

The influence of communication sources on perceived risk about purchasing online

Lynda Fitzgerald Andrews
School of Business, University of Queensland,
Brisbane, Australia.
Email: l.fitzgerald@business.uq.edu.au
Maree V. Boyle
School of Management, Griffith University,
Brisbane, Australia.
Email: m.boyle@griffith.edu.au

Abstract

In this paper we report on a qualitative study into the influence of personal and non-personal communication sources in creating, sustaining and/or mediating people's perceptions of risk about purchasing online. In terms of non-personal communication sources, our findings suggest that the popular media significantly influence both purchasers and non-purchasers' perceptions of risk about using the Web for purchasing. Despite these negative perceptions, those who have purchased online appear to pay little attention to change agent communications on websites, such as logos, icons and statements about secure payment systems, which are designed to alleviate these concerns. In terms of inter-personal communication sources, our findings suggest that while there is evidence that to some degree, friends or peers influenced the interviewees about purchasing online, the purchasers in our study indicated that they would not influence others to do the same. We conclude our paper with suggestions for future interpretive research into the influence of communication sources on acceptance of the Web for purchasing.

INTRODUCTION

With the shift in focus within the information technology (IT) and information systems (IS) literature from technological issues to organisational issues, greater opportunities opened up for qualitative researchers to contribute to managerial understanding of the behavioural-side of information technologies (Myers 1997; Lee 2001). While qualitative research was considered to be "relatively new" it was also increasingly perceived as being useful (Myers 1997, p 241) to understand end-user thoughts and actions towards information systems and technologies. Over time, interpretist studies offering richer explanatory insights into end-user beliefs, attitudes and behaviours towards these technologies have gained acceptance and publication in IT and IS literatures. Additionally, guidance for conducting and evaluating interpretive studies in information systems was provided through publications such as Butler (1998) and Klein and Myers (1999) and the MISQ Discovery Living Scholarship Website. Applying an interpretive analysis in IS provides rich insights into the cognitive, affective and behavioural aspects of the users' interactions (Trauth and Jessup, 2000). Moreover, interpretive analyses may uncover end-user reactions that would not have been evident using the quantitative methods, thus making it possible to shift the emphasis from the technology to the human interactions with the technology (Gopal and Prasad 2000) in order to better inform managerial policies and implementation strategies.

A pertinent example at the micro or individual level is the application of the end-user technology acceptance models, grounded in diffusion of innovation theory, to consumer acceptance of the Web, particularly for commercial activities such as online purchasing in B2C environments. Of particular interest to our paper is the recurring finding in this literature that perceived risk is a primary barrier to consumer adoption of online purchasing (Bhatnagar and Ghose 2004; Cheung and Lee 2001; Yoon 2002). A wealth of research exists seeking to quantify the extent to which a person's decision to purchase online is influenced by his/her perceptions of risk and to identify factors that are likely to reduce these negative perceptions.

Interestingly, despite many examples in the marketing literature of the utility of interpretive analysis for gaining rich insights into the complexities of consumer behaviour, there is a lack of such research that examines purchasing online as a technological phenomenon that is constituted and sustained through social interactions. In diffusion of innovation theory, it is this social interaction through the communication sources available in a particular society that play a significant role in the diffusion process (Rogers, 1995). In Australia, the uptake of Web-based purchasing is around 15% of the adult Internet user population (Australian Bureau of Statistics 2002). This figure alone suggests that there is still much that we need to know about how individuals experience the Web and how their interactions with their networks of communication sources influence their acceptance of this technology, particularly with regard to their

understanding of *perceived risk*. Yet, practically no such research has been conducted that provides insights into whether, or how these perceptions of risk are constituted and sustained through social processes such as interactions with social networks. This lack of insight limits our understanding of how communication sources may act singly or in combination to influence consumer perceptions of the uncertainty about the value, benefits or performance of using the online transactional technology (Lee, Lee and Schumann 2002).

Our paper seeks to partially fill this identified gap in knowledge by reporting on a qualitative study into how social networks, in the form of personal and non-personal communication sources, may be creating, sustaining or modifying consumers' perceptions of the risks of using the Web for purchasing. The paper is organised into four main sections. First, the theoretical framework for the study and research issues are discussed, followed by an outline of the research method. Then the emerging themes from the study are discussed and interwoven with aspects of the literature. The paper concludes with the implications of the study and future research directions.

