 3 of the survey showed that respondents indicated that *E-Trust Certificates*, *Contact Information* and *Privacy Statements* as the three most important website components for gaining their trust. Although *Privacy Statements* and *E-Trust Certificates* were shown in the data analysis to play an important role in gaining consumer trust, *Contact Information* was not evident in any of the Multiple Linear Regression analysis models. However it was observed in the Kruskal-Wallis Tests for Age (section 4.8.2 page 61) that a high level of significance for *Contact Information* was present. This was also verified in the non-parametric correlation analysis Appendix C (page 5). Further exploration in this area may reveal some interesting results.

5.8 Final Comments

Trust as a concept is complex in its nature and requires strong definitions within the context of how it is being measured and evaluated (Castelfranchi & Falcone 1999; Ulivieri 2004). This is of particular concern to researchers engaged in studies involving trust. In a situation where a high level of risk is perceived and if after careful deliberation a decision is then made to trust in a particular agent in expectation of a particular outcome, can it then be claimed that a high degree of trust is invested in such a decision?

A definitive answer to this would be: No! The above question defines a high level of risk, however the degree of trust placed in the decision has not been made clear. In such a situation the level of trust placed in the decision would also need to be evaluated. In contrast where a low level of risk is perceived, trust itself diminishes in its importance (Ulivieri 2004). However in this situation it can be implied that *complete* trust may be placed in the expectation of an outcome where a low level of risk is involved.

This suggests that another measure of trust is required, that is the *importance* that trust plays in a decision. In relation to this study this means that Trust in giving Credit Card details to Websites plays a more important role than simply Trust in Websites, even though respondents reported a higher level of Trust in Websites than for Trust in giving Credit Card details to Websites.

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Appendix A: Survey

Invitation Sent to Respondents

Hi All,

My name is George Coles and I am currently writing a thesis in collaboration with my supervisors Dr.Xiangzhu Gao and Dr.William Smart as part of my "Bachelor of Information Technology with Honours Degree" at Southern Cross University.

The thesis is titled "The Effects of Website Design on Consumer Trust in E-Commerce."

The study involves research into the subject and I have chosen to conduct an on-line survey to collect and evaluate user responses to a questionnaire regarding website design components.

Please use the link below to enter the site.

<http://www.gcoles.com/>

There is no obligation to take part in the survey and you can quit at any time during the process. The survey should take no longer than 15mins to complete and your participation will help immensely. The higher the response rate the more accurate the results will be. Your email address will be strictly confidential and is used solely for the purpose of establishing you as an Internet user with an active email service. A full statement of our privacy policy is available on the site.

A copy of the thesis will be available from the Southern Cross University Library when completed and any associated reports/papers generated from the study will be made available from the website.

It is anticipated that the findings of the study will benefit all participants with regards their awareness and practices of on-line purchasing. The study should also help to provide insight for web developers and e-commerce businesses into how to design websites which encourage user trust.

The results of this study may be published in peer-reviewed journals and/or presented at conferences, however only group data will be reported. Completion of the survey will be considered as implied consent.

For further inquiries please contact:

Researcher: George Coles B.I.T. Honours Candidate

Email: gcoles11@scu.edu.au

Phone (02) 6624 1163

This research has been approved by the Human Research Ethics Committee at Southern Cross University. The approval number ECN-09-114.

If you have concerns about the ethical conduct of this research or the researchers.

Write to the following:

The Ethics Complaints Officer

Southern Cross University

PO Box 157

Lismore NSW 2480

sue.kelly@scu.edu.au

All information is confidential and will be handled as soon as possible.

Regards,

George Coles

B.I.T. Honours Candidate

Phone: (02) 6624 1163

Email: gcoles11@scu.edu.au

Web: <http://www.gcoles.com>

Privacy Statement



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Privacy Statement

This Privacy Statement applies to your interactions with this website and discloses our information gathering practices which are set out in accordance with the Privacy Act 1988.

Information Collected

We do not collect identifiable information about you if you only browse this web site. We only record your email address if you send us a message, take part in the survey or post any comments to the guest book.

If you take part in the survey or post messages to the guest book, we record the following information for statistical purposes:

- Your top level domain name (e.g. .com, .edu, .org, .au etc)
- Your IP address
- The pages you accessed
- The date and time you visited the site
- The type of browser you use (e.g. Internet Explorer)

Use of Your Information

We do not share the collected information with other organisations or persons. You may gain access to the information provided by you on this site. You can have us correct any errors in your information or delete the information. To protect your privacy and the privacy of others you must provide evidence of your identity before you can access your information or instruct us to change the information.

Contact Us

If at any time you believe we have not adhered to the principles referred to in this privacy notice or have any other comments, please contact the Site Administrator.

Site Administrator: gcoles11@scu.edu.au

Title Page



**School of Commerce and Management
Lismore Campus**

**George Coles
Bachelor of Information Technology
with Honours - Thesis 2009**

**Supervisors
Dr.Xiangzhu Gao
Dr.William Smart**

**"The Effects of Website Design on
Consumer Trust in e-Commerce"**

Enter

Registration Form



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Survey Login

To ensure that we are collecting valid data a link to the survey will be sent to your email address which will give you access. Your email address is used for validation purposes only.

If you choose to participate in this survey there is no obligation to complete it and you can quit at any time. Your identity will remain anonymous at all times. Please see our privacy statement for details.

The survey should take no longer than 15 minutes to complete.

Please register your details below:

Your Name:

Your email:

[Register](#)

XHTML Email



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Consumer Trust Survey Login

Hi Tester,

My name is George Coles and I am currently writing a thesis in collaboration with my supervisors Dr.Xiangzhu Gao and Dr.William Smart for my "Bachelor of Information Technology with Honours Degree" at Southern Cross University.

The thesis is titled "The Effects of Website Design on Consumer Trust in e-Commerce." The study involves research into the subject and I have chosen to conduct an online survey to collect and evaluate user responses to a questionnaire regarding Web site design components.

Please use the link below to enter the site.

<http://www.gcoles.com/survey/>

There is no obligation to take part in the survey and you can quit at any time during the process. The survey should take no longer than 15mins to complete and your participation will help immensely. The higher the response rate the more accurate the results will be. Your email address will be strictly confidential and is used solely for the purpose of establishing you as an Internet user with an active email service. A full statement of our privacy policy is available on the site.

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The Ethics Complaints Officer
Southern Cross University
PO Box 157
Lismore NSW 2480
sue.kelly@scu.edu.au

All information is confidential and will be handled as soon as possible.

Survey Questionnaire



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Survey Login

There are three parts in this questionnaire.
Please answer all questions in Part 1 and Part 2 on this page.
Then click the Next button to go to Part 3.

Part 1

Please complete the following questions about yourself.

1.1) What is your Gender?

Male	Female
<input type="radio"/>	<input type="radio"/>

1.2) What is your highest level of Education?

High School	TAFE	Undergrad Degree	Post Grad Degree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

1.3) What is your level of Computer Skills?

Novice	Beginner	Intermediate	Advanced	Expert
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

1.4) What is your level of understanding of Web-Technologies?

Novice	Beginner	Intermediate	Advanced	Expert
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

1.5) How many years of experience do you have in Web Browsing?

0-1 yrs	2-3 yrs	4-5 yrs	6-7 yrs	8-9 yrs	10-11 yrs	12+ yrs
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

1.6) What is your Age Group?

18-25 yrs	26-35 yrs	36-45 yrs	46-55 yrs	56-65 yrs	66-75 yrs	75+ yrs
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Survey Questionnaire (cont)

1.7) I generally place trust in sales assistants when shopping.

Strongly Disagree						Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

1.8) I generally place trust in the Web sites I visit.

Strongly Disagree						Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

1.9) I don't have concerns in giving my credit card details to Web sites to make a purchase.

Strongly Disagree						Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

1.10) I generally place trust in the Web sites recommended by word of mouth.

Strongly Disagree						Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 2

How often would you check for the following Web site components and features before making a purchase?

	Always						Never	
2.1) Privacy Statements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	?
2.2) Contact Information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	?
2.3) Buyer Testimonials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	?
2.4) Guest Books	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	?
2.5) User Forums	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	?
2.6) E-Trust Certificates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	?
2.7) Ease of Navigation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	?
2.8) Absence of Errors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	?
2.9) Visual Design	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	?

Survey Questionnaire (cont)

2.10) Product Branding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	?
2.11) Money Back Guarantees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	?
2.12) Order Tracking Facilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	?
2.13) After Sales Support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	?
2.14) Multiple Payment Methods	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	?
2.15) Images of Staff and Premises	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	?
2.16) Payment Tracking Facilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	?
2.17) Delivery Costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	?
2.18) Location Maps	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	?
2.19) Assistance via Skype	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	?
2.20) Assistance via Telephone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	?
2.21) Assistance via Email	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	?

Next

Survey Questionnaire (cont)



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Part 3

Please read the following list and think carefully before your selection. Click on the items in the order of importance in your opinion (from the most important to the least important).

You only need to click on the items that are important to you. If an important item is not present in the list click the "Other" item to make an entry.

To make changes, you can click on an item in the right-hand list to remove it, or click on the "Reset" button to start again.

<div><div>Privacy Statements</div><div>Contact Information</div><div>Buyer Testimonials</div><div>Guest Books</div><div>User Forums</div><div>E-Trust Certificates</div><div>Ease of Navigability</div><div>Absence of Errors</div><div>Visual Design</div><div>Product Branding</div><div>Money Back Guarantees</div><div>Order Tracking Facilities</div><div>After Sales Support</div><div>Multiple Payment Methods</div><div>Images of Staff and Premises</div></div>	
--	--

Survey Questionnaire (cont)

Payment Tracking Facilities	
Delivery Costs	
Location Maps	
Assistance via Skype	
Assistance via Telephone	
Assistance via Email	
Other	

Survey created by George Coles
Thank you for your participation!

Tell a Friend



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**Thank you for taking part in the survey.
Your responses have now been entered.**

**If you know any one else who may also like to participate.
Please complete the following form and click the submit button.**

Your Name: *

Your email: *

Your Message:

Recievers Name: *

Recievers email: *

* Required Fields

If you would like to be notified of the results please check the box below and click the submit button.

☐ **Notify me when the results are available.**

Appendix B: Statistics

Frequency Tables for Trust Measures

Shop Assistants					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	10	3.7	3.7	3.7
	2	35	12.9	12.9	16.5
	3	70	25.7	25.7	42.3
	4	67	24.6	24.6	66.9
	5	66	24.3	24.3	91.2
	6	22	8.1	8.1	99.3
	7	2	.7	.7	100.0
Total		272	100.0	100.0	

Websites					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	11	4.0	4.0	4.0
	2	31	11.4	11.4	15.4
	3	82	30.1	30.1	45.6
	4	82	30.1	30.1	75.7
	5	50	18.4	18.4	94.1
	6	15	5.5	5.5	99.6
	7	1	.4	.4	100.0
Total		272	100.0	100.0	

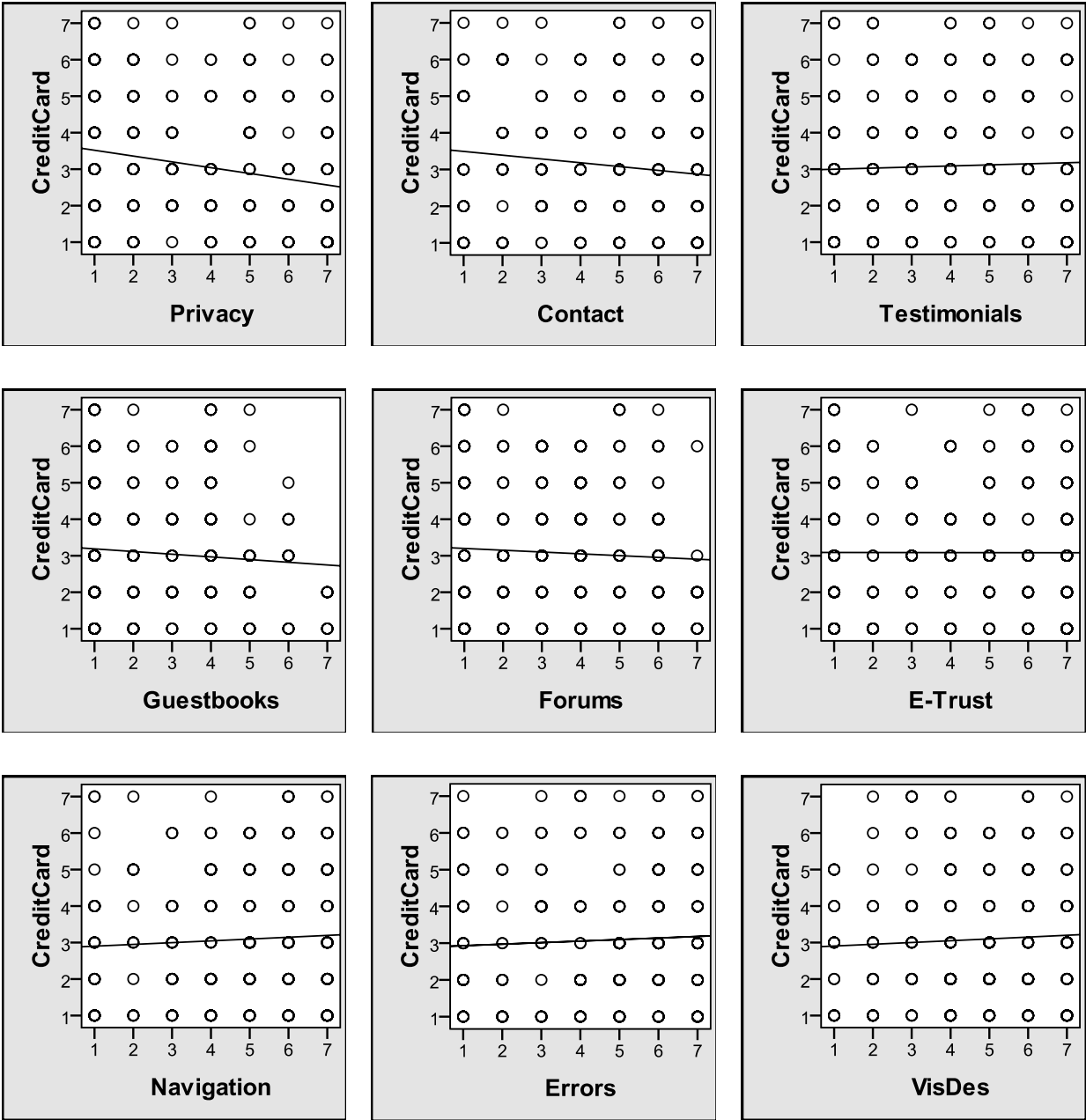
Credit Card					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	63	23.2	23.2	23.2
	2	61	22.4	22.4	45.6
	3	47	17.3	17.3	62.9
	4	37	13.6	13.6	76.5
	5	29	10.7	10.7	87.1
	6	25	9.2	9.2	96.3
	7	10	3.7	3.7	100.0
	Total	272	100.0	100.0	

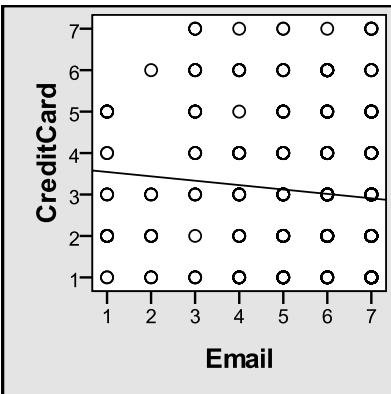
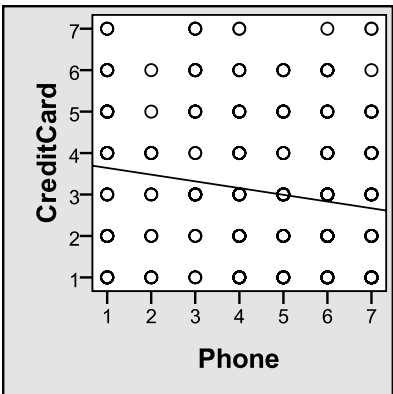
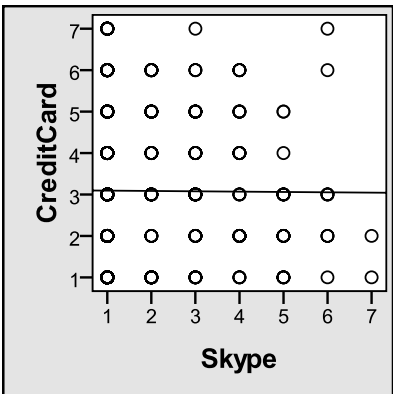
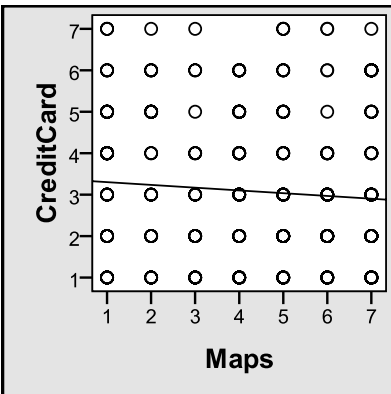
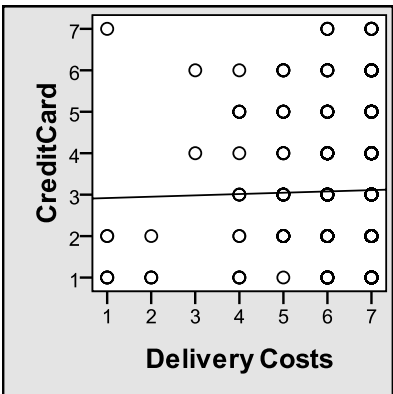
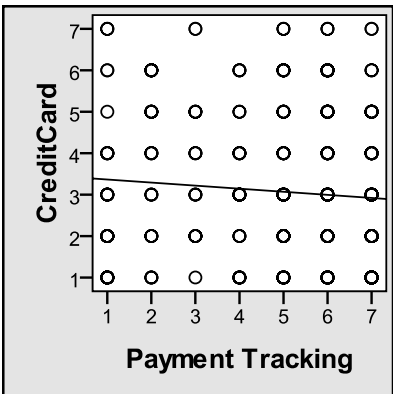
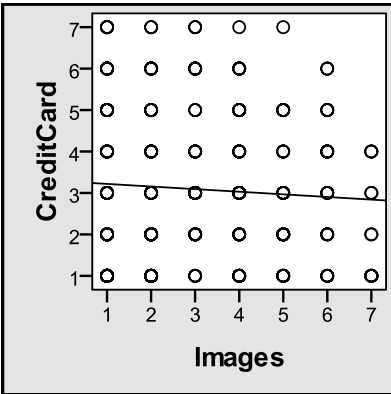
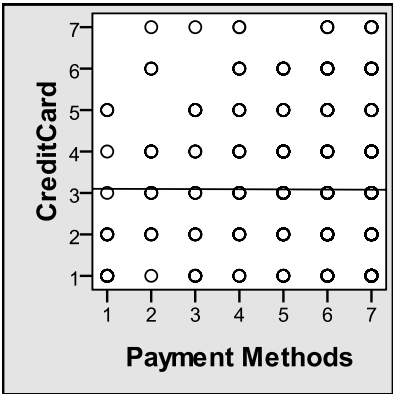
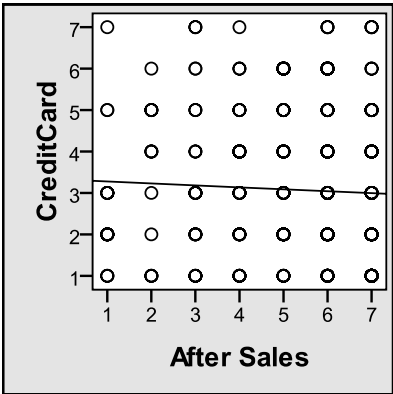
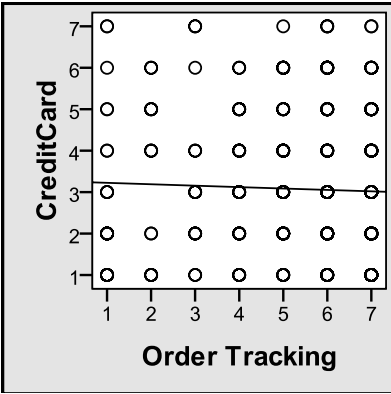
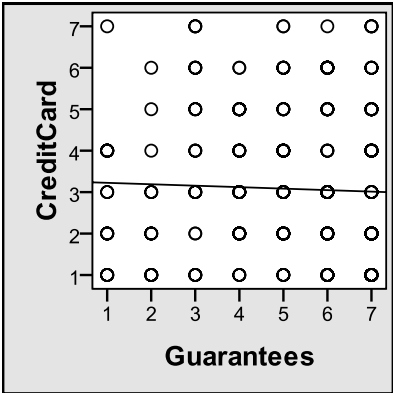
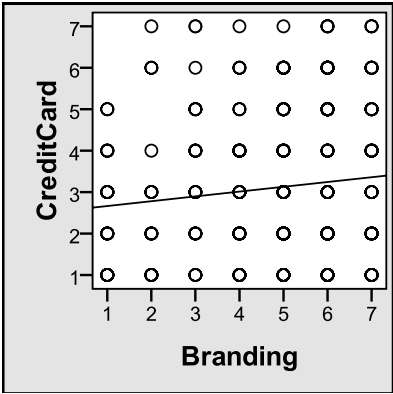
Frequency Tables for Trust Measures (cont)

