Modelling Consumer Adoption of Internet Shopping

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Abstract

The study explores consumers' adoption of Internet shopping in the context of tourism products in Britain. The key objective is to propose a model for the prediction of Internet shopping adoption integrating individual and technology characteristics. Drawing upon Davis' (1989) Technology Acceptance Model (TAM), the proposed model identifies the structural relationships among eight constructs which were examined through Structural Equation Modelling (SEM) with AMOS. Essentially, this framework helps to explain issues such as reasons of adopting Internet shopping medium and contributing factors to Internet shopping adoption. The study employs an Internet Survey in the data collection stage. The method of analysis via SEM tested the hypothesised relationships among the constructs, as postulated in the model. The results explicitly clarified several key contributions and implications to marketing theory and practice.

Keywords: E-Business, Internet Shopping, Tourism, Consumer Behaviour, Technology Acceptance Model, SEM.

Introduction

The emergence of E-Marketing does not only benefit businesses but also consumers by providing many aspects of convenience that is not quite available in traditional shopping. Many studies have highlighted the benefits that Internet shopping offers to consumers which include ability to shop 24/7 at anywhere, to search and browse product, to compare prices, and to make payments within a few mouse clicks (Hoffman et al., 1995; Alba et al., 1997; Peterson et al., 1997; Strauss and Frost, 1999; Shim et al., 2001). Consequently, the Internet is rapidly becoming the fastest growing shopping channel with a 62 percent of Internet users had bought products from the Internet at least once over the first six months of 2004 (Aqute Research, 2004). It is likely that over time, the figures will increase significantly, moving from its infancy to a market with significant potential, with millions of people shopping online as more and more people are Internet savvy (Strauss and Frost, 1999; Shim et al., 2001).

Despite the significant increase, of Internet shopping in the past, fewer people than anticipated actually purchase electronically (Pastore, 2000). In reality, people increasingly use the medium to obtain information but not for purchasing products. Furthermore, there is very limited information on how and why certain groups of consumers conduct Internet shopping while others accept Internet shopping reluctantly. This can be evidenced by Ernst and Young's (2000) report on worldwide Internet survey, which indicates that Internet penetration growth in most countries did not justify the adoption of Internet shopping. As a result, consumer behaviour in the E-Market is obviously unpredictable by businesses. Therefore, this study sets out to fill the gaps in the current understanding of the potential of the E-Market and to illuminate how consumers are influenced in such a market. This study converges from three substantial areas of E-Business, that is E-Marketing, Internet shopping and Consumer Behaviour.

Research Background and Problems

The development of ICT has had a major impact on most industries, especially the tourism industry, one of the largest and fastest growing industries in the world. Among E-Businesses, tourism appears as one of the largest and fastest growing industries with flights and accommodations as the most popular (31%) of all online purchases (National Statistics, 2001; European Travel Commission, 2005). The Internet presents a great opportunity for travel businesses to use this medium to sell their products and services. For instance, various travel businesses such as airlines (e.g. EasyJet), hotels (e.g. Travelodge) and travel agents (e.g. First Choice) offer the facilities of online booking and payment via their website. As a result, flights tickets, accommodation and holidays have becoming the most popular online purchases (National Statistics, 2001).

In exploiting the market potential of the Internet shopping, travel businesses need a clear understanding of who actually buys online and their behavioural influence. Such information is crucial to travel businesses, as consumer purchase decision for a travel service involves a complex multi-stage process layered along a hierarchical set of activities (Fesenmaier and Jeng, 2000). Moreover, the purchase decision is vary considerably as a result of inherent personal characteristics such as innovativeness. Many studies have suggested profiles of Internet shoppers in terms of demographics and purchase patterns (e.g. Citrin et al., 2000; Blake et al., 2003; Bhatnagar and Ghose, 2004). However, most of them have been limited either to the context of non-UK markets or to tangible products such as books, groceries or food products. This study extends these borders to the Britain market and focuses on travel Internet shopping.