THEORETICAL FRAMEWORK AND RESEARCH ISSUES

Diffusion of innovation is defined as "a process by which an innovation is communicated through certain channels, over time, among members of a social system" (Rogers 1995, p. 5). Contained in this definition are the four key elements of the diffusion process: the innovation, the communication sources, the time, and the social system. At the individual innovation decision process, diffusion theory specifically identifies the importance of communication sources or social networks in different stages of a person's decision about adopting an innovation. These include external, non-personal communications such as the media, change agents or marketers involved in the diffusion process and social, interpersonal communications networks, such as family and friends (Lee, et al. 2002; Rogers 1995).

Communication sources are particularly important where there is perceived social or economic risk and a person's decision to adopt an innovation is influenced by his/her perceptions of uncertainty about its value, benefits or performance (Rogers 1995). These networks provide information that the people evaluate when developing positive or negative attitudes towards the innovation and may influence their decision to either adopt or reject the innovation at that particular time. Moreover, as they process information gathered from the various communication sources they may model or imitate the behaviours of others who have interacted with the innovation (Rogers 1995). In this paper we use the communications sources that are important at different stages in the diffusion process as the lens through which to explore the impact of personal and non-personal communication on a person's perceptions of risk associated with online purchasing to broaden our understanding of their influence.

Diffusion of innovation literature is often silent on perceived risk as a factor influencing the diffusion of an innovation, despite adoption behaviour often being a process of dealing with the uncertainty about incorporating an innovation into ongoing practice (Mahajan, Muller and Bass 1990). Yet perceptions of risk are a powerful explanatory factor in consumer behaviour as individuals appear to be more motivated to avoid mistakes than to maximise purchasing benefits (Mitchell 1999). The risk literature has taken a number of perspectives. Examples include: dimensions of risk, such as financial, performance, psychological, physical and social (Kaplan, Szybillo and Jacoby 1974), risk reduction and risk handling strategies (Dowling and Staelin 1994); store attributes or buying situation effects (Mitchell 2001) and perceived source risk (McCorkle 1990).

Rather than discuss perceived risk as a broad topic, we focus on perceived risk in a way that is particularly relevant to the context of our study. These areas are: how perceived risk has been applied in examining consumer perceptions of non-store shopping and how this concept has been extended into studies related to purchasing on the Web, where the underlying technology is also perceived as risky. Non-store shopping is not new and there are numerous studies that examine perceived risk as a factor in retail patronage modes, for example mail order or catalogue shopping (Festervand, Snyder and Tsalikis 1986) in-home shopping (Schiffman, Schus and Winer 1976), or telephone shopping (Cox and Rich 1964). These studies suggest that consumers perceive more dimensions of risk in non-store environments than in-store.

When considering perceptions of risk involved with technologically mediated ways of making purchases, such as purchasing on the Web, an additional dimension needs to be considered – that of risk with the technology underlying the transaction. Perceptions of risk with Web-based purchasing are often associated with using the medium, rather than purchasing products or services. Moreover, the dimension of financial risk is not necessarily the amount involved with purchasing the product, but being put at risk of losing money via credit card fraud (Bhatnagar, Misra and Rao 2000). Sathye (1999, p. 326) identifies perceived risk as "the security and reliability of transactions over the Internet". Biswas and Biswas (2004) identify transaction risk that includes not only perceptions of risk in providing credit card details, but also personal information in the process of making an online transaction.

Research also has examined how organisations offering online transaction facilities seek to mediate these perceptions by providing signals or cues designed to increase consumer trust in their online stores. Change agent communications on websites; include security logos and icons or policy statements about secure payment systems, which are designed to alleviate these concerns. These studies are probably the closest that marketing research has come to examining how non-personal communication sources, such as change agents (Rogers 1995), in the form of marketers or Website designers, attempt to mediate consumer perceptions of risk about using the Web for purchasing. Examples include: the use of risk relievers (Van den Poel and Leunis 1999) or signaling cue-based-trust (Wang, Beatty and Fox 2004), in the

form of money-back guarantees, return policies or security and privacy disclosures (Cheung and Lee 2001), and transactional security, web site properties and web site reputation (Yoon 2002).