Word of Mouth					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	9	3.3	3.3	3.3
	2	39	14.3	14.3	17.6
	3	51	18.8	18.8	36.4
	4	65	23.9	23.9	60.3
	5	69	25.4	25.4	85.7
	6	30	11.0	11.0	96.7
	7	9	3.3	3.3	100.0
	Total	272	100.0	100.0	

Scatter Plots of Response vs. Explanatory variables

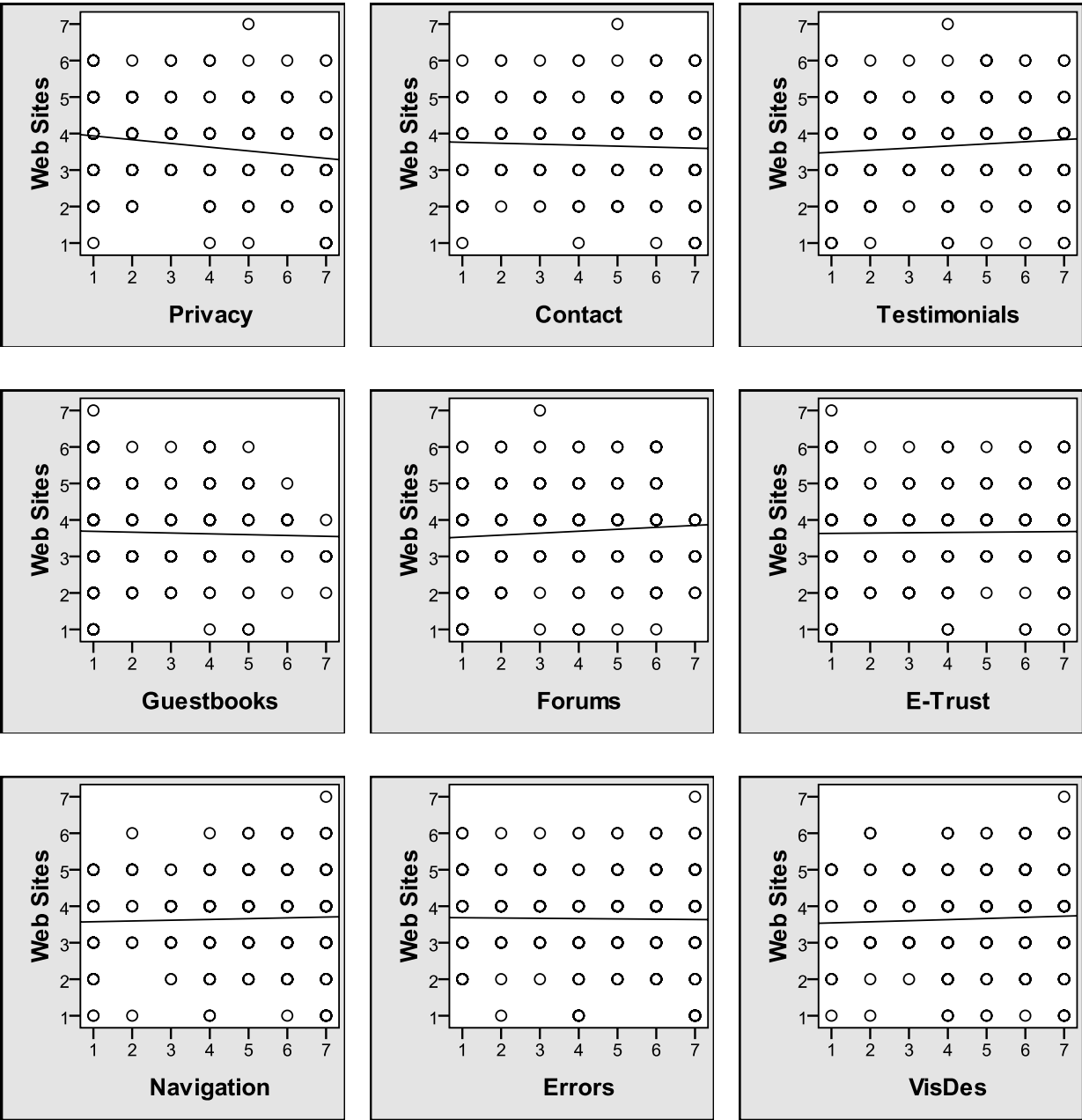
Trust in giving Credit Card details to Websites

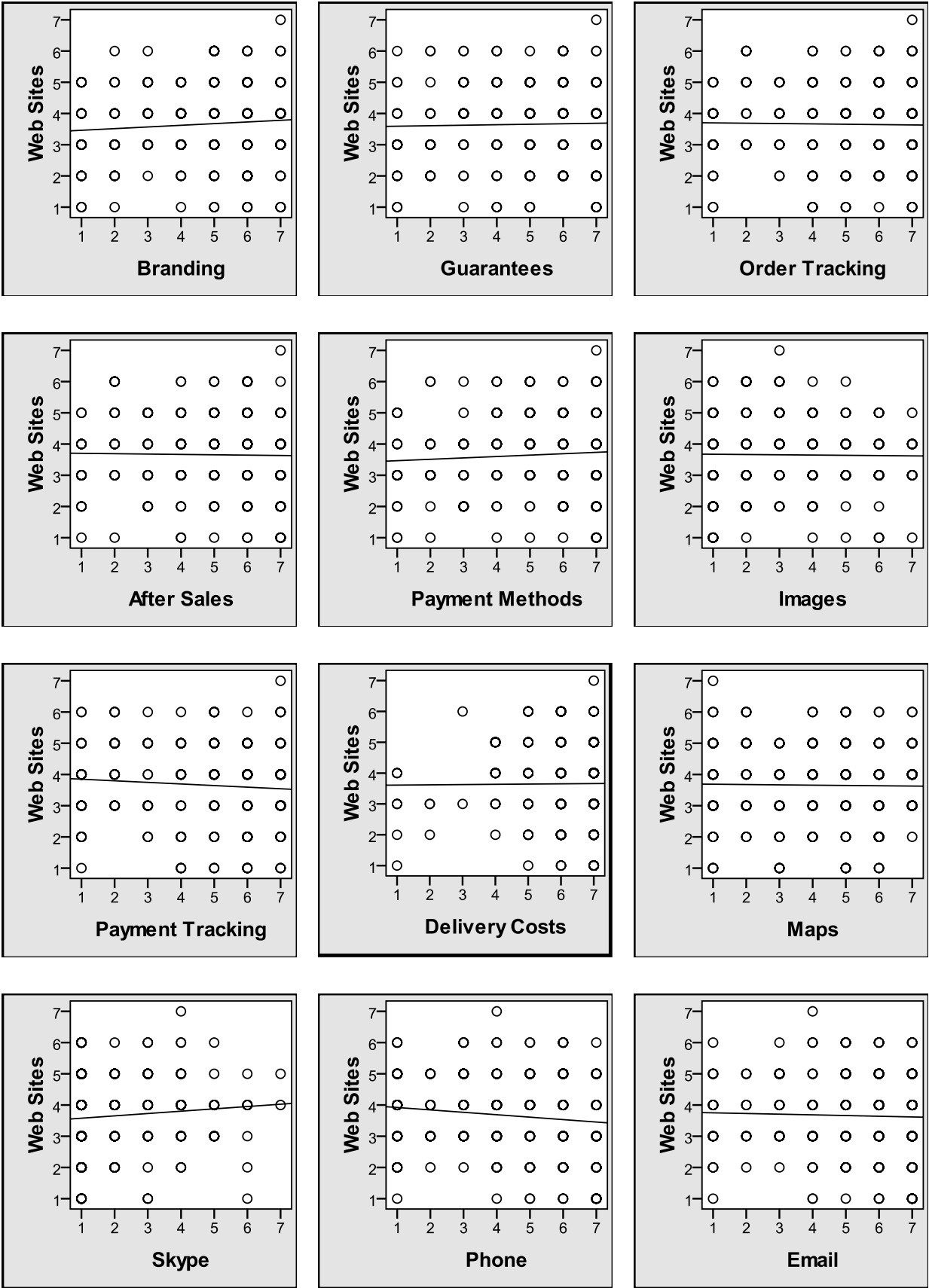




Scatter Plots of Trust vs. Explanatory variables (cont.)