In understanding the issue of consumers' influence and behaviour toward Internet shopping some previous studies (e.g. Westland and Clark, 1999 & Shim et al., 2001) have utilised Fishbein's model (Fishbein and Ajzen, 1975). In the Fishbein model, attitude has been viewed as a predictor of intention and finally actual behaviour. However, the idea that intentional behaviour will predict actual behaviour is rather questionable in online setting, due to a large numbers of dropouts and those who only browsing and not buying (Lee and Johnson, 2002). This indicates that empirical evidence of the impact of the Internet on consumer shopping behaviour remains inconclusive (Jarvenpaa and Todd, 1997). This paradox has resulted in mixed opinions regarding the future of E-Marketing amongst researchers and practitioners. Some studies view that E-Marketing is an over-hyped, transient fad (e.g. Forrester Research, 2000 & Holloway and Beatty, 2003), while others maintain that the impact of the E-Marketing is still promising because it performs a supporting role for existing marketing activity (Rowley, 1996; Reinders and Baker, 1998; Hoffman and Novak, 1996; Jobber, 2004).

As most previous work on Internet shopping has focused on the intentional behaviour rather than the actual behaviour of Internet shoppers, this study fills this gap by studying the actual Internet shoppers' behaviour in terms of the driving factors to their Internet shopping adoption which converge personal influences as well as technological influences.

Research Objectives
In brief the research objectives are as follows:
i.   To propose a model of Internet shopping adoption for travel products.
ii. To apply the Technology Acceptance Model (TAM) in examining the driving factors of travel Internet shopping adoption.
iii. To explore the relationships between the driving factors and the adoption of travel Internet shopping.
iv. To present contributions of the findings to theory and practices.

The findings suppose to facilitate an understanding of the factors associated with the adoption of travel Internet shopping, thereby enabling researchers, practitioners and policy makers to better develop appropriate strategies to enhance and promote Internet shopping to future users while retaining existing customers.

Research Framework
Based on established pertinent theoretical foundations and literatures, a research framework had been developed to investigate the factors that influence the adoption of travel Internet shopping within the context of Britain consumers. The Davis' (1989) Technology Acceptance Model

(TAM) was chosen as the basis for developing a conceptual model explaining consumers' Internet shopping adoption due to its consistent capability to explain a substantial proportion of variances between behavioural intention and actual behaviours derived mainly from research into the purchase of technology related products (Davis et al., 1989; Mathieson, 1991; Adam et al., 1992). In particular, the proposed model seeks to take advantage of the validity and reliability of perceived usefulness (PU) and perceived ease-of-use (PEU) in the TAM by adding other constructs in order to improve explanatory and predictive power (Taylor and Todd, 1995; Igbaria et al., 1996; Jiang et al., 2000; Gefen and Straub, 2000). As presented in Figure 1, the proposed model suggests that consumer adoption of travel Internet shopping are determined by i) PU and PEU, ii) Personal Characteristics (consumer involvement, consumer innovativeness and opinion leadership) and iii) perceived risk and trust. As a result, 15 hypotheses were generated and tested (see Table 1.).
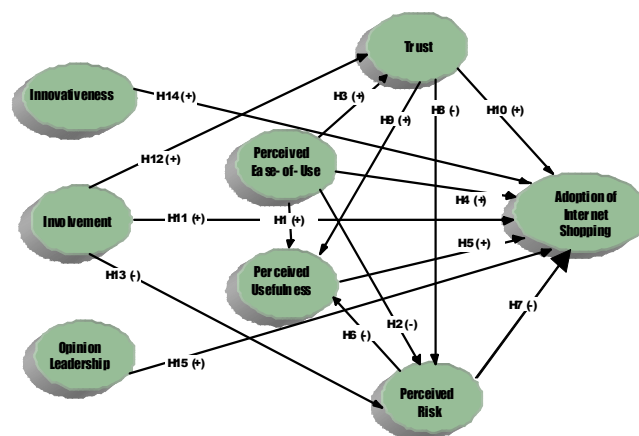

Fig 1. Proposed Model and Hypotheses

Methodology
The primary data collection commenced with qualitative data via focus group discussions, which were conducted in a non-structured and natural manner. The most prominent themes and issues were extracted from the focus group findings for questionnaire design purposes. They were also used to support the development of conceptual framework as well as the measurement items of the questionnaire. This was followed by the quantitative data collection which was Internet survey.