This review of the studies provides marketers with the 'what' in examining perceived risk and online transactional technologies. What this research does not explore is the 'how', that is, how are these perceptions of risk created, sustained and/or mediated through people's interactions with their personal and non-personal communication sources?

RESEARCH METHOD

Since we are unavoidably immersed in a priori research on perceived risk and purchasing online, it is important to acknowledge that we are not undertaking a purely inductive study. Instead we combine a phenomenological approach to our interviewing (Kvale 1996) with constant comparison techniques to code the data (Strauss and Corbin 1990). The phenomenological orientation for interviewing has the potential to uncover interesting interpretations of how consumers experience their relationships with a phenomenon. Moreover, this approach can disclose the essential meanings of human behaviour through describing and clarifying the structures and meanings of the lived world of a person's conscious experience of that world (Goulding, 1999). Phenomenological interviewing techniques permitted us to undertake in-depth explorations of a people's experiences, behaviours and feelings towards using the Web for purchasing and to interpret them within that reality. Using a grounded theory approach to coding qualitative data for analysis is appropriate as it is a general method and as such can be used in any research paradigm (Urquhart 2001). With this abductive approach, we alternated between phenomenological readings of the empirical data obtained from the interviews, while drawing on existing literature to assist in interpretation.

The subjective role of the researcher is a recognised characteristic of an interpretist approach (Guba and Lincoln, 1994). Therefore, we acknowledge that the researcher and the people interviewed construct an account of these meanings through the iterative methods of phenomenological interviewing and data analysis (Kvale, 1996). The methods used in our study were rigorous and continually verified against the data emerging during the research process as recommended by Strauss and Corbin (1990) to build a theoretical understanding of this area of research that conforms closely to the situation being observed.

A phenomenological study can employ theoretical sampling as per Strauss and Corbin, (1990), or purposive sampling (Patton, 1990) to obtain the widest possible variation of the experience through individuals sampled (Patton, 1990). We commenced with a purposive sampling technique where the initial interviewees for the research were recruited from a call for respondents through an Australian metropolitan university news magazine. Additional respondents were located using theoretical sampling, a method whereby the researchers make conscious choices about whom to sample and what to sample for (Strauss and Corbin 1990). There were ten interviewees in the study, four males and six females, ranging in age from their early twenties to late forties. Education levels ranged from year 12 to higher degrees. Five interviewees were university employees, three from administration, one technical and one academic. Additionally, there were two postgraduate students and three individuals working in public and private sector management. The group had a mean length of experience with the Internet of three and a half years; six had made purchases online and four had not.

The first author conducted the ten in-depth interviews that were audiotaped and transcribed verbatim. The transcripts were analysed using an iterative process through the three stage constant comparison of incidents method (Strauss and Corbin 1990). In stage one we used open coding of the data to identify categories of incidents. With the second stage we used axial coding to integrate the categories into central categories and in the final stage, we used selective coding to reduce the central categories into emerging themes. These themes were classified into two key areas of discussion: *perceptions of risk* and *influence of social communication networks* as shown in Table 1 and provide descriptive insights into how communication sources influenced interviewees' perceptions of risk towards shopping online.

PERCEPTIONS OF RISK	EMERGING THEMES
	<i>Intra-personal communication</i> How they speak of risk.
	<i>Interpersonal communication</i> Influence of friends and family experiences
	<i>Non-personal communication</i> How mass media sources influences perceptions of risk
	<i>Change agent communications as risk relievers</i> : How marketer or web site designer’s sources of communications on websites about secure payment systems on websites relieve concerns about credit card security.
INFLUENCE OF SOCIAL COMMUNICATIONS NETWORKS	<i>Being influenced</i> How interviewees are influenced by sources in their social communication networks.
	<i>Acting as influencers</i> How interviewees act as sources of influence for others in their social communication networks.

Table 1: Emerging themes from the interviews

Emerging themes

In this section, we interweave summary commentaries and quotes from the interviewees with the research literature to discuss the emerging themes. Therefore, the interpretations elaborated in this section are informed by the data collected and prior theory to suggest how the findings support, challenge or extend existing thinking on the influence of communication sources on people's perceptions of risk towards online purchasing.