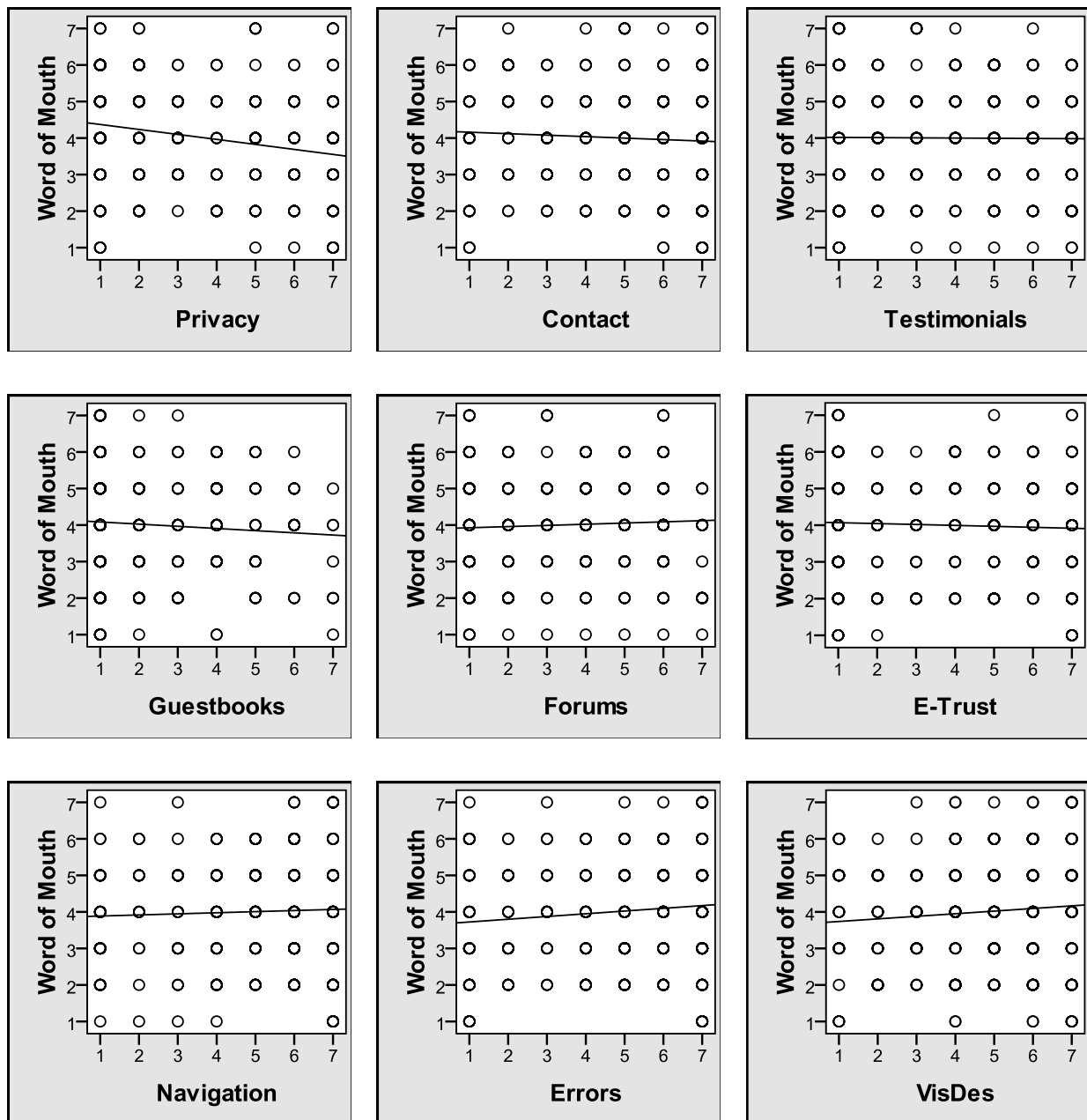
Trust in Websites

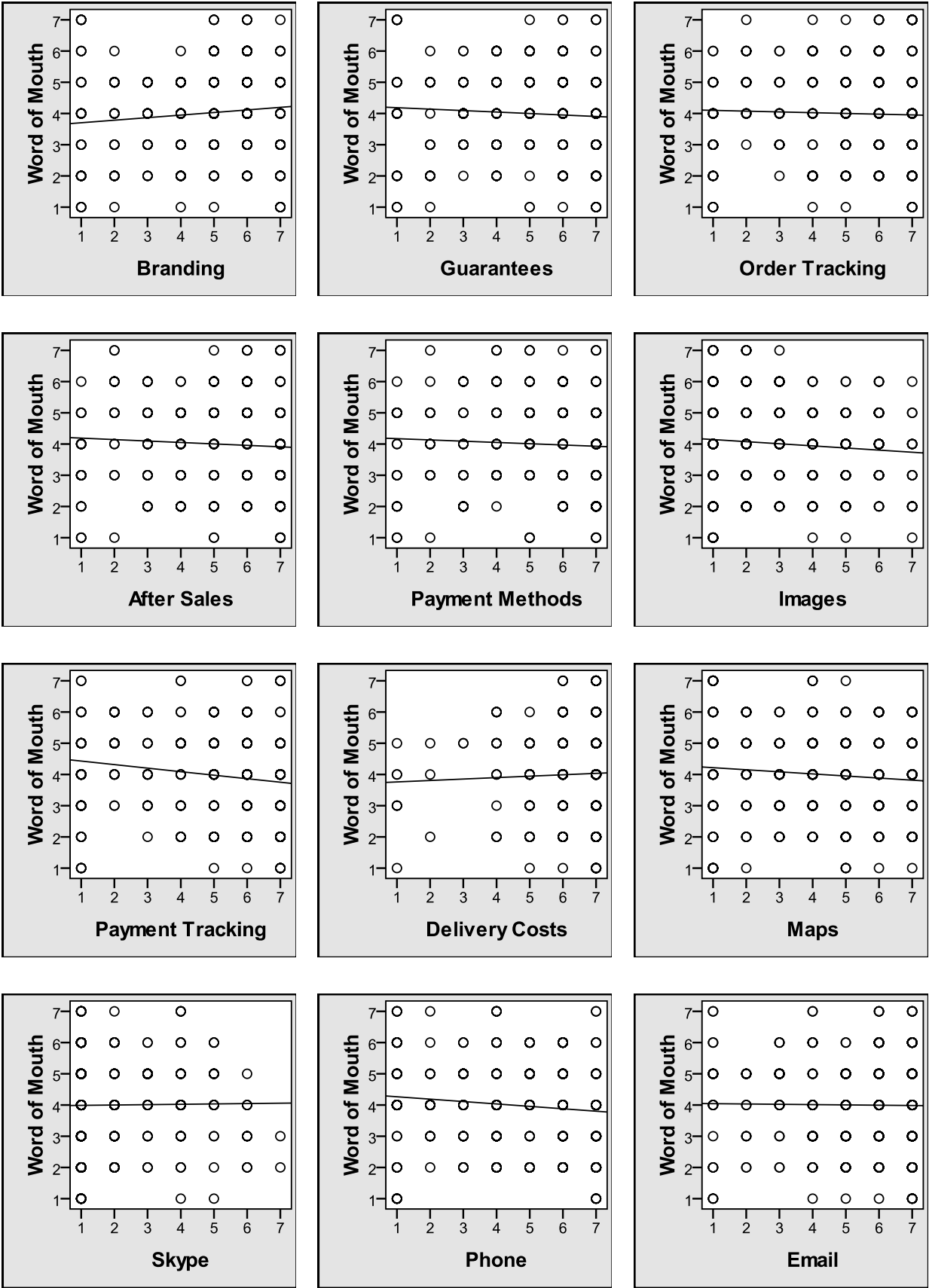


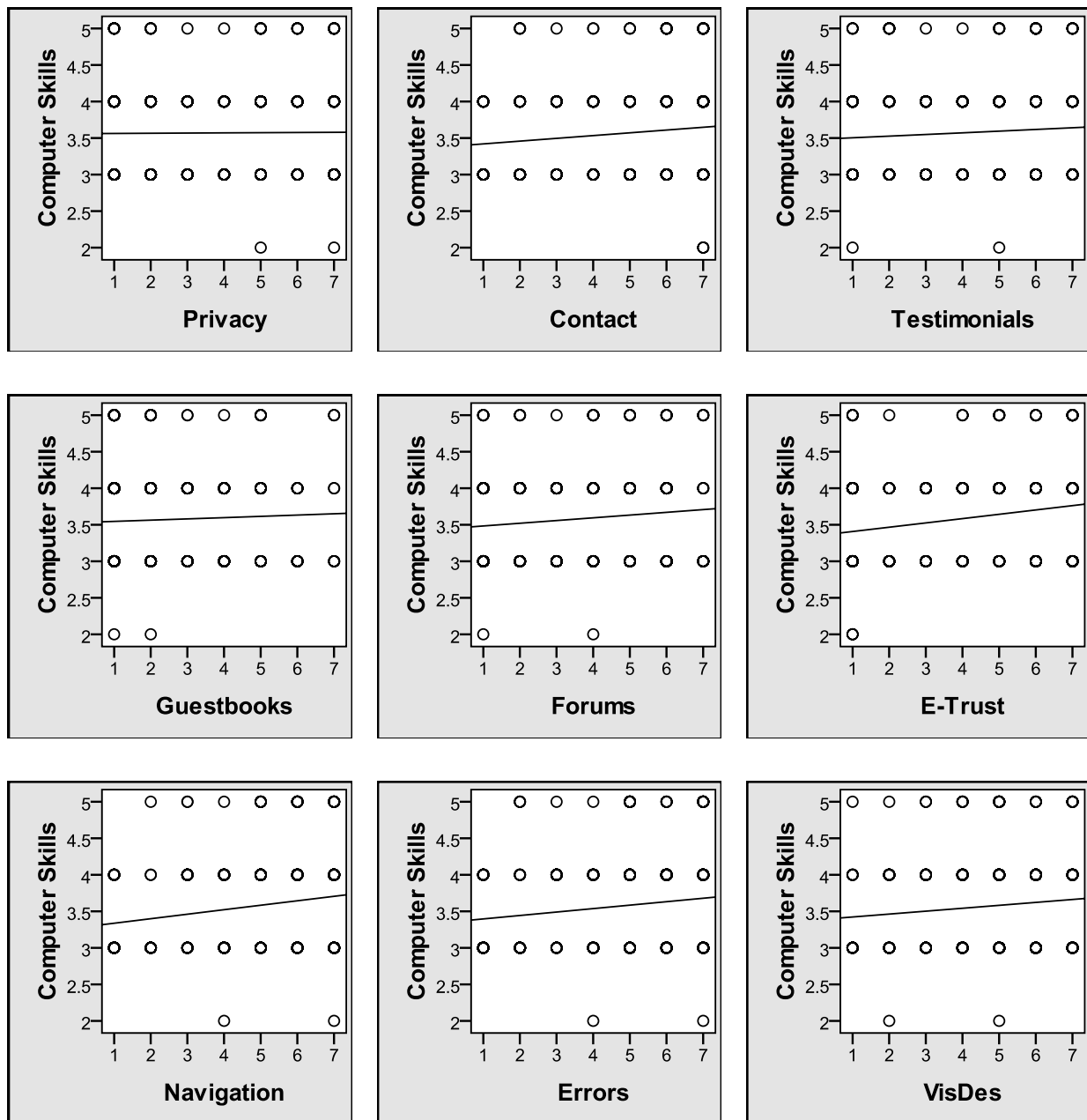


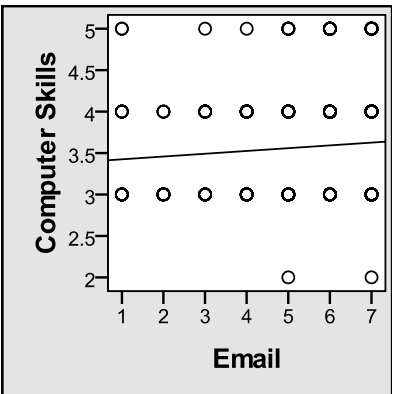
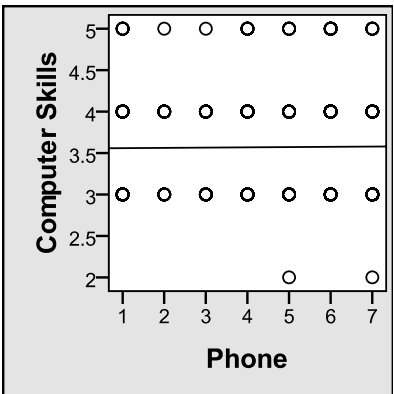
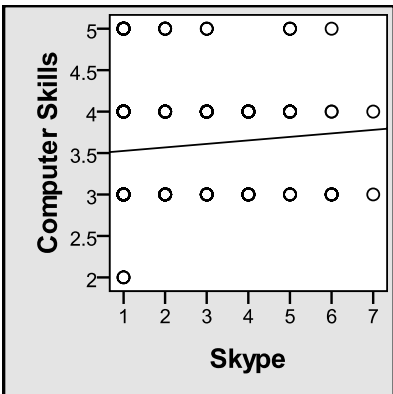
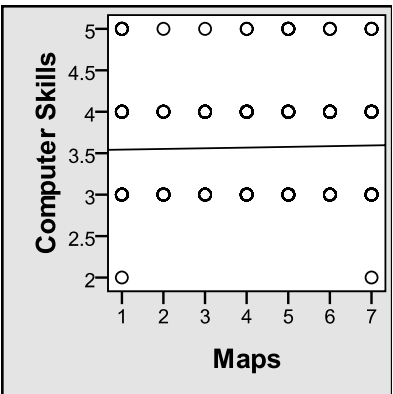
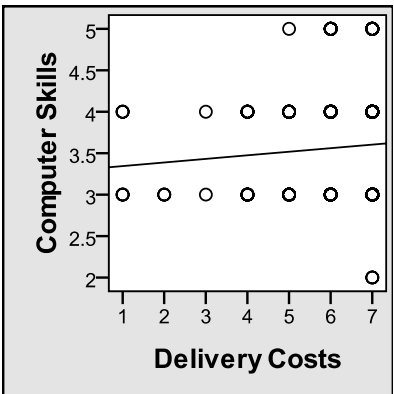
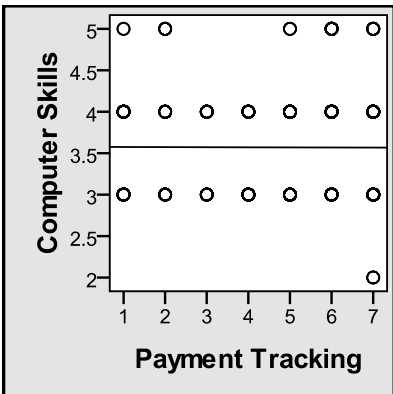
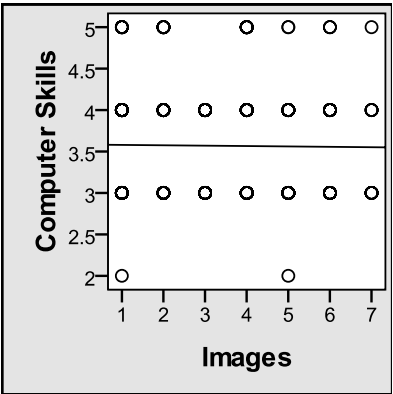
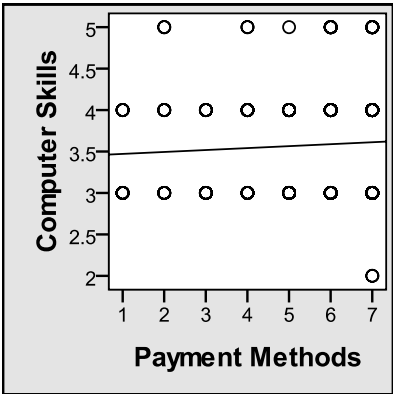
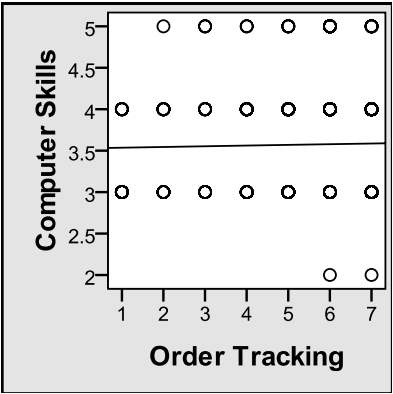
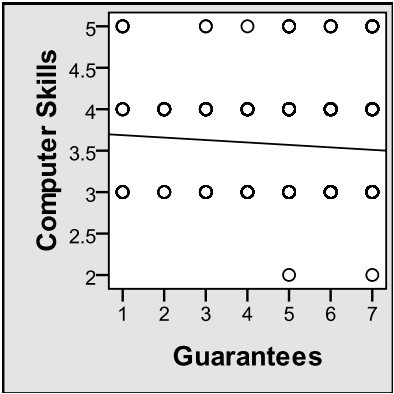
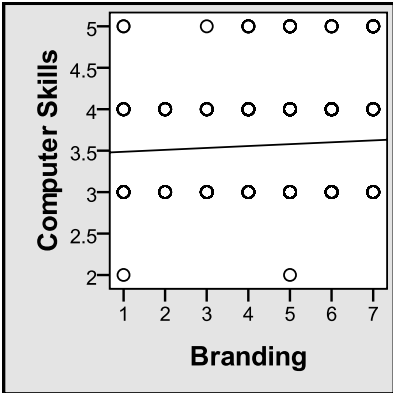
Scatter Plots of Response vs. Explanatory variables (cont.)

Trust in Websites recommended by Word of Mouth



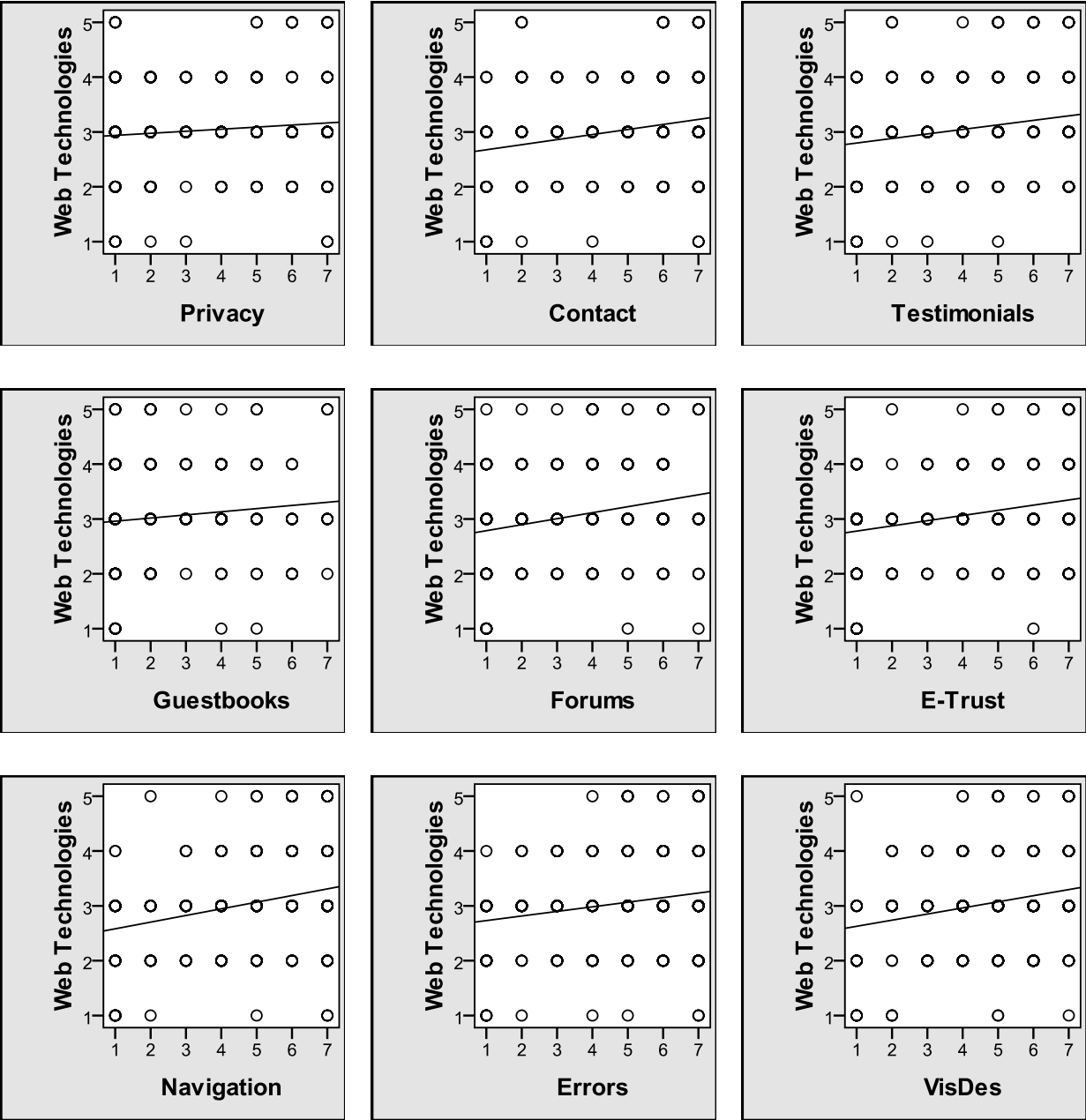


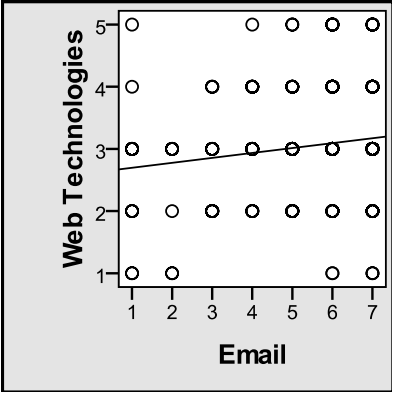
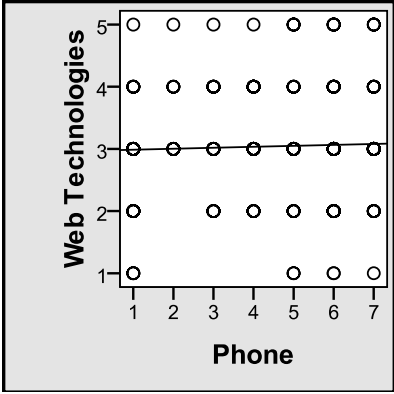
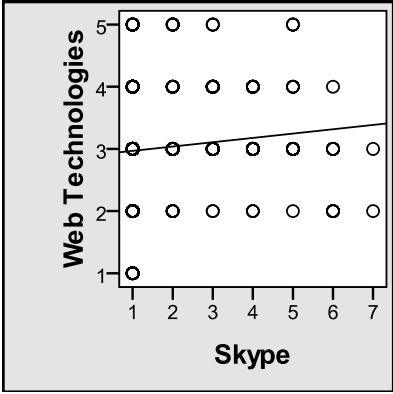
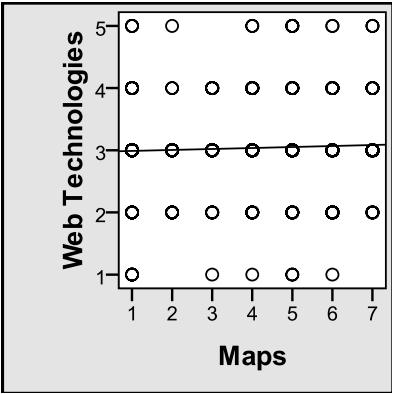
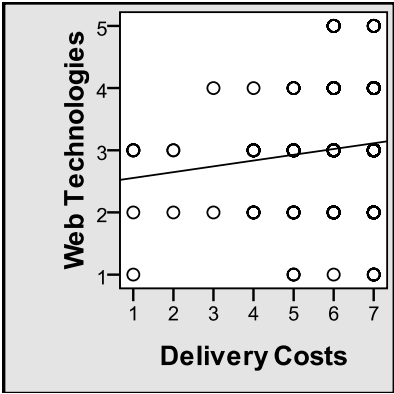
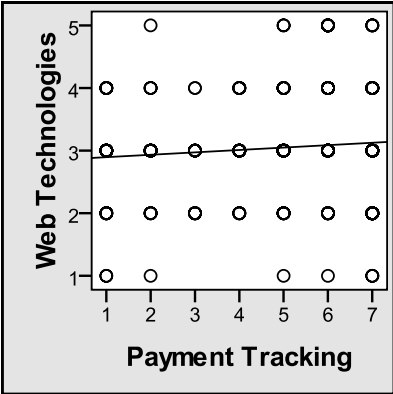
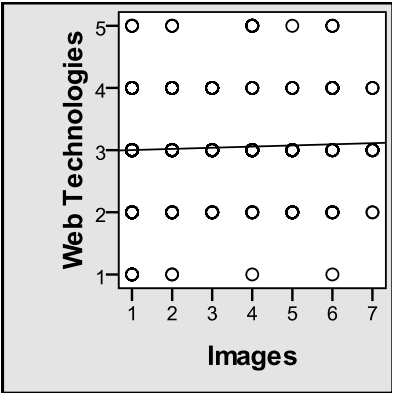
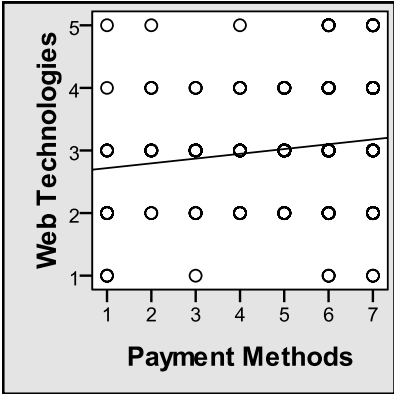
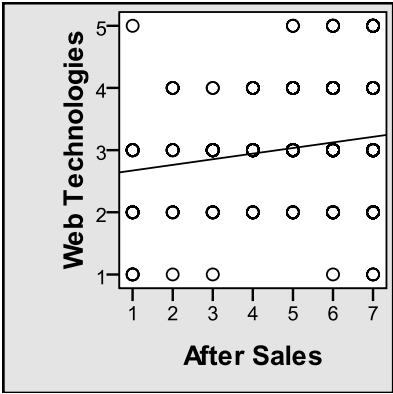
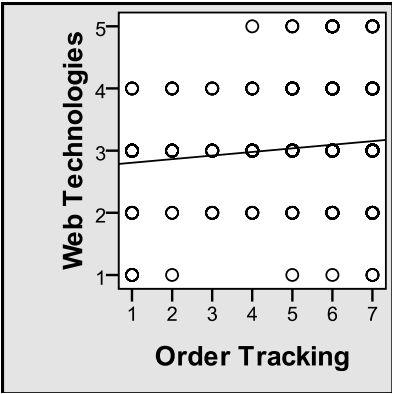
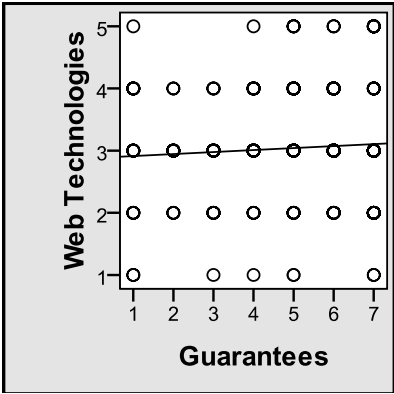
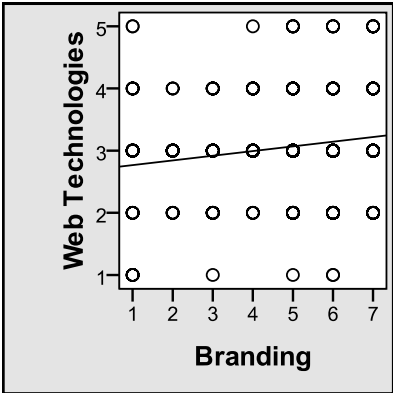
Scatter Plots of Response vs. Explanatory variables (cont.)**Level of Computer Skills**



