

E-COMMERCE TRUST BELIEFS: THE INFLUENCE OF NATIONAL CULTURE

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Abstract

Trust is a social and psychological phenomenon that is widely acknowledged as contributing to many forms of exchange, including e-commerce exchanges. Researchers have suggested that trust beliefs and cultural factors are closely related. Due to the international nature of business to consumer e-commerce, it is likely that the influence of culture may extend to online consumers' trust responses. This paper describes an in-progress study where a previously validated trust measurement instrument is being applied in both the United States and in Ireland – counties that differ in terms of individualism, uncertainty avoidance, and power-distance. It is anticipated that the study results, when available, will provide a refined understanding as to the influence of national culture on the generation of online consumers' trust beliefs and thus make a valuable contribution not only to information systems and diffusion research but also to online vendors in their attempts to engender consumer trust in their websites.

Keywords: *e-commerce, trust, national culture.*

1 INTRODUCTION

The importance of the trust construct and its influence on human behaviour is widely acknowledged by academics from across a wide spectrum of intellectual disciplines. Sociologists (Gambetta, 1988), psychologists (Deutsch, 1962), organisational behaviour scientists (Kramer, 1999; Kramer & Tyler, 1996; Mishra, 1996; Mayer, Davis & Schoorman, 1995; Sitkin & Roth, 1993), as well as economists (Williamson, 1974; Zucker, 1986), anthropologists (Ekeh, 1974), and political scientists (Barber, 1983) have contributed to the wide body of work that exists on this topic. In the Information Systems (IS) field, researchers have shown an increasing awareness of how trust contributes towards the success of many types of virtual environments (e.g. Cyr et al., 2005; Sillence et al., 2004; Briggs *et al.*, 2004; Gefen *et al.*, 2003; Cortitore *et al.*, 2003; Huang *et al.*, 2003; Belanger et al., 2002; Shankar et al., 2002; Koufaris and Hampton Sosa, 2002; Gefen, 2003; Lee et al., 2001). It is considered to have critical importance for the success of on-line consumer purchasing (Reichheld and Schefter, 2000; Jarvenpaa and Tractinsky, 1999).

Despite increasing awareness of the influence of trust on behavioural outcomes such as online purchasing, studies on the construct tend to provide a limited view of the phenomenon. In

part, this stems from the conceptual and operational confusion that surrounds the construct. For example, Grabner-Krauter and Kaluscha, (2003) observe that research in this area is limited by differing conceptualizations of the construct and a blurring of the distinction between trust and its antecedents. Moreover, there is no consensus as to how the trust construct should be operationalised (Bhattacharjee, 2002). Compounding the problem is the fact that many of the scales used in trust studies in an on-line context are neither theoretically grounded nor validated. This confusion has manifested in studies that examine isolated dimensions of the construct such as privacy (Hoffman, 1999), structural assurances (Belanger *et al.*, 2002) or specific technical antecedents such as those proposed in the Technology Acceptance Model (in which Davis (1989) proposes that intention to use a technology is predicted by beliefs regarding the perceived ease of use and the perceived usefulness of the technology (see Pavlou, 2003)).

The United States is the leader in online shopping worldwide with online retail sales totalling \$44 billion in quarter 3 of 2006, a 12% lift when compared with quarter 3 of 2005 (Mulpuru 2006). In Europe the number of online shoppers has grown from 42% in 2003 to 56% in 2006, with the UK consistently remaining the European leader in online shopping and countries such as Germany, the Netherlands, and Italy showing a strong increase in adoption of online shopping (Retimsa, 2006). Studies of online shopping in Ireland are limited, but a 2002 study found that the number of Irish Internet users buying on-line, having risen each quarter for several years, fell for the first time that year (Amárach Consulting (2002). Further studies in 2003 found that although nearly half of the Irish population had Internet access, only 38% of Irish Internet users had made an on-line purchase and the majority of those were in the 35 - 49 age category and based in Dublin. It appears that, although there has been a significant increase in the number of Irish Internet users over the past decade, only a modest fraction of those users have made purchases over the Internet.