Perceptions of risk

The interviewees expressed opinions about the risks involved with purchasing online.

The general perception appeared to be that the Web attracts highly intelligent people who may misuse the technology for “fun” or for “malicious purposes” and the quotes provided highlight some of these perceptions.

There’s a lot of very intelligent people in the world who know how to manipulate technology ... (male, purchaser)

It’s more that computers by their nature attract people with higher levels of intellect, who, because it is easy and fun, have access to information that other people don’t. (female, non-purchaser)

So you have no control over somebody in, you know, Florida, maybe circumventing the system somehow and your credit card number takes a little detour off in that direction as it’s going through to its destination. (male, non-purchaser)

Both purchasers and non-purchasers acknowledge the possibility of ‘techno-crooks’ operating online. Since perceptions of risk about interacting with online retail sites were so apparent for all interviewees, we thought it was important to investigate how this information was being communicated. To gain deeper insights into these concerns, three areas of communication influence were explored: first, *intra-personal communication*, which described how the interviewees spoke about the risks and their own personal experiences. Second, *interpersonal communication* explored how family or friends influenced their perceptions and finally *non-personal communication* that explored the influence of mass media channels. In this way it was possible to develop a better understanding of which communication sources were most influential in forming the interviewees’ perceptions of risk.

Intra-personal communication

None of the interviewees had experienced any fraud problems with their credit cards either online or in the traditional retail sector. Thus their perceptions were not based on direct personal experience. However, when comparing the way purchasers and non-purchasers spoke of their perceptions of risk there was a noticeable difference in phraseology and tone. For those who had purchased online the underlying implications appeared to be that they were prepared to take risks to get what they wanted, even in a medium that was already perceived to be fraught with risks. Their phraseologies were objective and rationale in their tone, as these statements demonstrate:

I'll take a risk every now and then. (male, purchaser)

I felt I should be concerned about leaving my credit card number on the Internet But ...[said with a dismissive shrug of the shoulders] (female, purchaser)

You're as much, if not more at risk using your credit card in a retail scenario. (male, purchaser), referring to the traditional retail environment.

The non-purchasers responded with more subjective expressions, using phrases like:

I'm nervous", *"it's scary* (female, non-purchaser),

I don't feel comfortable (male, non-purchaser),

It's my security blanket (female, non-purchaser), talking about her credit card being used fraudulently online.

These subjective expressions of risk by non-purchasers suggest a much greater sense of the probability of loss and therefore a stronger perception of risk appears to exist for these people compared to the purchasers.

Interpersonal communication

None of the interviewees identified any friends or relatives who had experienced problems with their credit cards in any way. Thus, it was established that their perceptions about the risks involved with online purchasing did not originate from personal experience or the recounted experiences from their social communication networks such as friends or family.

Non-personal influence

When probed further the interviewees indicated that their source of information regarding the risks about purchasing online was from reports they had read in print media or seen on television.

No one I know has ever been stung by using it. Mainly the media, mainly stories in the media about people who had been getting charged because their numbers had been accessed somewhere or other. So I suppose it was a media scare campaign. (male, purchaser)

[Laughs] *A fear campaign by the media.* (female, non-purchaser)

It's probably a feeling, a belief that's probably built up. It's not affected by things that I've experienced recently. You hear all those horror stories ...you see it on "A Current Affair". (male, non-purchaser)

This disclosure seemed to cause some embarrassment for the interviewees, as if there was some issue about being influenced by the media in this way. Nevertheless, for all of the interviewees in this study, their perceptions about the risks involved with online purchasing appeared to originate from mass media sources. Diffusion of innovation theory suggests that mass media channels create knowledge and spread information rapidly by being able to reach large audiences and can change weakly held attitudes (Rogers 1995). This could be the case in our study where the findings suggest that the media has been the only communication channel that formed the interviewees' perceptions of risk about purchasing online.