Internet Survey
Due to the nature of the research, accessibility to the target audience and facilities available, this study employed Internet Survey which involved sending e-mail invitations to selected respondents with a link to a web-based questionnaire. It was designed and pilot-tested several times, utilizing the latest e-survey software known as SNAP to the survey page were used as a vehicle for inviting and reminding

respondents to participate for the survey. To encourage participation, this study offered the respondents the opportunity to enter into a lucky draw to win a flight voucher sponsored by a local airlines company.

An email database acquired from a survey firm represents the total population of Internet shoppers in the Britain. Considering parameters imposed and the security and privacy of respondents', probability sampling was deployed. Sample of emails were picked at random by a generated sampling system, similar to RDD (random digital dialling). This approach deemed to permit generalizations.

Data Analysis

The procedure used to develop the research measures was based on the guidelines suggested by Churchill (1979). First, the measurement items were refined and validated using the most commonly used classical approach via Reliability Test and Exploratory Factor Analysis. Then, the constructs were again validated using Confirmatory Factor Analysis in the SEM analysis.

SEM was utilised to evaluate how well the proposed conceptual model of Internet shopping adoption that contains observed indicators and hypothetical constructs explains or fits the collected data (Bollen, 1989a & 1989b; Hoyle, 1995). Through SEM procedures, simultaneous examination and explanation of the inter-related dependence relationships among constructs is possible (Reisinger and Turner, 1999). It also provides the ability to measure or specify the structural relationships among sets of unobserved (latent) variables, while describing the amount of unexplained variance (Hoyle, 1995; Byrne, 1998; Davies et al., 1999; Tuner and Reisinger, 2001). Three types of overall model fit indices were utilized in measuring the model: Absolute Fit Measures (AFM), Incremental Fit Measures (IFM), and Parsimonious Fit Measures (PFM) (Hu and Bentler, 1995; Byrne, 1998; Hair et al., 1998; Maruyama, 1998). AFM index was used to directly evaluate how well an a priori theoretical model fits the sample data, while an IFM index was used to assess the proportionate fit by comparing a target model with a more restricted, nested baseline model. Then the PFM was used to diagnose whether model fit has been achieved by over-fitting the data with too many coefficients.

Results and Discussions

In resolving the research questions, a series of hypotheses was tested to identify the structural relationship between the constructs on the initial Internet shopping adoption model presented in Figure 1 and Table 1.

The relationships between the constructs were examined based on t-values associated with path coefficients between the constructs. If an estimated t-value is greater than a certain critical value (p<.05, t-value=1.96), the null hypothesis that the associated estimated parameter is equal to 0 is rejected. Subsequently, the hypothesised relationship was supported.

The data analysis of SEM was carried out in accordance with a two-step method (Anderson and Gerbing, 1988) where "the measurement model is first developed and evaluated separately from the full SEM" (p.191). Accordingly, the first step in the data analysis was to establish the unidimensionality, reliability, convergent and discriminant validity of the construct with Confirmatory Factor Analysis (CFA). All measurement models were within the accepted thresholds for CFA.

Secondly, the full proposed structural model was estimated on the cleansed measurement models. The fit indices were below acceptable thresholds, showing inadequate fit to the data (χ^2=393.905; df=191), and some modifications were required to achieve the best fit threshold. Subsequently, modifications were carefully made to the hypothesised model based on the SEM output suggestions. However, it is important to note that the formulation of the alternative models was guided by substantive theoretical and empirical considerations and practical meaningfulness (Hair et al., 1998).