It is conceivable that Irish consumers' hesitancy to purchase online is related to their lack of trust in online vendors. The objectives of this research are accordingly twofold; firstly to examine whether the antecedents of consumer trust in Internet shopping differ significantly between consumers in Ireland and the United States. A second objective is to examine whether patterns of trust behaviour exhibited by people working in the information and communications technology (ICT) industry are different from their peers who, while business and computer literate, are working in non-ICT specific jobs.

2 TRUST IN E-COMMERCE

Trust is a social and psychological phenomenon that has been studied as a personality trait, as a social tie between actors, as an emergent property of a mutual exchange, and as a feature of a community as a whole (Chopra and Wallace, 2003). In this study, trust is viewed from an interpersonal perspective (Chopra and Wallace, 2003) and is defined as an attitude of confidence directed towards the online vendor that may be influenced by the personality of the trustor and the attributes of the trustee (Mayer *et al.* 1995). Trusting beliefs have been shown to positively influence online consumers' purchase intentions (Verhagen *et al.*, 2006; 2004; McKnight *et al.*; 2002; Lim *et al.*, 2001; Jarvenpaa *et al.*, 2000). Consequently, understanding the factors that influence the generation of trusting beliefs in an online environment is of considerable interest to researchers (e.g. Wang and Emurian, 2005; Briggs *et al.*, 2004; Corritore *et al.*, 2003; Gefen *et al.*, 2003; Gefen and Straub, 2003; Shankar *et al.*

2002; Koufaris and Hampton Sosa, 2002; McKnight *et al.*, 2002, Chen and Dhillon, 2003; Lee *et al.*, 2001).

The literature provides considerable evidence that a number of factors have strong predictive importance and are therefore deserving of consideration in any examination of trust. These factors include the characteristics of the online vendor (Chen and Dhillon, 2003; Bhattacharjee, 2002; Lee and Turban, 2001; McKnight *et al.*, 2002; Peters *et al.*, 1997; Mayer *et al.*, 1995; Covello, 1992; Barber, 1983), situational factors (Bigley and Pearce, 1998; Hagen and Choe, 1998; Lewicki and Bunker, 1995; Sitkin, 1995; Ring & Van De Ven; 1992), third party certification (McKnight and Chervany, 2001; Hoffmann *et al.*, 1999; Jarvenpaa and Grazioli, 1999; Kovar *et al.*, 2000a; 2000b; Cheskin Research, 2000), the individual's propensity to trust (Kim and Prabhakar, 2004; Lee and Turban, 2001; Gefen, 2000; Kim and Prabhakar, 2000; Egger, 2000; Gefen, 2000; McKnight *et al.*, 1998; Ambrose and Johnson, 1998), a personality characteristic (Gurtman, 1992) and the influence of perceived risk (Verhagen *et al.*, 2006; 2004; Pavlou and Gefen, 2004; Van der Heijden, 2003; Pavlou, 2003; Grabner-Krauter and Kaluscha, 2003; Hardin, 2001; Jarvenpaa *et al.*, 2000; Snijders and Keren, 1999; Hoffman *et al.*, 1999; Rousseau *et al.*, 1998; Mayer *et al.*, 1995).

Because of their importance, the influence of these factors - the characteristics of the online vendor, situational factors, third party certification, the individual's propensity to trust, and the influence of perceived risk on the consumer's trust response – are examined in this study of consumer trust in online shopping. In choosing a model to conduct the study it was therefore of particular importance that each of these constructs were adequately represented. Comprehensive reviews of all trust studies and trust models were undertaken and a number of models were found to address many of the key issues of concern in this study (e.g. Kini and Choobineh, 1998; Tan and Thoen, 2000-2001; and Egger, 2000). However, the model deemed to be the most suitable for the purposes of this study was that proposed by Cheung and Lee (2000) as it captures the most significant set of trust antecedents, derived from different lines of previous research, and presents them as an integrated entity that can provide direction for empirical testing. For example, the measurement instrument contains 30 items measuring trust antecedents such as perceived security controls (Gauzente, 2004), perceived privacy controls (Belanger *et al.*, 2002), the vendors perceived integrity (Chen and Dhillon, 2003), the vendors perceived competence (McKnight *et al.*, 2002), personality (Kim and Prabhakar, 2004), cultural environment (Shankar *et al.*, 2002; Hagen and Choe, 1998), experience (Kong and Hung, 2006) third party recognition (McKnight and Chervany, 2001), legal framework, (Bigley and Pearce, 1998; Fukuyama, 1995), and perceived risk (Verhagen *et al.*, 2006; Van der Heijden *et al.*, 2003, Jarvenpaa *et al.*, 2000).