Change agent communications as risk relievers

Despite this mass media influence on their perceptions of risk, over half of the interviewees reported that they have purchased online. Some of the literature discussed earlier suggests how change agents, such as marketers or web designers, provide communications on a website to create trust in online stores. Communication messages on websites regarding security are provided to act as risk relievers to overcome consumers' negative perceptions about purchasing online thereby creating consumer trust in online stores (Biswas and Biswas 2004; Wang et al. 2004). This information is placed on websites in the form of written statements about encryption technology or policies on returns or refunds and/or visual indications of secure payment systems through the use of logos or icons (Sherrard and Buchanan-Oliver 2000). If the purchasers in our study actively sought out these risk-relievers on a web site, it would suggest that change agent communications mediate their perceptions of risk thereby removing the barrier to online purchasing.

Of the six purchasers, only two demonstrated any depth of knowledge about secure payment systems and encryption indicators on websites.

They have a level of encryption, I think it's SSI at the moment, the secure socket interface, something like that. You can see that the unlock has become a padlock. It's claiming that it's 100% encrypted and that your data is safe. (female, purchaser)

Via credit card and my SSL 128 bit. I use the strongest they let you use ... It's a level of encryption ... but it can be broken by a bunch of computers in less than a week. (male, purchaser)

For the other four, their knowledge about secure payment systems seemed to be sketchy at best. Mostly, they assumed that an organisation with a strong reputation would have good security for online transactions as is evidenced by the following quotes.

I can take a small risk with a very large company, which, you know, has probably got its security systems very much under control. It was a very large organisation that obviously had the best security procedures available to them, the best technology and best encoding. (male, purchaser)

I'm sure they're encrypted and they're safe up to a point.... (female, purchaser)

The way I figure it, if you go to a reasonably large site they will have the security precautions in place, ... they'll have systems to do that ... (male, purchaser)

As can be seen from the above quotes, despite their heightened perceptions of the risks communicated through the mass media, the purchasers demonstrates little need for reassurance about secure payment systems through change agent's communications on websites. Rather, they assume that these safeguards are in place as part of a site's reputation suggesting that the online store's reputation is the most important factor that acts as a risk reliever.

In synthesising this discussion on communication sources and perceptions of risk, two important findings are highlighted. First, the interviewees' perceptions of risk originate and are sustained by the media rather than through personal or interpersonal communications of experience. Second, those interviewees who have purchased online did not seek out any change agent communications about secure payment systems that might act as risk relievers, rather the reputation of the site was the most important factor. If the media appears to be the primary communication source creating and sustaining the interviewees' perceptions of risk about online purchasing, how do their social communication sources mediate these negative perceptions? The next section explores this question.

Influence of social communication sources

Interpersonal communication plays an important role in the diffusion of an innovation, particularly in cases where there is perceived social, or economic risk involved (Rogers 1995), as is the case with using the Web for purchasing. Moreover, the theory identifies that interpersonal communication channels involving face-to-face exchanges are usually most effective for changing strongly held attitudes and are more influential for later adopters of an innovation (Rogers 1995). So, we should be able to anticipate that referents, such as family and friends might either sustain or mediate strongly held beliefs about the risk of shopping online, particularly if these referents have already made purchases online.

The social communication sources investigated in this study represent interpersonal communication with friends and peers with whom the interviewee interacts. Two themes emerged from the interviews, that of *being influenced* by others about using the Web for purchasing and *acting as influencers*, that is, influencing others about using it.

Being influenced

The findings suggest that for purchasers, friends or acquaintances have had some influence that may have re-enforced their intentions to purchase online. It is also possible to see influences from a range of sources, such as 'experts' in the information technology area, friends and an online communication channel through an email list as evidenced by the following quotes:

... I've heard from friends that you have to be careful. (female, purchaser), talking about purchasing online.

... a couple of friends in IT and you just speak to them and realise that the security risks are minimal. (male, purchaser)

I'm on the technical mailing lists so whenever a site or company does something bad everyone seems to hear about it. I know of sites that rate buyers and sellers. (male, purchaser).

A predisposition to adopt an innovation may be modified by socially transmitted messages about the innovation (Midgley and Dowling 1993) and individuals often act in ways that are consistent with their social groups (Childers and Rao 1992). In our study, it is not known whether the purchasers were non-adopters at the time of the communications and subsequently became adopters or if they were already adopters and their social communication sources simply

supported their existing behaviour. The effectiveness of ‘word of mouth’ communications from interpersonal sources results from it being perceived as more credible and generated by people who do not have a vested interest in a product or service (Wirtz and Chew 2002). Moreover, innovators or opinion leaders often assist in generating positive word of mouth communications to imitators (Rogers 1995). Therefore, in our study, those communication sources identified as influencers may represent the early adopting group who communicated their experiences to the interviewees, who already may have been imitators in the diffusion process.