Thirdly, based on the model modifications, four alternative models were developed and tested via SEM to examine which model performed best in explaining the Internet shopping adoption for travel products. For each model, overall fit, predictive power and the significance of the path were reported. The result suggested that the fourth model is the best model to predict the adoption of travel Internet shopping due to its goodness-of-fit indices. Eventually, the final refined model was generated and subsequently accepted, as it is the most parsimonious model and represents the best fit to the data (see Figure 2 and Table 1).

Fig 2:   Final Model and Paths
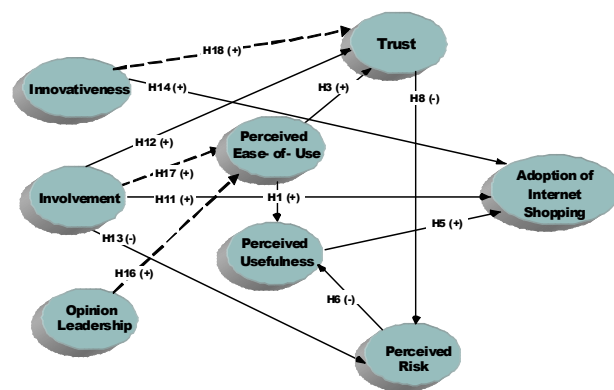
Note: the dotted lines represent new paths suggested by SEM.

In summary, of the 15 proposed hypothesized paths, 9 of them were found to be statistically significant. The other 6 hypothesised paths were found to be insignificant. However, interestingly, 3 new causal paths were found from the refined model results; they were (Opinion Leadership to PEU); (Involvement to PEU) and (Innovativeness to Trust). By the examination the interrelationships of each hypothesis path, this study has explicitly highlighted its contributions to literatures, theories and practitioners.

The Model of Internet Shopping Adoption
The final model explains all significant relationships between factors that influencing Internet shopping adoption. These relationships were then validated against other research findings to ensure that generalisation of the findings could be made. The critical factors that lead consumers to shop products from the Internet are discussed as follows:

Perceived Usefulness (PU) and Perceived Ease of Use (PEU)
As predicted, PU was positively correlated with the adoption of travel Internet shopping and PEU. The results validate the postulation in the TAM that PU is positively related to PEU and behavioural intention (Davis, 1989). These relationships are expected, as many previous studies have found the same effects of PEU on PU and behaviour intention (e.g. Mathieson, 1991; Adams et al., 1992; Igbaria et al., 1995; Agarwal and Prasad, 1997; Gefen and Straub, 1997). The result suggests that PU is a major determinant of travel Internet shopping adoption (see H5).

It demonstrates that ease-of-use alone does not engender Internet shoppers' decisions to adopt travel Internet shopping. Instead, Internet shoppers will use travel Internet shopping resources that are perceived to be useful and to easy-to-use interfaces. Both PEU and PU will generate favourable feelings towards using travel Internet shopping, leading to greater likelihood of adopting travel Internet shopping. Besides, this study also suggests that the ease-of-use of Internet shopping is able to build up trust as well as increasing the PU of travel Internet shopping. Thus, PU and PEU have been demonstrated to be fundamental determinants of technology adoption behaviour.

Consumer Innovativeness and Involvement
The result of positive direct relationship between consumer innovativeness and adoption explains that individual traits are as important as PU in making an individual adopting new technology. Thus, innovative shoppers are expected to comprehensively use the Internet shopping medium and are more likely to engage in web features when shopping for travel products online.

Alongside PU and consumer innovativeness, the study also found that there is a direct effect between consumer involvement and the adoption of travel Internet shopping. This indicates that consumer involvement is an essential contributor to the adoption of travel Internet shopping. Thus, it signifies long-term interest in a domain (Bloch, 1981) and this plays a central role in the adoption of Internet shopping. In this case, marketing communications, ease-of-use (navigability and usability), personalization and the customisation of website interfaces are vital, as they might lead to increased involvement levels and finally to the adoption of Internet shopping.