2.1 National Culture & Trust in eCommerce.

The influence of national culture on trust beliefs and trust outcomes has long been asserted (Gefen and Heart, 2006; Gefen *et al.*, 2005; Doney *et al.*, 1998; Fukuyama, 1995; Zucker 1986). However, Gefen and Heart (2006) note that despite repeated theorisations of trust and national culture as intricately related constructs, e-commerce trust researchers have for the main part (exceptions to this being Gefen and Heart (2006), Connolly (2004) and Javvenpaa and Tractinsky (2000)) ignored the potential effects of national culture. They note that the majority of e-commerce trust research has been conducted in the United States, a country that exhibits high levels of individualism and uncertainty avoidance (Hofstede, 1980) and assert that this raises the questions as to whether research conducted in the US can in fact be

generalised to other countries. In their (2006) study, Gefen and Heart examined differences in three trust beliefs of vendor integrity, benevolence and ability between the US and Israel. The paths through which the trust beliefs were engendered were familiarity and predictability and the beliefs were examined in terms of the influence of these beliefs on behavioural intentions. The study found significant differences in the paths from integrity to purchase intentions (with integrity showing a stronger effect in the American sample in relation to purchasing intentions) and suggest that this may be the result of the US being a highly individualistic culture. Gefen and Heart therefore posit that the results indicate that conclusions based on US studies cannot and should not be automatically applied to other cultures and they accordingly emphasise the need for researchers to include national culture in e-commerce trust studies.

The four dimensions of national culture as identified by Hofstede (1980) are individualism-collectivism, power distance, uncertainty avoidance, and masculinity. The first of these, individualism (IDV), is described by Hofstede as the degree to which individuals are integrated into groups. On the individualist side are societies in which the ties between individuals are loose: everyone is expected to look after him/herself and his/her immediate family. The opposite to this is collectivism which comprises societies in which people from birth onwards are integrated into strong, cohesive groups often extended families (with uncles, aunts and grandparents) which continue protecting them in exchange for unquestioning loyalty. In a collectivist society individuals tend not to trust strangers (Fukuyama, 1995). On the other hand, in an individualist culture trust of strangers tends to be higher.

The second dimension is the Power Distance Index (PDI) which is the extent to which the less powerful members of organizations and institutions (like the family) accept and expect that power is distributed unequally. This represents inequality (more versus less), but defined from below, not from above. It suggests that a society's level of inequality is endorsed by the followers as much as by the leaders. Research (Shaffer and O' Hara, 1995) has shown that individuals from countries that with high PDI scores tend to have less trust for service providers than do individuals.

The third dimension of national culture that Hofstede discusses is the Uncertainty Avoidance Index (UAI). This dimension deals with a society's tolerance for uncertainty and ambiguity and indicates to what extent a culture programs its members to feel either uncomfortable or comfortable in unstructured situations. Uncertainty avoiding cultures try to minimize the possibility of such situations by strict laws and rules, safety and security measures. The opposite type, uncertainty accepting cultures, are more tolerant of opinions different from what they are used to; they try to have as few rules as possible, and on the philosophical and religious level they are relativist and allow many currents to flow side by side. The fourth of Hofstede's cultural dimensions is masculinity. Masculinity (MAS) refers to the distribution of roles between the genders, which is another fundamental issue for any society to which a range of solutions are found.