Acting as influencers

As shown above, the purchasers’ social communications sources re-inforced their adoption decisions to some extent but when asked if they would be likely to influence others, this group appeared to be reluctant to advocate online purchasing as these quotes suggest:

I wouldn't go around preaching to people - you must buy from the Internet. Or, you know, I've done it so you should do it. (male, purchaser).

I wouldn't recommend it to anyone. (female, purchaser).

It's an individual's choice, I wouldn't push them towards it. (male, purchaser)

Diffusion of innovation theory suggests that interpersonal communication with a satisfied adopter is likely to precipitate adoption by an individual who may have a positive attitude towards the innovation but has not yet adopted (Rogers 1995). The findings in our study suggest that this is not happening. All of the purchasers had satisfactory experiences shopping online, in that they did not experience any problems with credit card security or not getting the products they wanted. And yet these responses suggest they are not willing to act as influencers for others who might be considering online purchasing. Based on the themes identified in the earlier discussion, if interpersonal sources of influence in a person's social communication networks are not speaking positively about the innovation of purchasing online then it is unlikely that they are mediating other people's perceptions of risks created by the mass media.

IMPLICATIONS OF THE FINDINGS

An important aspect in the later stages of the diffusion process is the flow of communication between “today’s users and tomorrow’s, or next year’s, potential users” (Oren and Schwartz 1988, p. 274). The interviewees who do not purchase online believe that shopping on the Web is the way of the future. Moreover, this group indicated that they would consider using the Web as another way of purchasing, particularly for grocery products, when the security issues had improved. However, the question still remains as to how they will know that this has happened. The findings suggest that although purchasers have been influenced about online purchasing to some degree by their interpersonal communication sources, they were not particularly inclined to influence others, even though they had had positive experiences.

This may be a critical issue affecting the slower than anticipated acceptance of online purchasing since the diffusion of an innovation is so dependent on interpersonal communication in the later stages. In our study, the interviewees' lack of word-of-mouth communication may be linked to the degree of confidence that a person might have in knowing what others need and like and the resulting risk of making an unsuitable recommendation (Wirtz and Chew 2002). This may be as a result of the perceived tie strength of the relationship, which may moderate the word-of-mouth recommendations. Strong tie relationships tend to exchange more information and would most likely generate stronger word-of-mouth recommendations compared to weak ties (Wirtz and Chew 2002). The interviewees in our study were responding to probing questions about word-of-mouth recommendations for purchasing online in an abstract way. Therefore, it is not possible to determine whether their responses were due to this abstraction rather than if interviewees had been required to nominate a specific individual to whom they would make such a recommendation.

LIMITATIONS OF THE STUDY AND FUTURE RESEARCH DIRECTIONS

We acknowledge that there are limitations with a qualitative study that need to be addressed. These include lack of generalisability of the results and the cross sectional nature of the study. However, these limitations can be reduced by clearly demonstrating the steps taken to reduce their effect (Creswell 1994). This study was undertaken in an Australian metropolitan city using a small, purposive sample. While the findings may not be generalisable to the Internet population as a whole, the individuals interviewed had used the Web and in some cases had actually made online purchases. Thus, the sample was able to provide information regarding the phenomenon being researched. The study was cross sectional in nature and the interviews represented a moment in time where the respondents were required to recall their experiences. To reduce issues with recall, care was taken to avoid identifying dates of activities but rather focussed on capturing the perceptual and experiential aspects of the events.

This qualitative study suggests two key avenues for future research. First, the study provides insights into how the media, change agents and social communication sources influence the interviewees’ perceptions of risk about using the Web for purchasing. Further research should explore in more depth how combinations of these sources might impact on a person's perceptions of risk about purchasing online. Second, the research did not explore the influence of online

communication channels in the diffusion of innovation process. Further research should be undertaken into how a person's interactions with referents in their online communication channels such email, virtual communities and discussion groups might influence individuals' perceptions of risk of purchasing online. Since an individual's communication sources are important in the diffusion of an innovation, conducting future research within an interpretist methodology will provide rich insights not readily apparent through quantitative methods that will contribute to a deeper understanding of how these sources influence consumer acceptance of purchasing on the Web.