In contrast, the result suggested there is no significant relationship between opinion leadership and the adoption of travel Internet shopping. This result is expected, as opinion leadership is found to have a very strong correlation with consumer innovativeness, which eventually demonstrates a strong effect on Internet shopping adoption. Chan and Misra (1990) suggested that opinion leadership is an important descriptive personal characteristic of innovators. Since opinion leadership may be an indication of innovativeness, opinion leaders may be created from early adopters to persuade later adopters to try new products or services (Chan and Misra, 1990). Despite the insignificant role of opinion leaders towards adopting travel Internet shopping, businesses may need to consider the role of opinion formers in influencing Internet users' decisions to adopt travel Internet shopping.

Perceived Risk and Trust
As highlighted by many studies (Jarvenpaa et al.,2000; Friedman et al., 2000; McKnight et al., 2002), the critical role of trust is a critical area in the domain of Internet shopping. Consumers could overcome their fear, derived from perceived risk of Internet shopping, by building up trust in a website, or even in the entire Internet shopping environment. This notion has been found to support the result, where trust in travel Internet shopping has a negative relationship with perceived risk. The more trust shoppers have in travel Internet shopping, the lower their risk perception will be. Subsequently, if shoppers have low perceptions of risk related to Internet shopping, they will appreciate the usefulness of Internet shopping more and as a result will be more likely to adopt travel Internet shopping.

Besides, the result also demonstrates consumer involvement has positive effects on both trust and PR with regard to travel Internet shopping. As previous researchers have discussed, consumer involvement is revealed to play a prominent role in explaining both trust creation and customer retention (Teichert and Rost, 2003). Similar to previous studies (Park and Lessig, 1981; Dawar and Parker, 1994 and Heilman, et. al, 2000), consumers with low product involvement are likely to perceive higher risk in relation to lesser-known brands than to well-known

brands and to rely on extrinsic cues, such as brand name, price and physical appearance, to perform product evaluations. This result implies that the more consumers are involved in their Internet shopping processes and activities, the more trust they are likely to have in the new shopping channel.   Additionally, the more shoppers are involved with travel Internet shopping, the less risk they are likely to perceive in relation to this medium.

Consumer Involvement and Perceived Ease-of-use
In the refined model, a new relationship was found between consumer involvement and the PEU of travel Internet shopping. This link explains that the more involved shoppers are in travel Internet shopping, the less complicated they see it as being. As PEU relates to the intrinsic features of the technology, such as whether it is easy to use, easy to learn, flexible or free of effort (Davis, 1989), essentially, this new link means that the perception of simplicity of travel Internet shopping depends on the shoppers' involvement, which is based on their inherent needs, values and interests (Zaichkowsky, 1985). In Internet shopping, information retrieval is interactive, and interaction requires both the user and the system play different roles in performing different tasks (Beaulieu, 2000); thus, this affects the users' involvement levels. This link suggests that the simplicity of shopping via the Internet is based on how much involvement is needed to engage with the systems.

Opinion Leadership and Perceived Ease-of-use
The second relationship found is between opinion leadership and PEU of travel Internet shopping. Although earlier opinion leadership is found not to affect consumer adoption of Internet shopping, it actually has an indirect influence on consumer adoption via PEU and PU.   The new opinion leadership–PEU link is considered as a new addition to the TAM as a very limited study extending the TAM to opinion leadership characteristics.   However, this new finding is reasonably acceptable, since many studies have indicated that Davis' (1989) PU and PEU are conceptually similar to Rogers' (1995) relative advantage and complexity, which ultimately influence consumer adoption (Davis, 1989; Moore and Benbasat, 1991; Karahanna et al., 1999). This argument corresponds with Rogers' (1995) profile of early adopters; in that opinion leadership is one of their traits. Explicitly, PEU decreases when people lack opinion leadership qualities, and eventually decelerates the adoption of travel Internet shopping. Similar to the first path, this new path extends the PEU construct of the TAM through consumer characteristics (i.e. consumer involvement and opinion leadership).