Scatter Plots of Response vs. Explanatory variables (cont.)

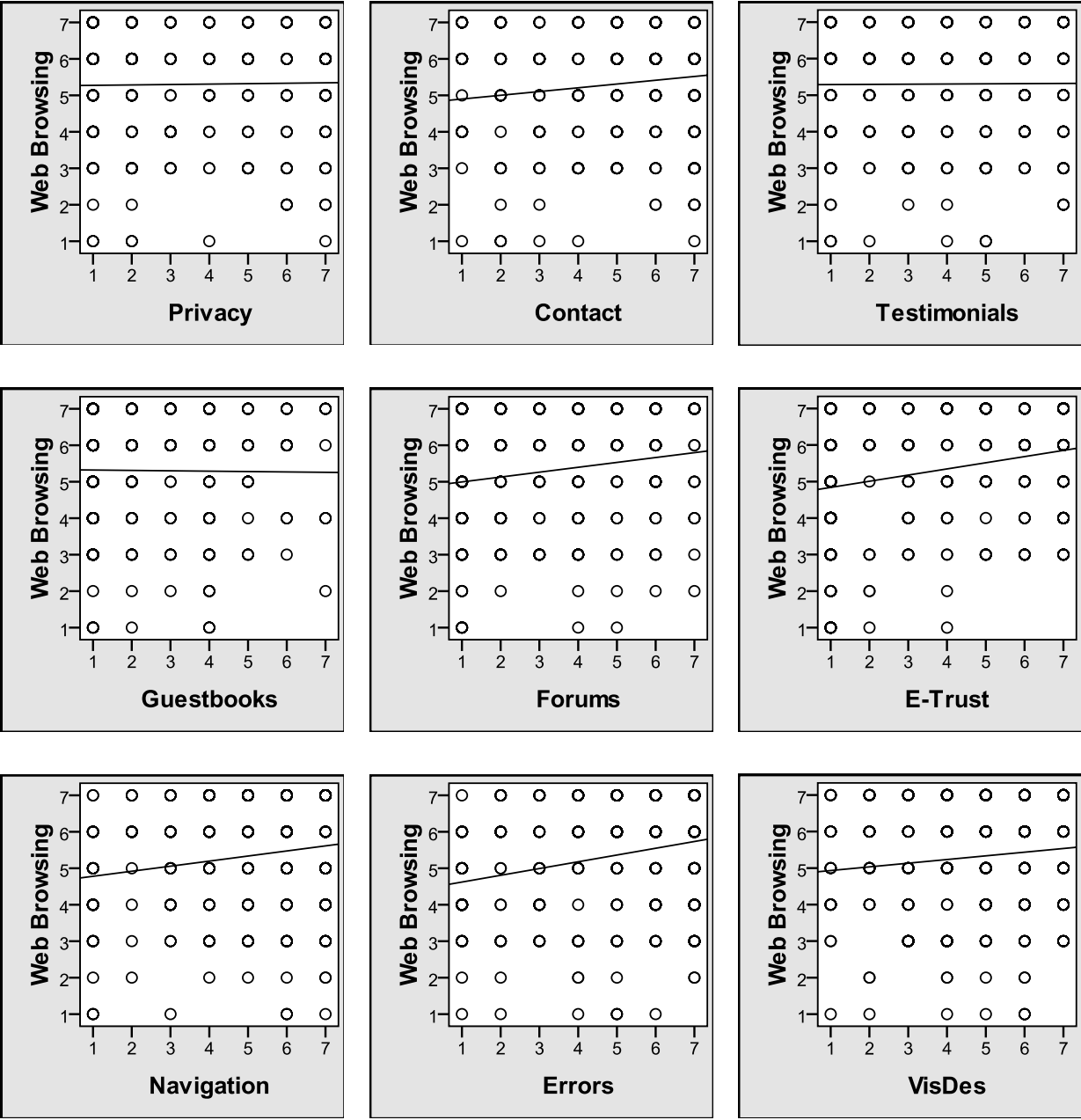
Understanding of Web Technologies

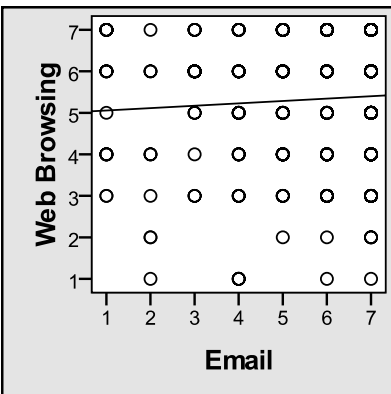
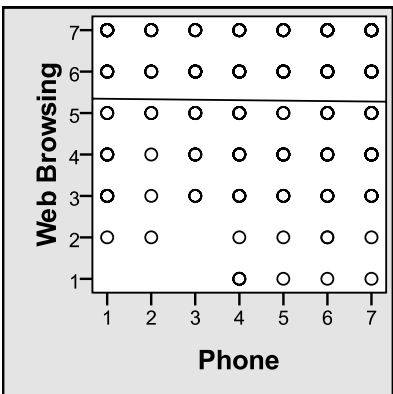
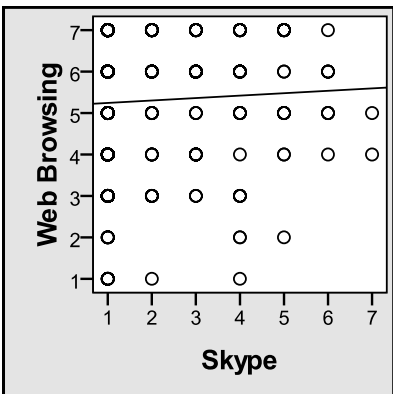
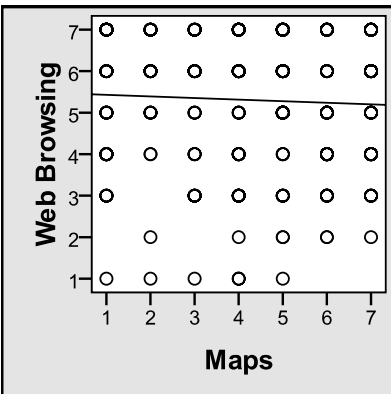
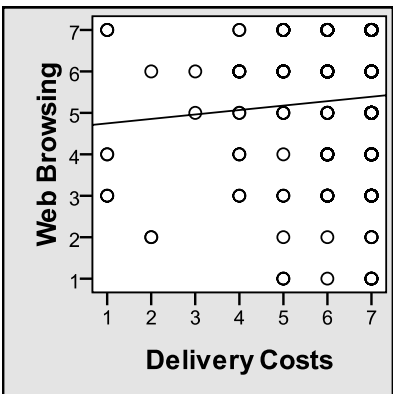
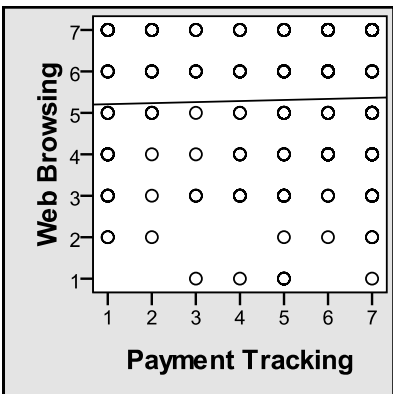
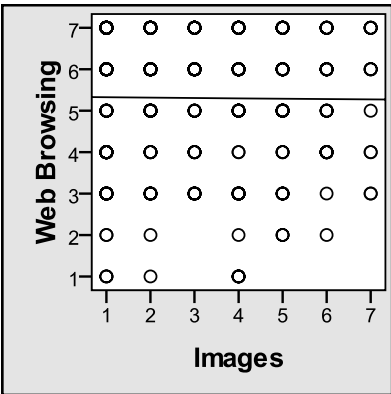
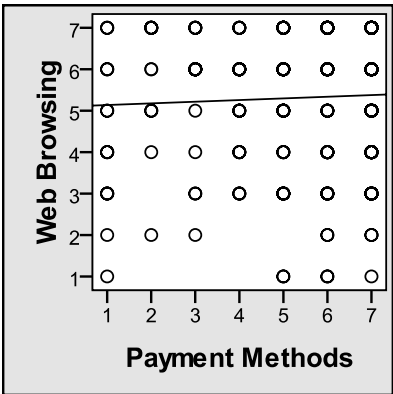
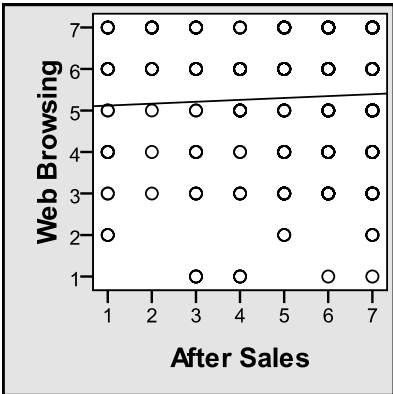
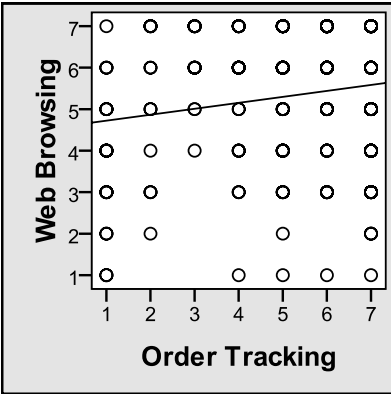
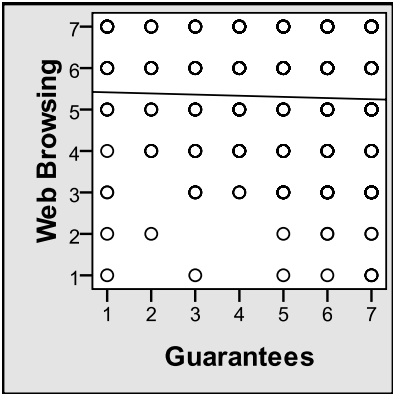
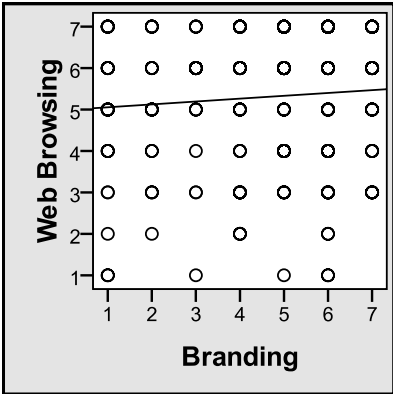




Scatter Plots of Response vs. Explanatory variables (cont.)

Experience with Web Browsing





Frequency Tables for Experience Measures

Computer Skills					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	2	.7	.7	.7
	3	136	50.0	50.0	50.7
	4	111	40.8	40.8	91.5
	5	23	8.5	8.5	100.0
	Total	272	100.0	100.0	

Web Technologies					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	8	2.9	2.9	2.9
	2	53	19.5	19.5	22.4
	3	145	53.3	53.3	75.7
	4	52	19.1	19.1	94.9
	5	14	5.1	5.1	100.0
	Total	272	100.0	100.0	

Web Browsing					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	6	2.2	2.2	2.2
	2	7	2.6	2.6	4.8
	3	33	12.1	12.1	16.9
	4	38	14.0	14.0	30.9
	5	38	14.0	14.0	44.9
	6	68	25.0	25.0	69.9
	7	82	30.1	30.1	100.0
	Total	272	100.0	100.0	

Frequency Tables for Demographic Measures

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	90	33.1	33.1	33.1
	2	182	66.9	66.9	100.0
	Total	272	100.0	100.0	

Education					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	26	9.6	9.6	9.6
	2	51	18.8	18.8	28.3
	3	120	44.1	44.1	72.4
	4	75	27.6	27.6	100.0
	Total	272	100.0	100.0	

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	57	21.0	21.0	21.0
	2	63	23.2	23.2	44.1
	3	71	26.1	26.1	70.2
	4	57	21.0	21.0	91.2
	5	22	8.1	8.1	99.3
	6	2	.7	.7	100.0
	Total	272	100.0	100.0	

Frequency Tables for Explanatory Measures

Privacy					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	63	23.2	23.2	23.2
	2	49	18.0	18.0	41.2
	3	26	9.6	9.6	50.7
	4	21	7.7	7.7	58.5
	5	36	13.2	13.2	71.7
	6	29	10.7	10.7	82.4
	7	48	17.6	17.6	100.0
	Total	272	100.0	100.0	

Contact Information					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	22	8.1	8.1	8.1
	2	23	8.5	8.5	16.5
	3	23	8.5	8.5	25.0
	4	26	9.6	9.6	34.6
	5	45	16.5	16.5	51.1
	6	50	18.4	18.4	69.5
	7	83	30.5	30.5	100.0
	Total	272	100.0	100.0	

Testimonials					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	47	17.3	17.3	17.3
	2	36	13.2	13.2	30.5
	3	35	12.9	12.9	43.4
	4	32	11.8	11.8	55.1
	5	51	18.8	18.8	73.9
	6	36	13.2	13.2	87.1
	7	35	12.9	12.9	100.0
	Total	272	100.0	100.0	

Frequency Tables for Explanatory Measures (cont.)

Guestbooks					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	128	47.1	47.1	47.1
	2	44	16.2	16.2	63.2
	3	24	8.8	8.8	72.1
	4	39	14.3	14.3	86.4
	5	18	6.6	6.6	93.0
	6	12	4.4	4.4	97.4
	7	7	2.6	2.6	100.0
	Total	272	100.0	100.0	

Forums					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	74	27.2	27.2	27.2
	2	37	13.6	13.6	40.8
	3	33	12.1	12.1	52.9
	4	45	16.5	16.5	69.5
	5	34	12.5	12.5	82.0
	6	36	13.2	13.2	95.2
	7	13	4.8	4.8	100.0
	Total	272	100.0	100.0	

E-Trust					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	87	32.0	32.0	32.0
	2	19	7.0	7.0	39.0
	3	22	8.1	8.1	47.1
	4	27	9.9	9.9	57.0
	5	30	11.0	11.0	68.0
	6	36	13.2	13.2	81.3
	7	51	18.8	18.8	100.0
	Total	272	100.0	100.0	

Frequency Tables for Explanatory Measures (cont.)

Navigation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	28	10.3	10.3	10.3
	2	13	4.8	4.8	15.1
	3	21	7.7	7.7	22.8
	4	38	14.0	14.0	36.8
	5	54	19.9	19.9	56.6
	6	64	23.5	23.5	80.1
	7	54	19.9	19.9	100.0
	Total	272	100.0	100.0	

Errors					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	32	11.8	11.8	11.8
	2	20	7.4	7.4	19.1
	3	21	7.7	7.7	26.8
	4	32	11.8	11.8	38.6
	5	49	18.0	18.0	56.6
	6	58	21.3	21.3	77.9
	7	60	22.1	22.1	100.0
	Total	272	100.0	100.0	

Visual Design					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	16	5.9	5.9	5.9
	2	19	7.0	7.0	12.9
	3	25	9.2	9.2	22.1
	4	51	18.8	18.8	40.8
	5	60	22.1	22.1	62.9
	6	62	22.8	22.8	85.7
	7	39	14.3	14.3	100.0
	Total	272	100.0	100.0	

Frequency Tables for Explanatory Measures (cont.)