CONCLUSION

By undertaking a qualitative approach to examining the influence communication sources in the diffusion of online purchasing, our findings suggest that the mass media exert a significant influence on the interviewees' perceptions of risk about this medium. Moreover, our findings suggest that purchasers often fail to seek out change agents' communication strategies about secure payment options aimed at minimising anxiety about risk when considering purchasing online. Our findings also suggest that the influence of interpersonal communication sources do little to mediate the popular media's effect on perceptions of risk. We conclude that further interpretive research should be undertaken in this area to contribute to a greater understanding of the effect of communication sources on the diffusion of the Web for purchasing by uncovering consumer beliefs, attitudes and experiences that would not be evident with quantitative methods.

REFERENCES

- Australian Bureau of Statistics (2002) Catalogue No. 8146.0 Household use of Information Technology. 2001-2002. <http://abs.gov.au/Ausstats/abs@nsf/> accessed 30/10/03
- Bhatnagar, A., Misra, S., & Rao, H. R. (2000) On risk, convenience and Internet shopping behaviour, *Association for Computing Machinery, Communications of the ACM*, 43 (11), 98-116.
- Bhatnagar, A., & Ghose, S. (2004) Segmenting consumers based on the benefits and risk of Internet shopping. *Journal of Business Research*, 57 (7), 758-767.
- Biswas, D., & Biswas, A. (2004) The diagnostic role of signals in the context of perceived risks in online shopping: do signals matter more on the Web? *Journal of Interactive Marketing*, 18 (3), 30-45.
- Butler, T. (1998) Towards a hermeneutic method for interpretive research in information systems, *Journal of Information Technology*, 13, 285-300.
- Cheung, C. M. K., & Lee, M. K. (2001). Trust in Internet Shopping: Instrument Development and Validation through Classical and Modern Approaches. *Journal of Global Information Management*, 9 (13), 23.
- Childers, T., & Rao, A. (1992) The influence of familial and peer-based reference groups on consumer decision, *Journal of Consumer Research*, 19(2), 198-212.
- Cox, D. F. & Rich, S. U. (1964) Perceived risk and consumer decision making – the case of telephone shopping, *Journal of Marketing Research*, November, 32-39.
- Creswell, J. W. (1994) *Research Design: Qualitative and quantitative approaches*, Sage Publications, Thousand Oaks.
- Davis, F., Bagozzi, R., & Warshaw, P. (1989) User acceptance of computer technology: a comparison of two theoretical models, *Management Science*, 35 (8), 982-1003.
- Dowling, G., & Staelin, R. (1994) A model of perceived risk and intended risk-handling activity, *Journal of Consumer Research*, 21, 119-134.
- Festervand, T. A., Snyder, D. R. & Tsalikis, J. D. (1986) Influence of catalog vs. store shopping and prior satisfaction on perceived risk, *Journal of the Academy of Marketing Science*, 14 (Winter), 28-36.
- Gopal, A., & Prasad, P. (2000) Understanding GDSS in symbolic context: Shifting the focus from technology to interaction, *MIS Quarterly*, 24 (3), 509-547.
- Goulding, C. (1999) Consumer research, interpretive paradigms and methodological ambiguities, *European Journal of Marketing*, 33, (9/10), 859-873.
- Guba, E. G., & Lincoln, Y. (1994) Competing paradigms in qualitative research in *The Handbook of Qualitative Research*, edited by Denzin, N. K. and Lincoln, Y., Sage Publications, Thousand Oaks, CA.
- Jacoby, J., & Kaplan, L. B. (1972) The components of perceived risk, *Advances in Consumer Research*, Vol. 1, M. Venkatesan Ed., Urbana, IL. Association for Consumer Research, 382-392.
- Kaplan, L. B., Syzibillo, G. J., & Jacoby, J. (1974) Components of perceived risk in product purchase: a cross-validation, *Journal of Applied Psychology*, 59 (3) 287-91.