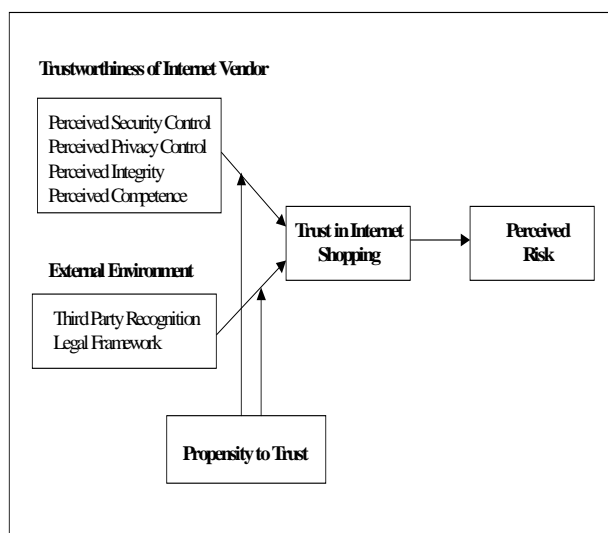
The model used in this study was developed and validated in Asia (Hong Kong), a country that exhibits (Hofstede 1980) very low levels of individualism, has a high rank on the power distance index and low levels of uncertainty avoidance. These scores are in marked contrast to those of the United States and Ireland. For example, the US shows a very high individuality index with a score of 91. Ireland, on the other hand, scores about 70 on the individualism index while Hong Kong scores markedly lower with a score of only 25. The PDI score for Hong Kong is high at 68 while the same score for the US is 40 (in a 11- 104

scale) but Ireland scores only 28 on this ranking. In terms of the UAI index, the U.S ranks low at 46 (in an 8-112 scale) but Ireland ranks far lower at 35 with Hong Kong lowest at a score of only 29. This indicates that Hong Kong consumers and Irish consumers tend to be more tolerant of uncertain situations than are Americans. As all three countries are similar in the masculinity index with Hong Kong at 57, the US at 62 and Ireland at 68, masculinity is not hypothesised as an aspect of national culture that could provide an explanation for differences in trust beliefs between these countries. In addition, it should be noted that while the US and Ireland are by no means polar opposites on each of the cultural indices, differences between them are evident in terms of three of the four indices, in particular the individualism index and to a lesser degree the power-distance and uncertainty avoidance indices.

The hypothesized effects of national culture on online consumer's trust beliefs will be examined by comparing the same model developed and validated in Hong Kong with data collected in the US and Ireland. If regardless of national culture the trust antecedents were found to be similar, this would point to the culture independence of the model. However, if the results differ markedly, this would confirm the concerns of researchers (e.g. Fukuyama, 1995) regarding the generalisation of US trust studies.

3 MEASUREMENT INSTRUMENT

In their model (figure 1) Cheung and Lee show that consumer trust in on-line shopping is predicted by two sets of antecedents – factors that create a sense of vendor trustworthiness and factors related to the external environment. The former relate to the vendor's perceived integrity and competence and the vendor's security and privacy controls. The latter (external environment) encompass third party recognition (e.g. seals of approval) and the legal framework. The model shows that the effect of both sets of factors on the consumer's trust beliefs is moderated by the consumer's propensity to trust. It also acknowledges the relationship between perceived risk and the online consumer's trust response. The thirteen hypotheses regarding the proposed trust antecedents, the influence of propensity to trust on the online consumer's trust response, and the relationship between perceived risk and the



online consumer's trust response are shown in appendix 1.

Figure 1. A Conceptual Model of Trust in Internet Shopping (Source: Cheung and Lee, 2000)

In the measurement instrument for this model, the moderating variable 'Propensity to Trust' is a composite of three sets of items. These are: (i) personality items relating to the individual's tendency to trust, (ii) experience items relating to the individual's previous experience and (iii) cultural environment items relating to the level of trust in the individuals environment.

4 METHODOLOGY

The measurement instrument proposed by Cheung and Lee was extended to include demographic information and was applied to two sets of samples in both Ireland and the United States. In each country, one set of respondents had less technical backgrounds and the other set had highly technical backgrounds.

For the Irish section of this study, the first sample was obtained from the Irish Master of Business Administration (MBA) Association. It consisted of 255 individuals who completed an MBA degree in the preceding 10 years and were graduates of six universities in Ireland. In the United States, the first sample chosen for this study was obtained from two postgraduate classes at Northeastern University Boston and comprised 75 individuals.