Branding					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	24	8.8	8.8	8.8
	2	19	7.0	7.0	15.8
	3	22	8.1	8.1	23.9
	4	40	14.7	14.7	38.6
	5	66	24.3	24.3	62.9
	6	66	24.3	24.3	87.1
	7	35	12.9	12.9	100.0
	Total	272	100.0	100.0	

Guarantees					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	20	7.4	7.4	7.4
	2	16	5.9	5.9	13.2
	3	25	9.2	9.2	22.4
	4	34	12.5	12.5	34.9
	5	44	16.2	16.2	51.1
	6	63	23.2	23.2	74.3
	7	70	25.7	25.7	100.0
	Total	272	100.0	100.0	

Order Tracking					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	24	8.8	8.8	8.8
	2	14	5.1	5.1	14.0
	3	15	5.5	5.5	19.5
	4	29	10.7	10.7	30.1
	5	48	17.6	17.6	47.8
	6	71	26.1	26.1	73.9
	7	71	26.1	26.1	100.0
	Total	272	100.0	100.0	

Frequency Tables for Explanatory Measures (cont.)

After Sales					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	18	6.6	6.6	6.6
	2	13	4.8	4.8	11.4
	3	23	8.5	8.5	19.9
	4	31	11.4	11.4	31.3
	5	45	16.5	16.5	47.8
	6	76	27.9	27.9	75.7
	7	66	24.3	24.3	100.0
	Total	272	100.0	100.0	

Payment Methods					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	17	6.3	6.3	6.3
	2	14	5.1	5.1	11.4
	3	18	6.6	6.6	18.0
	4	26	9.6	9.6	27.6
	5	47	17.3	17.3	44.9
	6	66	24.3	24.3	69.1
	7	84	30.9	30.9	100.0
	Total	272	100.0	100.0	

Images					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	72	26.5	26.5	26.5
	2	50	18.4	18.4	44.9
	3	37	13.6	13.6	58.5
	4	46	16.9	16.9	75.4
	5	33	12.1	12.1	87.5
	6	22	8.1	8.1	95.6
	7	12	4.4	4.4	100.0
	Total	272	100.0	100.0	

Frequency Tables for Explanatory Measures (cont.)

Payment Tracking					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	33	12.1	12.1	12.1
	2	21	7.7	7.7	19.9
	3	16	5.9	5.9	25.7
	4	26	9.6	9.6	35.3
	5	47	17.3	17.3	52.6
	6	62	22.8	22.8	75.4
	7	67	24.6	24.6	100.0
	Total	272	100.0	100.0	

Delivery Costs					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	6	2.2	2.2	2.2
	2	3	1.1	1.1	3.3
	3	2	.7	.7	4.0
	4	12	4.4	4.4	8.5
	5	27	9.9	9.9	18.4
	6	63	23.2	23.2	41.5
	7	159	58.5	58.5	100.0
	Total	272	100.0	100.0	

Maps					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	38	14.0	14.0	14.0
	2	24	8.8	8.8	22.8
	3	26	9.6	9.6	32.4
	4	50	18.4	18.4	50.7
	5	51	18.8	18.8	69.5
	6	43	15.8	15.8	85.3
	7	40	14.7	14.7	100.0
	Total	272	100.0	100.0	

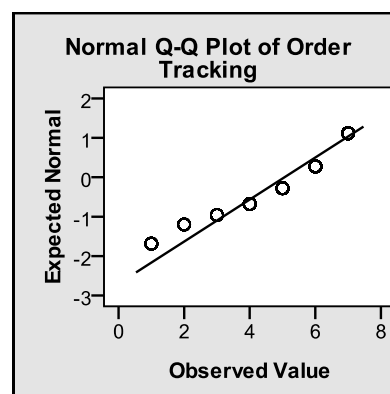
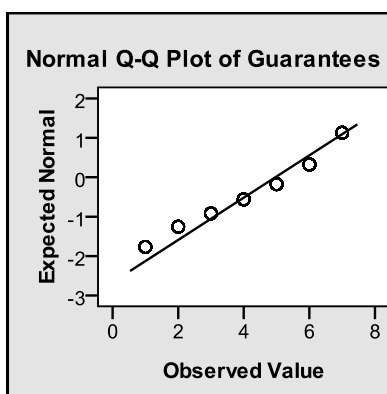
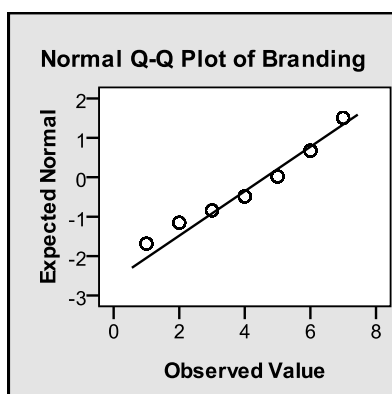
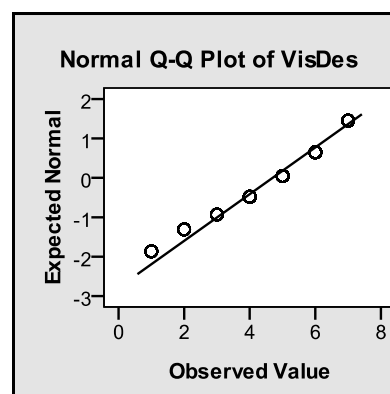
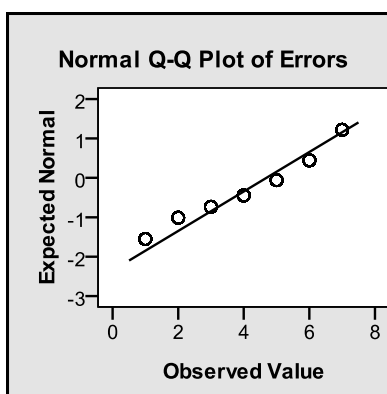
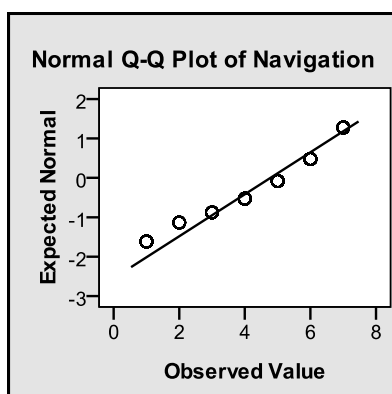
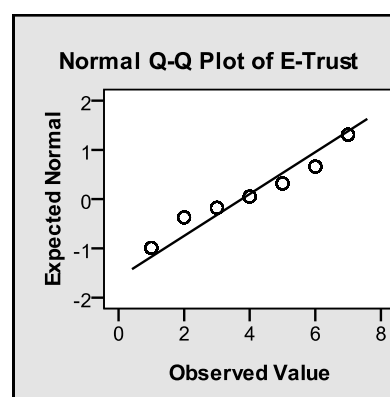
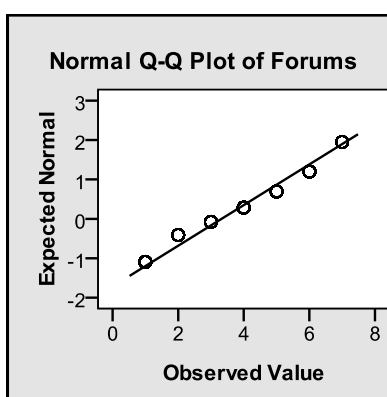
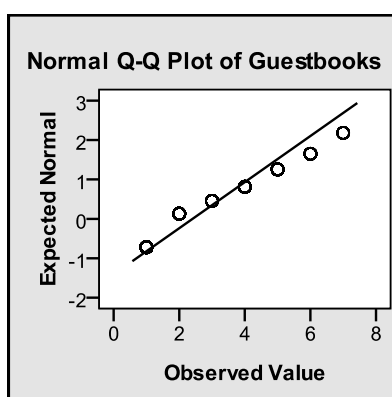
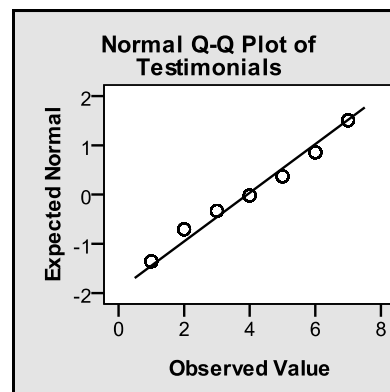
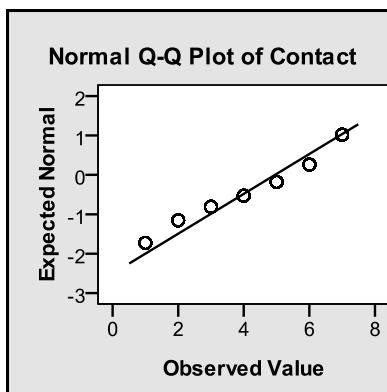
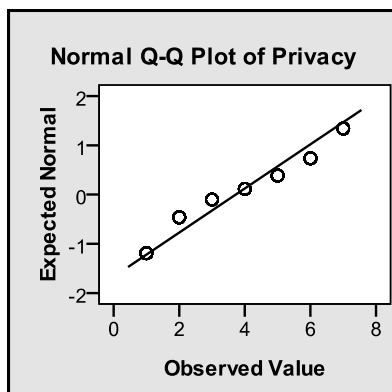
Frequency Tables for Explanatory Measures (cont.)

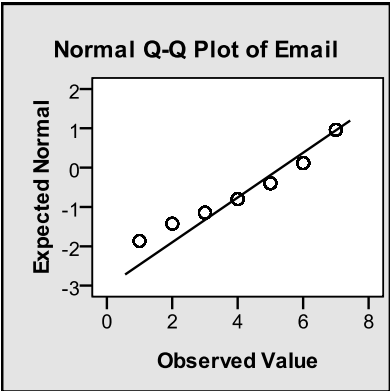
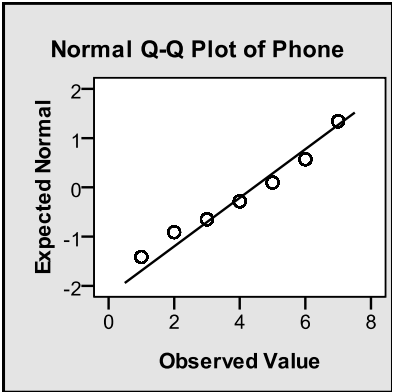
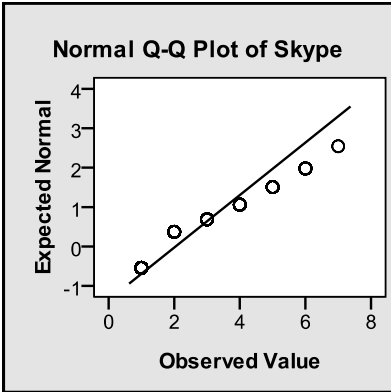
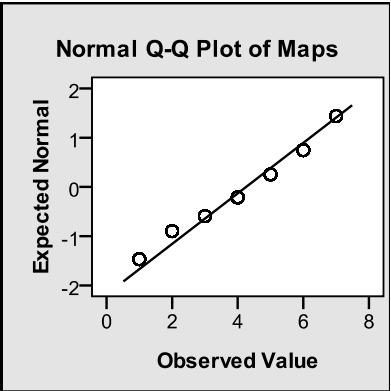
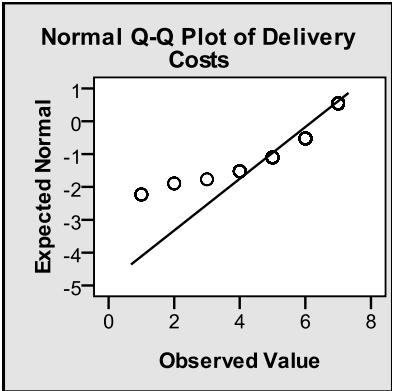
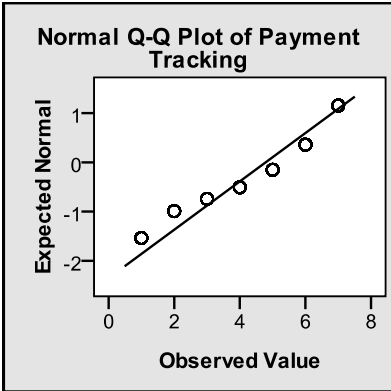
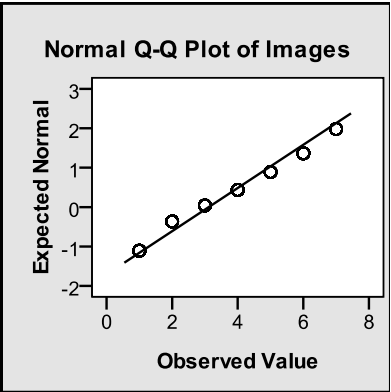
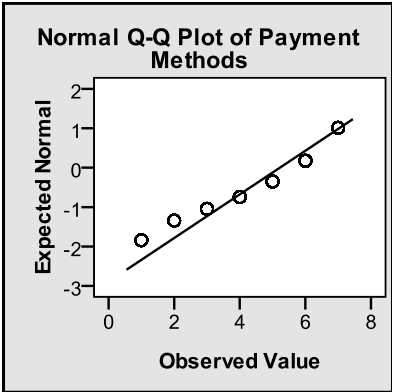
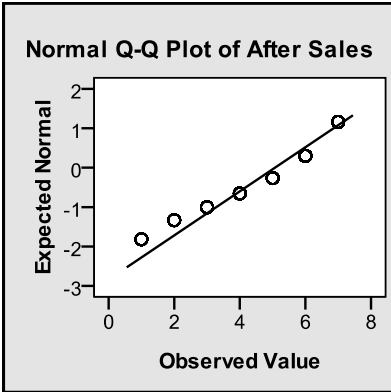
Skype					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	159	58.5	58.5	58.5
	2	33	12.1	12.1	70.6
	3	27	9.9	9.9	80.5
	4	28	10.3	10.3	90.8
	5	15	5.5	5.5	96.3
	6	8	2.9	2.9	99.3
	7	2	.7	.7	100.0
	Total	272	100.0	100.0	

Phone					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	42	15.4	15.4	15.4
	2	14	5.1	5.1	20.6
	3	28	10.3	10.3	30.9
	4	43	15.8	15.8	46.7
	5	39	14.3	14.3	61.0
	6	58	21.3	21.3	82.4
	7	48	17.6	17.6	100.0
	Total	272	100.0	100.0	

Email					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	16	5.9	5.9	5.9
	2	9	3.3	3.3	9.2
	3	18	6.6	6.6	15.8
	4	29	10.7	10.7	26.5
	5	44	16.2	16.2	42.6
	6	65	23.9	23.9	66.5
	7	91	33.5	33.5	100.0
	Total	272	100.0	100.0	

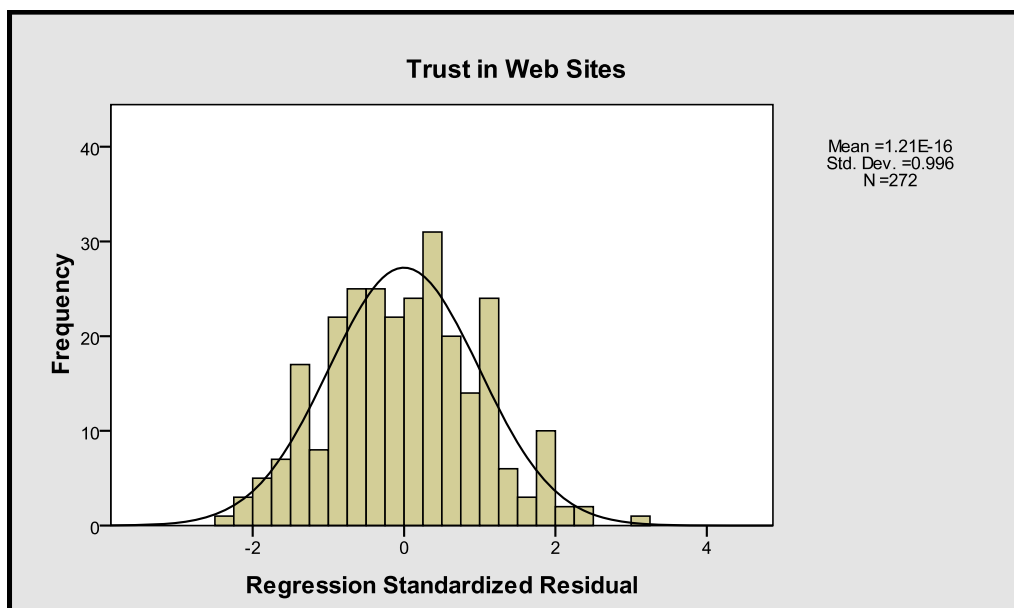
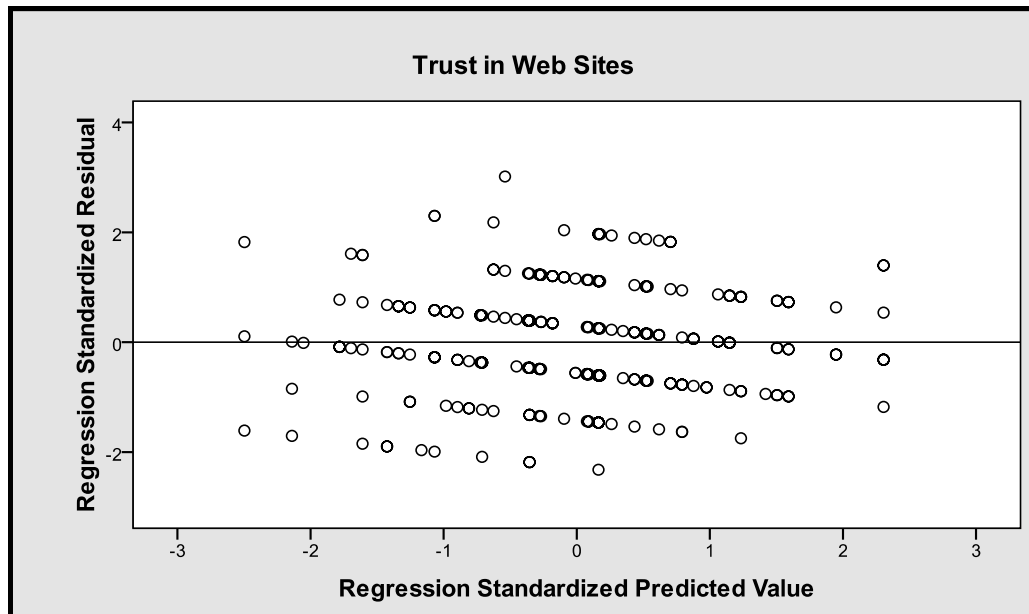
Normality Plots for Explanatory Measures