- Klein H. K., & Myers, M. D. (1999) A set of principles for conducting and evaluating interpretive field studies in information systems, *MIS Quarterly*, 23 (1), 67-94.
- Kvale, S. (1996) *InterViews: an introduction to qualitative research interviewing*, Sage Publications, Thousand Oaks, CA.
- Lee, A. (2001) Challenges to qualitative researchers in information systems, in Trauth, E.M. (Edn) *Qualitative Research in IS: Issues and Trends*, Idea Group Publishing, USA.
- Lee, E.J., Lee, J., & Schumann, D. W. (2002) The influence of communication source and mode on consumer adoption of technological innovations, *Journal of Consumer Affairs*, 36 (1), 1-27.
- Mahajan, V., Muller, E., & Bass, F. (1990) New product diffusion models in marketing: a review and directions for research, *Journal of Marketing*, 54, 1-26.
- McCorkle, D. E. (1990) The role of perceived risk in mail order catalog shopping, *Journal of Direct Marketing*, 4 (4), 26-35.
- Midgley, D. F., & Dowling, G. R. (1993) A longitudinal study of product form innovation: the interaction between predispositions and social messages, *Journal of Consumer Research*, 19 (4), 611.
- Mitchell, V. W. (1999) Consumer perceived risk: conceptualisations and models, *European Journal of Marketing*, 33 (1/2), 163-95.
- Myers, M. D. (1997) Qualitative research in information systems, *MIS Quarterly*, June, 241-242.
- Oren, S S. and Schwartz, R.G. (1988) Diffusion of new products in risk-sensitive markets, *Journal of Forecasting*, 7, 273-287.
- Patton, M. Q. (1990) *How to use Qualitative Evaluation and Research Methods*, Second Edn, Sage, Newbury Park, CA.
- Rogers, E. M. (1995) *Diffusion of Innovation* (4th Edn), Free Press, New York.
- Sathye, M. (1999) Adoption of Internet banking by Australian consumers: an empirical investigation, *International Journal of Bank Marketing*, 17 (7), 324-334.
- Schiffman, L. G., Schus, S., & Winer, L. (1976) Risk perception as a determinant of in-home consumption, *Journal of the Academy of Marketing Science*, 4 (4), 753-763.
- Sherrard, M., & Buchanan-Oliver, M. (2000) The impact of security messages in an online shopping environment, Conference proceedings for *Australian and New Zealand Marketing Academy Conference*, Gold Coast, Australia, December. 1175-1179.
- Spence, H. E., Engel, J. F., & Blackwell, R. D. (1970) Perceived risk in mail order and retail store buying, *Journal of Marketing Research*, 7 (August), 364-369.
- Strauss, A., & Corbin, J. (1990) *Basics of qualitative research: grounded theory, procedures and techniques*, Sage publications, California.
- Trauth, E. M. (2001) The choice of qualitative methods in IS research, in Trauth, E.M. (Edn) *Qualitative Research in IS: Issues and Trends*, Idea Group Publishing, USA.
- Trauth, E. M., & Jessup, L. M. (2000) Understanding computer-mediated discussions: Positivist and Interpretive analyses of group support systems use, *MIS Quarterly*, 24 (1), 43-80.
- Urquhart, C. (2001) An encounter with Grounded Theory: Tackling the practical and philosophical issues, in Trauth, E.M. (Edn) *Qualitative Research in IS: Issues and Trends*, Idea Group Publishing, USA.
- Van den Poel, D., & Leunis, J. (1999) Consumer acceptance of the Internet as a channel of distribution, *Journal of Business Research*, 45 (3), 249-256.
- Wang, S., Beatty, S. E., & Fogg, W. (2004) Signaling the trustworthiness of small online retailers, *Journal of Interactive Marketing*, 18 (1), 53-69.
- Wirtz, J., & Chew, P. (2002) The effects of incentives, deal proneness, satisfaction and tie strength on word of mouth behaviour, *International Journal of Service Industry Management*, 13 (2), 141-162.
- Yoon, S.J. (2002) The antecedents and consequences of trust in online-purchase decisions, *Journal of Interactive Marketing*, 16 (2), 47-63.