For the Irish section of the study, the second sample was obtained from the Irish Computer Society (ICS) and consisted of 218 consumers with highly technical backgrounds. To become a professional member of the Irish Computer Society necessitates having a degree in a technical discipline along with a minimum of 3 years work experience in a technical or technical-related position. These requirements will improve the likelihood that the respondents will have adequate disposable income and technical competency to engage in online shopping. However, it is reasoned that an individual could have recently joined the ICS but that their technical knowledge could be considerably outdated (which would reduce their knowledge and experience of online shopping). To overcome this potential limitation, an age limit of 45 years of age was imposed on the participants selected. For the United States section of the study, the second sample consisted of employees of the Computer Services department at a major east coast university in the United States. These employees by nature of their occupation are highly technical in both their educational background and level of technical skill. This sample comprised 35 individuals.

The data collection section of this research is currently in-progress and when completed checks for the internal reliability of each construct will be made using Cronbach's Alpha values and factor structures will be examined. On the basis of these test results, direct and partial correlation tests, regression analysis, ANOVA and independent T-Tests will be applied.

5 SUMMARY

This paper has described an in-progress study that aims to provide increased insight into the nature of the trust construct as observed in the behaviour of users and potential users of online shopping. This study will significantly extend our understanding of the phenomena along a number of dimensions. It is the first large-scale empirical study of its kind comparing the

antecedents of consumer trust in online shopping in Ireland and the United States. It therefore provides insight into the influence of national culture on the antecedents of consumer trust in online shopping. It clearly distinguishes between trust and trust antecedents - an issue that has plagued trust research to date, builds on conceptualisations of trust accepted by researchers and applied a validated measurement instrument that has previously been used by a trust researcher in another country. Finally, by examining whether patterns of trust behaviour exhibited by people working in the information and communications technology (ICT) industry differ from their peers who work in non-ICT specific jobs, the results of this study will provide insight as to the degree to which technical skill influences the online consumer's trust response. Thus, it is anticipated that the test results will increase our knowledge of the factors that predict consumers' trust in online shopping response and provide insight into the influence of cultural factors on the trust response. This refined understanding of the predictors and moderators of consumer trust will make a valuable contribution to not only to information systems research but also to the overall body of marketing, trust and diffusion research while providing practitioners with the insights necessary to improve consumer trust in their websites.

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APPENDIX 1: RESEARCH HYPOTHESES

(CTIS = Consumer Trust in Internet Shopping)

Proposition 1: The perceived security control of an Internet vendor is positively related to (CTIS).

Perceived security control refers to the Internet users' perception of the Internet vendors' ability to fulfil security requirements, such as authentication, integrity, encryption, and non-repudiation¹.

Proposition 2: The perceived privacy control of an Internet vendor is positively related to CTIS.

Perceived privacy control is conceived as the Internet users' perception of the Internet vendor's ability to protect consumers' personal information collected during electronic transactions from unauthorized use or disclosure.

Proposition 3: The perceived integrity of an Internet vendor is positively related to CTIS.

Perceived integrity refers to the Internet user's perception of on the vendor's honesty. For instance, whether it has consistent actions, whether its actions are congruent with its own words, and whether its transactions with its consumers are fair.

Proposition 4: The perceived competence of an Internet vendor is positively related to CTIS.

Perceived competency is defined as the Internet users' perception of the skills, abilities, and expertise of Internet vendors.

Proposition 5: The perceived effectiveness of the third party recognition is positively associated with CTIS. Third party recognition refers to the assurance provided by independent bodies that the Internet vendor is trustworthy.

Proposition 6: The perceived effectiveness of the legal framework is positively associated with CTIS.

Legal framework refers to the law and code of practice established to protect Internet shoppers during electronic transactions.

Proposition 7: Propensity to Trust moderates the relationship between the perceived security control of an Internet vendor and CTIS.

Proposition 8: Propensity to Trust moderates the relationship between the perceived privacy control of an Internet vendor and CTIS.

Proposition 9: Propensity to Trust moderates the relationship between the perceived integrity of an Internet vendor and CTIS.

Proposition 10: Propensity to Trust moderates the relationship between the

¹ The explanations that accompany each proposition are derived directly from Cheung & Lee (2000).

perceived competence of an Internet vendor and CTIS.
Proposition 11: Propensity to Trust moderates the relationship between the perceived effectiveness of the third party recognition and CTIS.
Proposition 12: Propensity to Trust moderates the relationship between the perceived effectiveness of the legal framework and CTIS.
Proposition 13: CTIS is negatively associated with perceived risk in Internet shopping.

(Source: Cheung and Lee, 2000)