Consumer Innovativeness and Trust
Finally, the third relationship found is between consumer innovativeness and trust in Internet shopping.   This link explains that the more

innovative characteristics Shoppers have, the more likely they will be to trust travel Internet shopping. Some consumers are naturally attracted by any novelty: new products, new services, new ideas, new selling techniques or new payment modes. They are usually called innovators (Kirton, 1976 & 1980; Foxall, 1984 & 1986). Consumer innovativeness is often described as the psychological trait characterising those consumers who adopt new products and ideas, who tend to be venturesome, eager to live new experiences, always seeking new sensations, and in search of everything new and different (Roehrich, 2004). Therefore, in some ways, these traits demonstrate that Internet shoppers are more trusting (Donthu and Garcia, 1999) as compared to non-Internet shoppers. Hence, Internet shoppers who appear to be innovators perceive Internet shopping as trustworthy. This finding lends credence to Hoffman and Novak (1996), Donthu and Garcia (1999), Kim and Prabhakar (2000) and Jarvenpaa et al. (2000), who convincingly anticipated the profile of Internet shoppers, including trust and innovative traits. Accordingly, Mayer et al. (1995) suggested that a web trust model also needs to include consumer innovativeness as one of the dimensions in understanding the adoption of e-commerce. Thus, this new relationship link is acceptable, hence contributing to the literature on the theory of e-trust.

Research Contributions
Theoretical
First, the comprehensive, yet parsimonious model developed in the study makes an important contribution to the emerging literature on online consumer behaviour by grounding new variables, which is the influence of personal characteristics into a well-accepted general model (TAM) and then applying them to a new context of Internet shopping.

Second, the research model examines the 'actual' behaviour of the Internet shoppers rather than their 'intentional' behaviour. This is an important issue, as researchers have questioned the strength of the relationship between intentions and self-reported subjective use (e.g. Straub, et al., 1995).

Third, the results suggest that the final Internet shopping adoption model possesses substantial explanatory power.   The critical linkage of these variables with the adoption of Internet shopping provided reasonably high goodness-of-fit (GFI=.912, RMR=.034, RMSEA=.047); thus, the results provide convincing support for the theoretical framework of the study.

Fourth, the new links found between i) consumer innovativeness and trust, ii) consumer involvement and PEU iii) opinion leadership and PEU, highlight the significant role of these relationships in Internet shopping adoption as well as contribute to theories and literature. However, due to lack of previous

studies in the particular areas, these relationships need to be tested in different contexts.

Fifth, this study has extensively explored the E-Marketing industry, particularly in the travel business pertaining to consumer behaviour. The effort of understanding the nature and structure, facts and statistics with regard to the travel industry should be valued where this study responds to the calls for advanced research on Internet shopping for services (intangibles) made by various scholars in the marketing disciplines, such as Anckar (2003); Gefen and Straub (2003); Holloway and Beatty (2003) and Luarn and Lin (2003).

Methodological
First contribution is the development of robust measures for the study, which was developed based on theories, previous research findings and exploratory interviews. The study has adhered to guidelines suggested by Churchill (1979) in purifying all the measures, and then, the resulting measures were refined and validated according to Anderson and Gerbing's (1988) suggestions by using the SEM analytical technique. Hence, it could be argued that the current study is among the very few to have done this, with the notable exceptions of De Wulf (1999) and Koufteros (1999).

Second contribution is the application of Internet Survey, where an online software package was utilised to design and administer the survey. It is rare to the point of surprise that this new method of data collection (i.e. online survey) contributes similar functions as offline data collection (see Kehoe and Pitkow, 1998; McCoy and Marks, 2001). Thus, this contribution is to attest to the great opportunity to accelerate the research process via Internet Survey tools.

Practical
This study contributes to and extends the understanding of the Internet as a medium for commercial use in the business-to-consumer (B2C) arena. An understanding of reasons for electronic purchasing is particularly relevant in the context of predictions made regarding Internet shopping in the future (Swaminathan et al., 1999). From a managerial viewpoint, firstly, the findings provide support for investment decisions, and for decisions relating to the development of Internet services that address and take the concerns and wants of consumers into consideration.