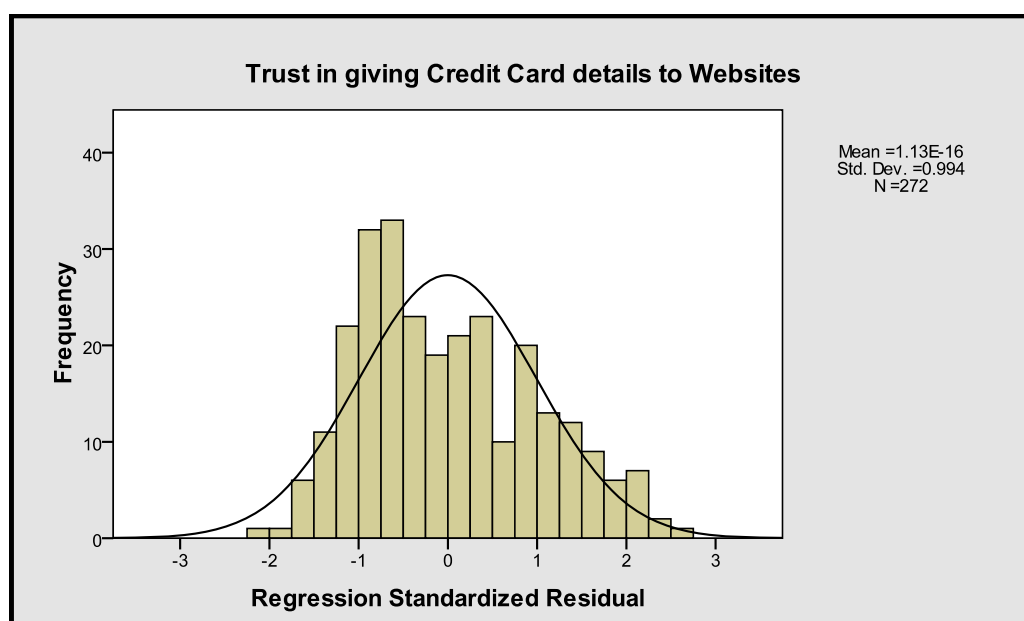
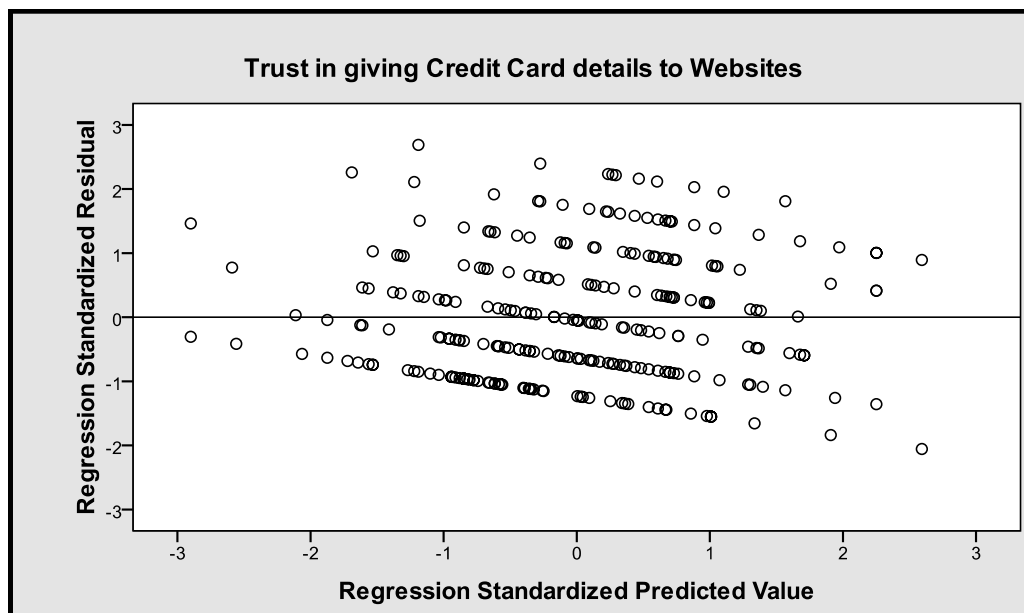
Standardised Residuals of MLR Models (Scatter plots and histograms)

Trust in Websites



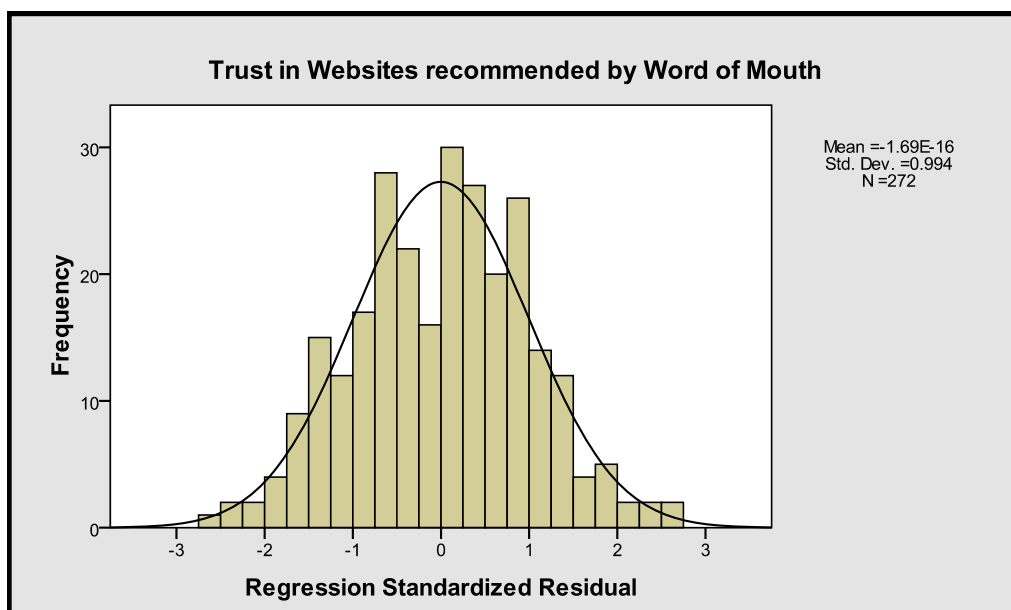
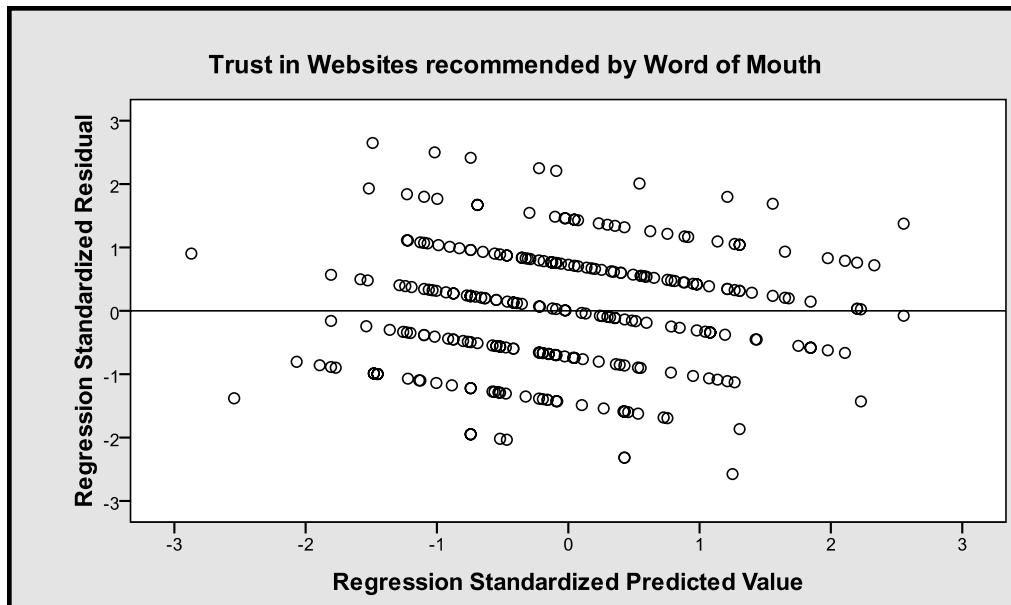
Standardised Residuals of MLR Models (cont.)

Trust in giving Credit Card details to Websites



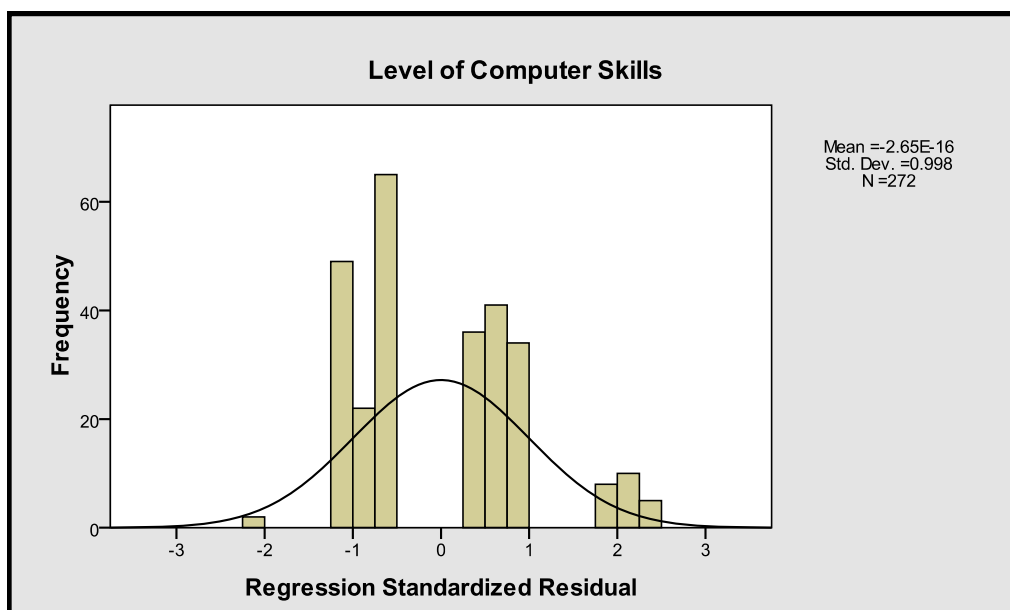
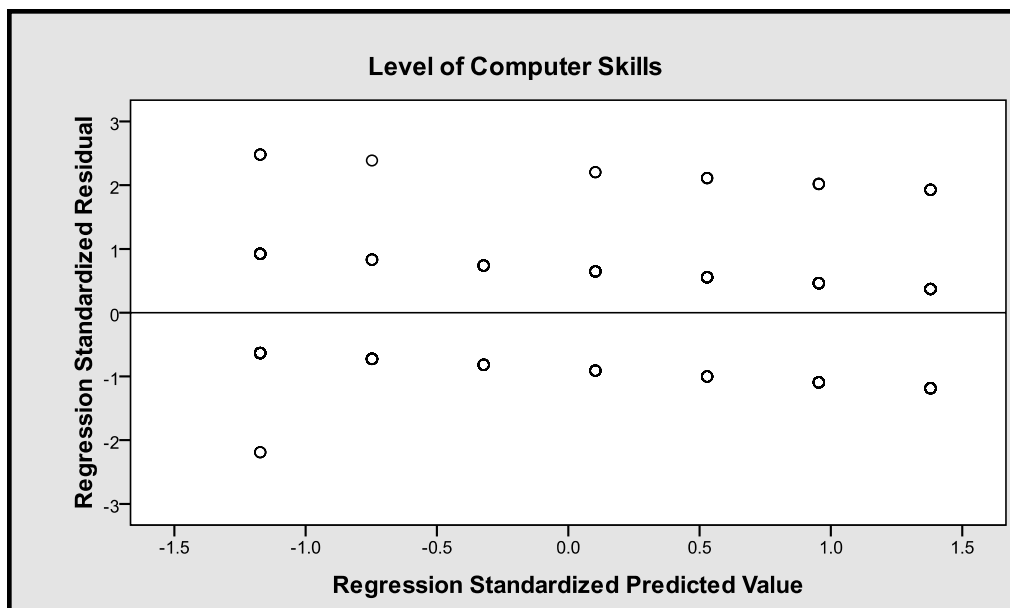
Standardised Residuals of MLR Models (cont.)

Trust in Websites Recommended by Word of Mouth



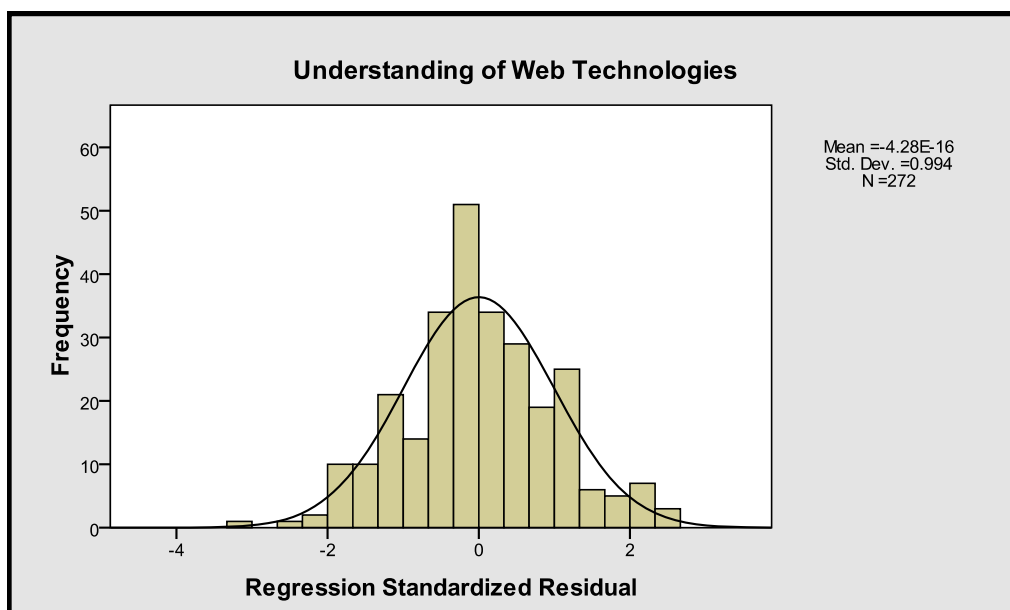
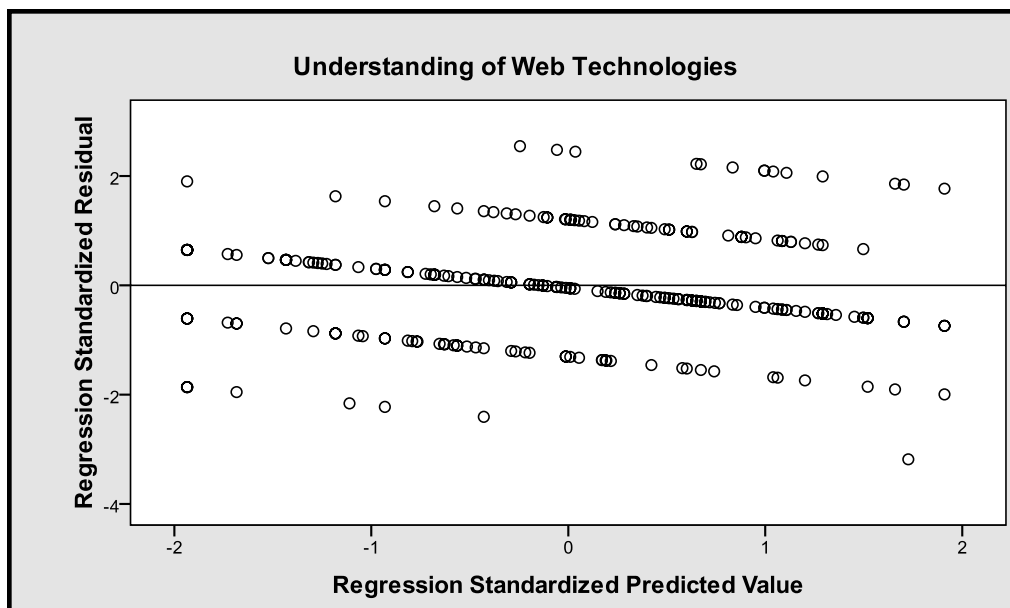
Standardised Residuals of MLR Models (cont.)

Level of Computer Skills



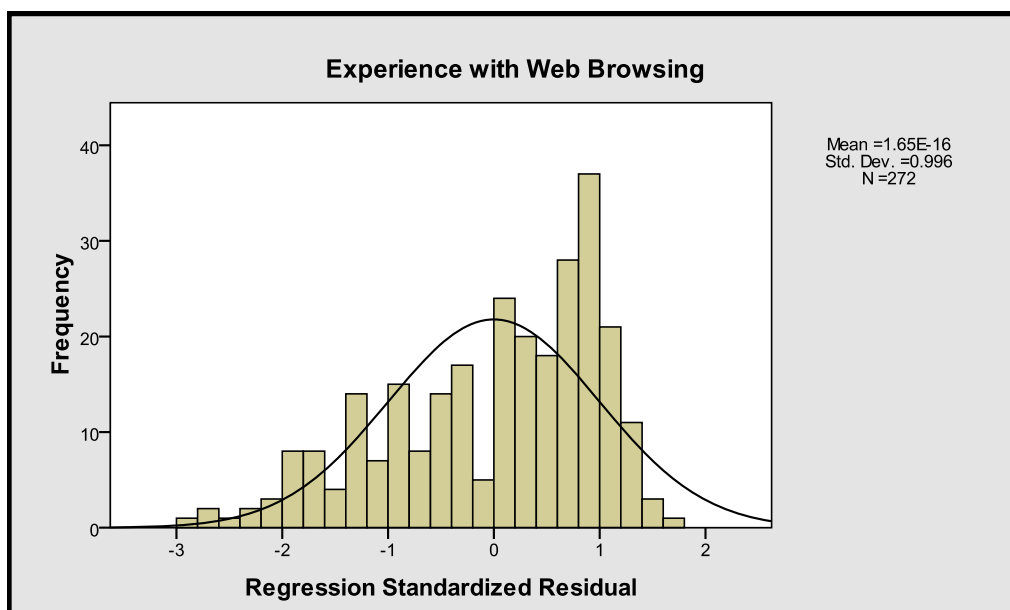
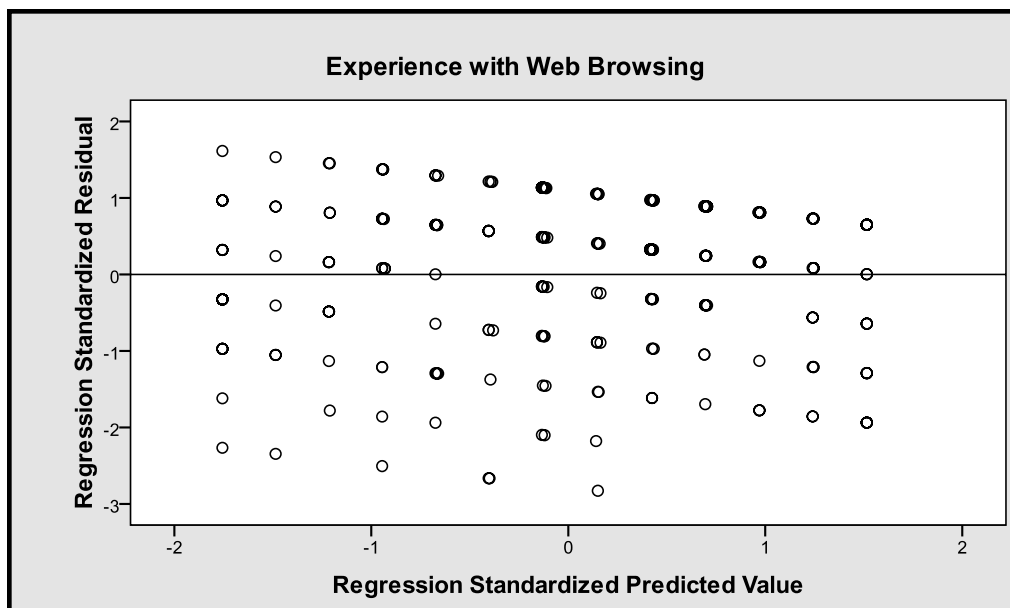
Standardised Residuals of MLR Models (cont.)

Understanding of Web Technologies



Standardised Residuals of MLR Models (cont.)

Experience with Web Browsing



Simple Linear Regressions

Trust in Websites

Variable		Model Coefficients			Statistics	
Response	Explanatory		B	SE(B)	t	p
Websites	privacy	Intercept	4.037	0.140		
		privacy	-0.103	0.032	-3.196	0.002
	contact	Intercept	3.788	0.197		
		contact	-0.027	0.037	-0.728	0.467
	testimonials	Intercept	3.428	0.159		
		testimonials	0.058	0.036	1.605	0.110
	guestbooks	Intercept	3.708	0.126		
		guestbooks	-0.022	0.043	-0.521	0.603
	forums	Intercept	3.477	0.145		
		forums	0.053	0.038	1.422	0.156
	e-trust	Intercept	3.624	0.138		
		e-trust	0.008	0.031	0.262	0.794
	navigation	Intercept	3.551	0.200		
		navigation	0.022	0.039	0.554	0.580
	errors	Intercept	3.694	0.187		
		errors	-0.008	0.037	-0.228	0.820
	visual_design	Intercept	3.510	0.216		
		visual_design	0.031	0.043	0.708	0.479
	branding	Intercept	3.409	0.204		
		branding	0.053	0.041	1.287	0.199
	guarantees	Intercept	3.576	0.208		
		guarantees	0.016	0.039	0.403	0.687
	order_track	Intercept	3.710	0.210		
		order_track	-0.011	0.039	-0.282	0.778
	after_sales	Intercept	3.713	0.220		
		after_sales	-0.012	0.041	-0.285	0.776
	payment_meth	Intercept	3.421	0.223		
		payment_meth	0.045	0.040	1.104	0.271
	images	Intercept	3.682	0.145		
		images	-0.009	0.040	-0.220	0.826
	pay-track	Intercept	3.900	0.186		
		pay-track	-0.051	0.036	-1.434	0.153
	delivery	Intercept	3.601	0.366		
		delivery	0.009	0.058	0.148	0.882
	maps	Intercept	3.696	0.176		
		maps	-0.010	0.038	-0.263	0.793
	skype	Intercept	3.501	0.123		
		skype	0.075	0.049	1.546	0.123
	phone	Intercept	3.998	0.174		
		phone	-0.078	0.036	-2.172	0.031
	email	Intercept	3.773	0.234		
		email	-0.022	0.042	-0.533	0.595

Simple Linear Regressions (cont.)

Trust in giving Credit Card details to Websites

Variable		Model Coefficients			Statistics	
Response	Explanatory		β	SE(β)	t	p
Credit Card	privacy	Intercept	3.676	0.205		
		privacy	-0.159	0.047	-3.360	0.001
	contact	Intercept	3.599	0.289		
		contact	-0.104	0.054	-1.918	0.056
	testimonials	Intercept	2.969	0.235		
		testimonials	0.029	0.053	0.554	0.580
	guestbooks	Intercept	3.262	0.186		
		guestbooks	-0.074	0.063	-1.173	0.242
	forums	Intercept	3.249	0.213		
		forums	-0.050	0.056	-0.893	0.373
	e-trust	Intercept	3.088	0.203		
		e-trust	-0.001	0.046	-0.021	0.984
	navigation	Intercept	2.849	0.294		
		navigation	0.049	0.057	0.859	0.391
	errors	Intercept	2.889	0.275		
		errors	0.042	0.054	0.775	0.439
	visual_design	Intercept	2.853	0.318		
		visual_design	0.049	0.064	0.771	0.441
	branding	Intercept	2.549	0.299		
		branding	0.116	0.060	1.917	0.056
	guarantees	Intercept	3.260	0.306		
		guarantees	-0.035	0.058	-0.612	0.541
	order_track	Intercept	3.256	0.310		
		order_track	-0.034	0.057	-0.591	0.555
	after_sales	Intercept	3.323	0.324		
		after_sales	-0.047	0.060	-0.780	0.436
	payment_meth	Intercept	3.104	0.330		
		payment_meth	-0.004	0.060	-0.062	0.951
	images	Intercept	3.281	0.213		
		images	-0.063	0.059	-1.067	0.287
	pay-track	Intercept	3.439	0.274		
		pay-track	-0.074	0.053	-1.404	0.162
	delivery	Intercept	2.886	0.539		
		delivery	0.032	0.085	0.376	0.707
	maps	Intercept	3.369	0.258		
		maps	-0.067	0.055	-1.213	0.226
	skype	Intercept	3.101	0.182		
		skype	-0.008	0.072	-0.113	0.910
	phone	Intercept	3.804	0.254		
		phone	-0.162	0.052	-3.110	0.002
	email	Intercept	3.650	0.342		
		email	-0.106	0.061	-1.739	0.083

Simple Linear Regressions (cont.)

Trust in Word of Mouth

Variable		Model Coefficients			Statistics	
Response	Explanatory		β	SE(β)	t	p
Word of Mouth	privacy	Intercept	4.509	0.166		
		privacy	-0.137	0.038	-3.582	0.000
	contact	Intercept	4.201	0.235		
		contact	-0.041	0.044	-0.921	0.358
	testimonials	Intercept	4.025	0.190		
		testimonials	-0.006	0.043	-0.146	0.884
	guestbooks	Intercept	4.143	0.150		
		guestbooks	-0.059	0.051	-1.165	0.245
	forums	Intercept	3.892	0.173		
		forums	0.032	0.045	0.720	0.472
	e-trust	Intercept	4.095	0.164		
		e-trust	-0.025	0.037	-0.684	0.495
	navigation	Intercept	3.855	0.239		
		navigation	0.030	0.047	0.654	0.514
	errors	Intercept	3.648	0.222		
		errors	0.075	0.044	1.724	0.086
	visual_design	Intercept	3.665	0.257		
		visual_design	0.071	0.052	1.382	0.168
	branding	Intercept	3.619	0.243		
		branding	0.082	0.049	1.677	0.095
	guarantees	Intercept	4.232	0.248		
		guarantees	-0.047	0.047	-1.000	0.318
	order_track	Intercept	4.122	0.251		
		order_track	-0.024	0.047	-0.519	0.605
	after_sales	Intercept	4.234	0.262		
		after_sales	-0.046	0.049	-0.947	0.345
	payment_meth	Intercept	4.213	0.267		
		payment_meth	-0.041	0.048	-0.843	0.400
	images	Intercept	4.211	0.172		
		images	-0.068	0.048	-1.418	0.157
	pay-track	Intercept	4.541	0.220		
		pay-track	-0.113	0.042	-2.668	0.008
	delivery	Intercept	3.715	0.436		
		delivery	0.046	0.069	0.666	0.506
	maps	Intercept	4.285	0.209		
		maps	-0.067	0.045	-1.502	0.134
	skype	Intercept	3.977	0.147		
		skype	0.011	0.058	0.197	0.844
	phone	Intercept	4.342	0.208		
		phone	-0.077	0.043	-1.803	0.073
	email	Intercept	4.051	0.279		
		email	-0.010	0.050	-0.192	0.848

Simple Linear Regressions (cont.)

Computer Skills

Variable		Model Coefficients			Statistics	
Response	Explanatory		β	SE(β)	t	p
Computer Skills	privacy	Intercept	3.560	0.078		
		privacy	0.003	0.018	0.155	0.877
	contact	Intercept	3.381	0.107		
		contact	0.038	0.020	1.902	0.058
	testimonials	Intercept	3.480	0.087		
		testimonials	0.023	0.020	1.162	0.246
	guestbooks	Intercept	3.528	0.069		
		guestbooks	0.017	0.023	0.744	0.458
	forums	Intercept	3.446	0.079		
		forums	0.037	0.020	1.816	0.070
	e-trust	Intercept	3.348	0.074		
		e-trust	0.059	0.017	3.564	0.000
	navigation	Intercept	3.276	0.108		
		navigation	0.061	0.021	2.933	0.004
	errors	Intercept	3.349	0.101		
		errors	0.047	0.020	2.379	0.018
	visual_design	Intercept	3.383	0.118		
		visual_design	0.040	0.024	1.692	0.092
	branding	Intercept	3.464	0.111		
		branding	0.023	0.022	1.021	0.308
	guarantees	Intercept	3.717	0.113		
		guarantees	-0.030	0.021	-1.387	0.166
	order_track	Intercept	3.528	0.115		
		order_track	0.008	0.021	0.389	0.698
	after_sales	Intercept	3.555	0.120		
		after_sales	0.003	0.022	0.135	0.893
	payment_meth	Intercept	3.448	0.122		
		payment_meth	0.023	0.022	1.060	0.290
	images	Intercept	3.584	0.079		
		images	-0.005	0.022	-0.215	0.830
	pay-track	Intercept	3.576	0.102		
		pay-track	-0.001	0.020	-0.069	0.945
	delivery	Intercept	3.302	0.199		
		delivery	0.043	0.031	1.374	0.171
	maps	Intercept	3.534	0.096		
		maps	0.008	0.020	0.412	0.681
	skype	Intercept	3.484	0.067		
		skype	0.042	0.026	1.592	0.113
	phone	Intercept	3.557	0.096		
		phone	0.003	0.020	0.152	0.880
	email	Intercept	3.390	0.127		
		email	0.034	0.023	1.486	0.138

Simple Linear Regressions (cont.)

Web Technologies

Variable		Model Coefficients			Statistics	
Response	Explanatory		β	SE(β)	t	p
Web Technologies	privacy	Intercept	2.900	0.099		
		privacy	0.038	0.023	1.652	0.100
	contact	Intercept	2.584	0.135		
		contact	0.092	0.025	3.636	0.000
	testimonials	Intercept	2.716	0.110		
		testimonials	0.083	0.025	3.329	0.001
	guestbooks	Intercept	2.902	0.088		
		guestbooks	0.057	0.030	1.928	0.055
	forums	Intercept	2.676	0.099		
		forums	0.110	0.026	4.275	0.000
	e-trust	Intercept	2.685	0.093		
		e-trust	0.095	0.021	4.494	0.000
	navigation	Intercept	2.462	0.135		
		navigation	0.121	0.026	4.593	0.000
	errors	Intercept	2.648	0.128		
		errors	0.084	0.025	3.323	0.001
	visual_design	Intercept	2.515	0.148		
		visual_design	0.112	0.030	3.776	0.000
	branding	Intercept	2.692	0.142		
		branding	0.075	0.029	2.634	0.009
	guarantees	Intercept	2.880	0.146		
		guarantees	0.032	0.027	1.175	0.241
	order_track	Intercept	2.747	0.146		
		order_track	0.058	0.027	2.141	0.033
	after_sales	Intercept	2.583	0.151		
		after_sales	0.090	0.028	3.205	0.002
	payment_meth	Intercept	2.641	0.155		
		payment_meth	0.076	0.028	2.725	0.007
	images	Intercept	2.983	0.101		
		images	0.019	0.028	0.659	0.510
	pay-track	Intercept	2.856	0.130		
		pay-track	0.038	0.025	1.535	0.126
	delivery	Intercept	2.463	0.254		
		delivery	0.093	0.040	2.322	0.021
	maps	Intercept	2.973	0.123		
		maps	0.016	0.026	0.599	0.550
	skype	Intercept	2.898	0.086		
		skype	0.070	0.034	2.055	0.041
	phone	Intercept	2.972	0.123		
		phone	0.015	0.025	0.613	0.540
	email	Intercept	2.618	0.162		
		email	0.079	0.029	2.753	0.006

Simple Linear Regressions (cont.)

Web Browsing

Variable		Model Coefficients			Statistics	
Response	Explanatory		β	SE(β)	t	p
Web Browsing	privacy	Intercept	5.261	0.190		
		privacy	0.012	0.044	0.268	0.789
	contact	Intercept	4.795	0.262		
		contact	0.103	0.049	2.098	0.037
	testimonials	Intercept	5.284	0.213		
		testimonials	0.005	0.048	0.114	0.910
	guestbooks	Intercept	5.329	0.169		
		guestbooks	-0.010	0.057	-0.174	0.862
	forums	Intercept	4.860	0.192		
		forums	0.134	0.050	2.687	0.008
	e-trust	Intercept	4.670	0.179		
		e-trust	0.169	0.040	4.193	0.000
	navigation	Intercept	4.638	0.264		
		navigation	0.139	0.051	2.711	0.007
	errors	Intercept	4.438	0.243		
		errors	0.185	0.048	3.877	0.000
	visual_design	Intercept	4.830	0.288		
		visual_design	0.101	0.058	1.755	0.080
	branding	Intercept	4.985	0.273		
		branding	0.069	0.055	1.256	0.210
	guarantees	Intercept	5.444	0.278		
		guarantees	-0.028	0.052	-0.532	0.595
	order_track	Intercept	4.577	0.277		
		order_track	0.144	0.051	2.799	0.005
	after_sales	Intercept	5.072	0.294		
		after_sales	0.046	0.055	0.843	0.400
	payment_meth	Intercept	5.098	0.299		
		payment_meth	0.040	0.054	0.734	0.464
	images	Intercept	5.332	0.193		
		images	-0.009	0.054	-0.161	0.873
	pay-track	Intercept	5.184	0.250		
		pay-track	0.025	0.048	0.526	0.599
	delivery	Intercept	4.640	0.487		
		delivery	0.107	0.077	1.393	0.165
	maps	Intercept	5.467	0.234		
		maps	-0.038	0.050	-0.757	0.450
	skype	Intercept	5.186	0.165		
		skype	0.058	0.065	0.897	0.370
	phone	Intercept	5.356	0.235		
		phone	-0.011	0.048	-0.236	0.813
	email	Intercept	4.998	0.312		
		email	0.058	0.056	1.038	0.300

Mann-Whitney U Tests

Gender

Variables	Mann-Whitney	Z	p
Education	5763.000	-4.225	0.000
Computer Skills	6008.000	-3.980	0.000
Web Technologies	5691.000	-4.483	0.000
Web Browsing	5957.000	-3.754	0.000
Age	5784.500	-4.041	0.000
Shop Assistants	7534.500	-1.101	0.271
Web Sites	7016.000	-1.986	0.047
Credit Card	6298.500	-3.152	0.002
Word of Mouth	7859.500	-0.553	0.580
Privacy	7216.000	-1.619	0.105
Contact Information	8124.500	-0.110	0.913
Testimonials	7843.000	-0.575	0.565
Guestbooks	8129.500	-0.105	0.916
Forums	6365.500	-3.040	0.002
E-Trust	6656.000	-2.571	0.010
Navigation	7265.000	-1.541	0.123
Errors	7352.000	-1.394	0.163
VisDes	8082.500	-0.179	0.858
Branding	7465.000	-1.209	0.227
Guarantees	6767.000	-2.375	0.018
Order Tracking	7544.500	-1.081	0.280
After Sales	7760.000	-0.720	0.471
Payment Methods	7872.500	-0.534	0.594
Images	7548.500	-1.069	0.285
Payment Tracking	7234.000	-1.594	0.111
Delivery Costs	7804.500	-0.712	0.476
Maps	8103.500	-0.143	0.886
Skype	7280.000	-1.671	0.095
Phone	6237.000	-3.243	0.001
Email	7876.500	-0.529	0.597

Kruskal-Wallis Tests

Education

Variables	Chi-Square	df	p
Computer Skills	16.419	3	0.001
Web Technologies	13.748	3	0.003
Web Browsing	12.423	3	0.006
Age	44.079	3	0.000
Shop Assistants	1.834	3	0.608
Web Sites	0.400	3	0.940
Credit Card	0.518	3	0.915
Word of Mouth	1.416	3	0.702
Privacy	2.535	3	0.469
Contact Information	5.078	3	0.166
Testimonials	7.730	3	0.052
Guestbooks	8.652	3	0.034
Forums	0.354	3	0.950
E-Trust	3.132	3	0.372
Navigation	0.894	3	0.827
Errors	0.828	3	0.843
VisDes	4.633	3	0.201
Branding	3.296	3	0.348
Guarantees	14.713	3	0.002
Order Tracking	2.066	3	0.559
After Sales	1.602	3	0.659
Payment Methods	2.704	3	0.440
Images	2.819	3	0.420
Payment Tracking	5.918	3	0.116
Delivery Costs	1.374	3	0.712
Maps	3.109	3	0.375
Skype	11.130	3	0.011
Phone	7.722	3	0.052
Email	1.396	3	0.706

Kruskal-Wallis Tests (cont.)**Age**

Variables	Chi-Square	df	p
Computer Skills	11.479	5	0.043
Web Technologies	4.560	5	0.472
Web Browsing	16.214	5	0.006
Shop Assistants	10.666	5	0.058
Web Sites	7.339	5	0.197
Credit Card	9.038	5	0.108
Word of Mouth	12.375	5	0.030
Privacy	9.347	5	0.096
Contact Information	21.795	5	0.001
Testimonials	10.974	5	0.052
Guestbooks	0.391	5	0.996
Forums	5.349	5	0.375
E-Trust	8.850	5	0.115
Navigation	6.737	5	0.241
Errors	4.436	5	0.488
VisDes	2.834	5	0.726
Branding	1.953	5	0.856
Guarantees	6.628	5	0.250
Order Tracking	0.643	5	0.986
After Sales	3.725	5	0.590
Payment Methods	4.038	5	0.544
Images	1.770	5	0.880
Payment Tracking	0.738	5	0.981
Delivery Costs	6.730	5	0.241
Maps	10.580	5	0.060
Skype	4.361	5	0.499
Phone	6.395	5	0.270
Email	4.985	5	0.418

Appendix C: Correlations

Correlations

Correlations											
		Gend	Edu	Com Skill	Web Tech	Web Brow	Age	Shop Assist	Web Sites	Cred Card	WoM
Gender	Pearson Correlation	1	-.233	-.271	-.273	-.217	-.254	-.065	-.111	-.187	-.022
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.284	.067	.002	.720
	N	272	272	272	272	272	272	272	272	272	272
Education	Pearson Correlation	-.233	1	.215	.230	.139	.292	.066	.011	.012	.059
	Sig. (2-tailed)	.000		.000	.000	.022	.000	.276	.855	.841	.332
	N	272	272	272	272	272	272	272	272	272	272
Computer Skills	Pearson Correlation	-.271	.215	1	.639	.373	.164	.029	.124	.105	.020
	Sig. (2-tailed)	.000	.000		.000	.000	.007	.632	.041	.085	.748
	N	272	272	272	272	272	272	272	272	272	272
Web Technologies	Pearson Correlation	-.273	.230	.639	1	.334	.072	-.009	.094	.126	.043
	Sig. (2-tailed)	.000	.000	.000		.000	.237	.877	.122	.037	.483
	N	272	272	272	272	272	272	272	272	272	272
Web Browsing	Pearson Correlation	-.217	.139	.373	.334	1	.185	-.057	.131	.071	.067
	Sig. (2-tailed)	.000	.022	.000	.000		.002	.347	.030	.241	.269
	N	272	272	272	272	272	272	272	272	272	272
Age	Pearson Correlation	-.254	.292	.164	.072	.185	1	-.107	-.097	-.086	-.174
	Sig. (2-tailed)	.000	.000	.007	.237	.002		.079	.109	.159	.004
	N	272	272	272	272	272	272	272	272	272	272
Shop Assistants	Pearson Correlation	-.065	.066	.029	-.009	-.057	-.107	1	.486	.130	.195
	Sig. (2-tailed)	.284	.276	.632	.877	.347	.079		.000	.032	.001
	N	272	272	272	272	272	272	272	272	272	272
Websites	Pearson Correlation	-.111	.011	.124	.094	.131	-.097	.486	1	.451	.469
	Sig. (2-tailed)	.067	.855	.041	.122	.030	.109	.000		.000	.000
	N	272	272	272	272	272	272	272	272	272	272
Credit Card	Pearson Correlation	-.187	.012	.105	.126	.071	-.086	.130	.451	1	.430
	Sig. (2-tailed)	.002	.841	.085	.037	.241	.159	.032	.000		.000
	N	272	272	272	272	272	272	272	272	272	272
Word of Mouth	Pearson Correlation	-.022	.059	.020	.043	.067	-.174	.195	.469	.430	1
	Sig. (2-tailed)	.720	.332	.748	.483	.269	.004	.001	.000	.000	

	N	272	272	272	272	272	272	272	272	272	272
Privacy	Pearson Correlation	.095	.031	.009	.100	.016	.175	-.062	-.191	-.200	-.213
	Sig. (2-tailed)	.117	.609	.877	.100	.789	.004	.309	.002	.001	.000
	N	272	272	272	272	272	272	272	272	272	272
Contact Information	Pearson Correlation	-.013	.091	.115	.216	.127	.259	-.029	-.044	-.116	-.056
	Sig. (2-tailed)	.830	.134	.058	.000	.037	.000	.629	.467	.056	.358
	N	272	272	272	272	272	272	272	272	272	272
Testimonials	Pearson Correlation	-.033	.099	.071	.199	.007	.013	.066	.097	.034	-.009
	Sig. (2-tailed)	.584	.102	.246	.001	.910	.835	.280	.110	.580	.884
	N	272	272	272	272	272	272	272	272	272	272
Guest books	Pearson Correlation	-.015	.036	.045	.117	-.011	.015	.060	-.032	-.071	-.071
	Sig. (2-tailed)	.806	.550	.458	.055	.862	.811	.327	.603	.242	.245
	N	272	272	272	272	272	272	272	272	272	272
Forums	Pearson Correlation	-.177	.019	.110	.252	.161	.079	.027	.086	-.054	.044
	Sig. (2-tailed)	.003	.757	.070	.000	.008	.194	.658	.156	.373	.472
	N	272	272	272	272	272	272	272	272	272	272
E-Trust	Pearson Correlation	-.169	.096	.212	.264	.247	.127	.025	.016	-.001	-.042
	Sig. (2-tailed)	.005	.113	.000	.000	.000	.036	.680	.794	.984	.495
	N	272	272	272	272	272	272	272	272	272	272
Navigation	Pearson Correlation	-.115	.000	.176	.269	.163	.131	-.031	.034	.052	.040
	Sig. (2-tailed)	.059	.998	.004	.000	.007	.030	.608	.580	.391	.514
	N	272	272	272	272	272	272	272	272	272	272
Errors	Pearson Correlation	-.089	.029	.143	.198	.230	.071	-.073	-.014	.047	.104
	Sig. (2-tailed)	.142	.634	.018	.001	.000	.246	.229	.820	.439	.086
	N	272	272	272	272	272	272	272	272	272	272
Visual Design	Pearson Correlation	-.024	-.042	.102	.224	.106	-.026	.038	.043	.047	.084
	Sig. (2-tailed)	.696	.494	.092	.000	.080	.669	.532	.479	.441	.168
	N	272	272	272	272	272	272	272	272	272	272
Branding	Pearson Correlation	-.064	.020	.062	.158	.076	-.066	.062	.078	.116	.102
	Sig. (2-tailed)	.295	.748	.308	.009	.210	.281	.307	.199	.056	.095
	N	272	272	272	272	272	272	272	272	272	272
Guarantees	Pearson Correlation	.139	-.097	-.084	.071	-.032	-.124	.003	.025	-.037	-.061
	Sig. (2-tailed)	.022	.110	.166	.241	.595	.041	.956	.687	.541	.318

	N	272	272	272	272	272	272	272	272	272	272
Order Tracking	Pearson Correlation	.022	.001	.024	.129	.168	-.006	-.028	-.017	-.036	-.032
	Sig. (2-tailed)	.717	.982	.698	.033	.005	.921	.641	.778	.555	.605
	N	272	272	272	272	272	272	272	272	272	272
After Sales	Pearson Correlation	.025	.018	.008	.191	.051	.049	-.002	-.017	-.047	-.058
	Sig. (2-tailed)	.686	.766	.893	.002	.400	.420	.979	.776	.436	.345
	N	272	272	272	272	272	272	272	272	272	272
Payment Methods	Pearson Correlation	.015	-.015	.064	.164	.045	-.007	.044	.067	-.004	-.051
	Sig. (2-tailed)	.803	.808	.290	.007	.464	.915	.467	.271	.951	.400
	N	272	272	272	272	272	272	272	272	272	272
Images	Pearson Correlation	-.053	.016	-.013	.040	-.010	.059	.103	-.013	-.065	-.086
	Sig. (2-tailed)	.382	.791	.830	.510	.873	.329	.090	.826	.287	.157
	N	272	272	272	272	272	272	272	272	272	272
Payment Tracking	Pearson Correlation	.074	-.010	-.004	.093	.032	-.045	-.028	-.087	-.085	-.160
	Sig. (2-tailed)	.227	.874	.945	.126	.599	.458	.643	.153	.162	.008
	N	272	272	272	272	272	272	272	272	272	272
Delivery Costs	Pearson Correlation	.005	.051	.083	.140	.084	-.047	-.076	.009	.023	.041
	Sig. (2-tailed)	.931	.399	.171	.021	.165	.439	.212	.882	.707	.506
	N	272	272	272	272	272	272	272	272	272	272
Maps	Pearson Correlation	.003	.046	.025	.036	-.046	.110	.030	-.016	-.074	-.091
	Sig. (2-tailed)	.956	.453	.681	.550	.450	.070	.622	.793	.226	.134
	N	272	272	272	272	272	272	272	272	272	272
Skype	Pearson Correlation	-.085	.135	.096	.124	.055	.075	.166	.094	-.007	.012
	Sig. (2-tailed)	.161	.026	.113	.041	.370	.216	.006	.123	.910	.844
	N	272	272	272	272	272	272	272	272	272	272
Phone	Pearson Correlation	.188	-.087	.009	.037	-.014	-.029	.014	-.131	-.186	-.109
	Sig. (2-tailed)	.002	.151	.880	.540	.813	.639	.815	.031	.002	.073
	N	272	272	272	272	272	272	272	272	272	272
Email	Pearson Correlation	.000	-.011	.090	.165	.063	.040	-.105	-.032	-.105	-.012
	Sig. (2-tailed)	.994	.861	.138	.006	.300	.507	.085	.595	.083	.848
	N	272	272	272	272	272	272	272	272	272	272

Non-Parametric Correlations

Non-Parametric Correlations											
		Gend	Edu	Com Skill	Web Tech	Web Brow	Age	Shop Assist	Web Sites	Cred Card	WoM
Gender	Spearman's rho	1	-.257	-.242	-.272	-.228	-.245	-.067	-.121	-.191	-.034
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.272	.047	.002	.581
	N	272	272	272	272	272	272	272	272	272	272
Education	Spearman's rho	-.257	1	.229	.211	.161	.286	.080	.021	.018	.056
	Sig. (2-tailed)	.000		.000	.000	.008	.000	.186	.725	.773	.357
	N	272	272	272	272	272	272	272	272	272	272
Computer Skills	Spearman's rho	-.242	.229	1	.599	.368	.155	.014	.138	.117	.041
	Sig. (2-tailed)	.000	.000		.000	.000	.011	.823	.023	.053	.504
	N	272	272	272	272	272	272	272	272	272	272
Web Technologies	Spearman's rho	-.272	.211	.599	1	.318	.051	-.024	.104	.132	.070
	Sig. (2-tailed)	.000	.000	.000		.000	.406	.698	.085	.029	.249
	N	272	272	272	272	272	272	272	272	272	272
Web Browsing	Spearman's rho	-.228	.161	.368	.318	1	.198	-.073	.141	.076	.070
	Sig. (2-tailed)	.000	.008	.000	.000		.001	.227	.020	.214	.250
	N	272	272	272	272	272	272	272	272	272	272
Age	Spearman's rho	-.245	.286	.155	.051	.198	1	-.111	-.094	-.107	-.174
	Sig. (2-tailed)	.000	.000	.011	.406	.001		.067	.121	.078	.004
	N	272	272	272	272	272	272	272	272	272	272
Shop Assistants	Spearman's rho	-.067	.080	.014	-.024	-.073	-.111	1	.507	.145	.223
	Sig. (2-tailed)	.272	.186	.823	.698	.227	.067		.000	.017	.000
	N	272	272	272	272	272	272	272	272	272	272
Websites	Spearman's rho	-.121	.021	.138	.104	.141	-.094	.507	1	.461	.492
	Sig. (2-tailed)	.047	.725	.023	.085	.020	.121	.000		.000	.000
	N	272	272	272	272	272	272	272	272	272	272
Credit Card	Spearman's rho	-.191	.018	.117	.132	.076	-.107	.145	.461	1	.449
	Sig. (2-tailed)	.002	.773	.053	.029	.214	.078	.017	.000		.000
	N	272	272	272	272	272	272	272	272	272	272
Word of Mouth	Spearman's rho	-.034	.056	.041	.070	.070	-.174	.223	.492	.449	1
	Sig. (2-tailed)	.581	.357	.504	.249	.250	.004	.000	.000	.000	

	N	272	272	272	272	272	272	272	272	272	272
Privacy	Spearman's rho	.098	.021	.001	.079	.011	.164	-.063	-.181	-.207	-.221
	Sig. (2-tailed)	.106	.727	.984	.192	.852	.007	.298	.003	.001	.000
	N	272	272	272	272	272	272	272	272	272	272
Contact Information	Spearman's rho	-.007	.055	.111	.176	.128	.260	-.060	-.069	-.117	-.076
	Sig. (2-tailed)	.913	.367	.068	.004	.034	.000	.327	.256	.053	.213
	N	272	272	272	272	272	272	272	272	272	272
Testimonials	Spearman's rho	-.035	.082	.067	.171	.002	.018	.082	.094	.031	-.005
	Sig. (2-tailed)	.566	.178	.267	.005	.969	.766	.177	.122	.608	.931
	N	272	272	272	272	272	272	272	272	272	272
Guest books	Spearman's rho	-.006	.000	.040	.123	-.004	.033	.065	-.041	-.043	-.073
	Sig. (2-tailed)	.916	.995	.510	.042	.942	.587	.285	.504	.483	.232
	N	272	272	272	272	272	272	272	272	272	272
Forums	Spearman's rho	-.185	.023	.102	.256	.168	.093	.034	.092	-.035	.058
	Sig. (2-tailed)	.002	.701	.093	.000	.006	.127	.575	.131	.566	.338
	N	272	272	272	272	272	272	272	272	272	272
E-Trust	Spearman's rho	-.156	.102	.198	.231	.245	.138	.023	.005	.003	-.041
	Sig. (2-tailed)	.010	.095	.001	.000	.000	.023	.706	.941	.963	.505
	N	272	272	272	272	272	272	272	272	272	272
Navigation	Spearman's rho	-.094	-.052	.148	.248	.141	.112	-.028	.011	.034	.023
	Sig. (2-tailed)	.124	.390	.014	.000	.020	.064	.645	.863	.571	.704
	N	272	272	272	272	272	272	272	272	272	272
Errors	Spearman's rho	-.085	.007	.114	.159	.216	.051	-.049	.008	.058	.097
	Sig. (2-tailed)	.164	.903	.060	.009	.000	.405	.420	.890	.339	.110
	N	272	272	272	272	272	272	272	272	272	272
Visual Design	Spearman's rho	-.011	-.068	.102	.192	.086	-.041	.060	.052	.041	.088
	Sig. (2-tailed)	.858	.265	.094	.001	.156	.496	.322	.391	.500	.148
	N	272	272	272	272	272	272	272	272	272	272
Branding	Spearman's rho	-.073	.012	.039	.130	.062	-.066	.055	.058	.094	.102
	Sig. (2-tailed)	.227	.845	.522	.033	.305	.278	.364	.341	.121	.093
	N	272	272	272	272	272	272	272	272	272	272
Guarantees	Spearman's rho	.144	-.149	-.091	.029	-.025	-.105	-.025	-.017	-.093	-.103
	Sig. (2-tailed)	.017	.014	.135	.633	.687	.085	.687	.782	.126	.091

	N	272	272	272	272	272	272	272	272	272	272
Order Tracking	Spearman's rho	.066	-.037	-.019	.069	.115	-.014	-.032	-.052	-.075	-.076
	Sig. (2-tailed)	.280	.539	.757	.259	.059	.823	.599	.390	.219	.212
	N	272	272	272	272	272	272	272	272	272	272
After Sales	Spearman's rho	.044	-.011	-.002	.129	.052	.048	-.033	-.059	-.106	-.114
	Sig. (2-tailed)	.472	.861	.976	.034	.395	.428	.590	.330	.081	.061
	N	272	272	272	272	272	272	272	272	272	272
Payment Methods	Spearman's rho	.032	-.026	.061	.151	.029	.022	.038	.004	-.073	-.114
	Sig. (2-tailed)	.594	.670	.317	.013	.631	.720	.538	.950	.228	.060
	N	272	272	272	272	272	272	272	272	272	272
Images	Spearman's rho	-.065	.003	-.014	.028	-.014	.054	.133	.010	-.029	-.081
	Sig. (2-tailed)	.286	.965	.822	.650	.815	.377	.028	.864	.637	.183
	N	272	272	272	272	272	272	272	272	272	272
Payment Tracking	Spearman's rho	.097	-.026	-.016	.057	.038	-.039	-.038	-.106	-.127	-.202
	Sig. (2-tailed)	.111	.672	.797	.350	.531	.526	.529	.080	.037	.001
	N	272	272	272	272	272	272	272	272	272	272
Delivery Costs	Spearman's rho	.043	-.004	.064	.101	.035	-.016	-.125	-.049	-.029	.007
	Sig. (2-tailed)	.478	.953	.295	.097	.569	.792	.040	.422	.629	.904
	N	272	272	272	272	272	272	272	272	272	272
Maps	Spearman's rho	-.009	.029	.030	.023	-.061	.105	.024	-.017	-.065	-.083
	Sig. (2-tailed)	.886	.633	.621	.707	.318	.083	.694	.782	.288	.173
	N	272	272	272	272	272	272	272	272	272	272
Skype	Spearman's rho	-.101	.124	.128	.183	.062	.041	.139	.104	.039	.037
	Sig. (2-tailed)	.095	.040	.035	.002	.307	.499	.022	.086	.520	.544
	N	272	272	272	272	272	272	272	272	272	272
Phone	Spearman's rho	.197	-.108	.006	.015	.004	-.029	.016	-.137	-.198	-.124
	Sig. (2-tailed)	.001	.076	.919	.801	.951	.634	.789	.024	.001	.041
	N	272	272	272	272	272	272	272	272	272	272
Email	Spearman's rho	.032	-.016	.075	.132	.057	.030	-.097	-.049	-.149	-.009
	Sig. (2-tailed)	.598	.787	.216	.029	.351	.622	.111	.421	.014	.888
	N	272	272	272	272	272	272	272	272	272	272