Secondly, this study contributes to an understanding of how Internet facilities can be embraced by tourism businesses, and also how these facilities contribute to the development of E-Tourism in Britain. To this end, the framework proposed for analysing Britain's online consumer behaviour in order to gain an understanding of the antecedents of Internet shopping adoption could be used as a practical tool to predict how consumers behave online.

Thirdly, this study confirms that the convenience of Internet shopping attracts to consumers, as it enables them to shop at any time, from anywhere, as well as providing product information sources, lower prices and perceived control over purchase decisions. However, privacy and the security of personal and financial information during transactions are concerns amongst Internet shoppers. In this regards, travel businesses could adopt a more advanced e-marketing approach such as loyalty or membership programs, or referral programmes to encourage repeat purchase or word-of-mouth amongst adopters.

Future Research
The findings of the direct relationships of external variables over and above the TAM variables may be applicable in the Internet marketing settings; the TAM needs to be extended to include other mediating beliefs. Future research is suggested to further extend the TAM to encompass other theoretical constructs (Davis et al., 1989; Venkatesh and Davis, 2000; Gefen and Straub, 2000 & 2003). It would be interesting, for example, to explore the role of consumer satisfaction, shopping orientation, personal traits and social influences on the acceptance of Internet shopping.

Since the generalisability of the model is inherently limited to the travel products setting, the model and hypotheses should therefore be extended beyond the present context (e.g. to the e-banking industry and the Insurance industry). By doing so, future studies could extend the generalisability of the findings derived from the current study. This research direction appears to be potentially rewarding because the tourism industry is considered as the highest growth business on the Internet.

As for the measurement instruments, it should be noted that the scales used in the current study were context-specific; this prevented 'changeable setting', which can cause the meanings of items to vary according to study context (Giese and Cote, 2000). Therefore, this indicates that if any replication study were to be carried out beyond the Internet shopping context, some refinement to the indicators used for the constructs must be carefully considered.

Conclusion
Understanding consumers' adoption of Internet shopping is particularly important because a high level of adoption is associated with several key outcomes (e.g. repeat purchase and profit making). The proposed model of Internet shopping adoption developed in this study, is one of the very first studies to incorporate cognitive variables from the literature on consumer adoption of innovation and the TAM, and helps to initiate the integration of cross-disciplinary studies in E-Marketing field. The dimensions of the key drivers are carefully identified

and analysed. To conclude, this study's model provides an integration of existing research and a launch pad for future systematic research in the area of Internet shoppers' behaviour.

References

Adams, D. A., Nelson, R. P., & Todd, P. A. (1992). Perceived Usefulness, Ease of Use, and Usage of Information Technology: A Replication. *MIS Quarterly, 16*(2), 227-247.

Agarwal, R., & Prasad, J. (1997). The Role of Innovation Characteristics and Perceived Voluntariness in the Acceptance of Information Technologies. *Decision Sciences, 28(3)*, 557-582.

Agarwal, R., & Prasad, J. (1998). A Conceptual and Operational Definition of Personal Innovativeness in the Domain of Information Technology. *Information Systems Research, 9(2)*, 204-215.

Alba, J., Lynch, J., Weitz, B., Janiszewski, C., Lutz, R., Sawyer, A., & Wood, S. (1997). Interactive Home Shopping: Consumer, Retailer, and Manufacturer Incentives to Participate in Electronic Marketplaces. *Journal of Marketing, 61*(3), 38-53.

Anckar, B. (2003). Consumer Intentions in terms of Electronic Travel Distribution. *E-Service Journal, 2(2)*, 68-86.

Anderson, J. C., & Gerbing, D. W. (1988). Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach. *Psychology Bulletin, 103*, 411-423.

Aqute Research. (2004). Online Shopping in the UK. Available at: <URL: http://www.aqute.com> [Accessed: 1st April 2005]

Beaulieu, M. (2000). Interaction in Information Searching and Retrieval. *Journal of Documentation, 56*(4), 431-439.

Bhatnagar, A.., & Ghose, S. (2004). Segmenting Consumers Based on the Benefits and Risks of Internet Shopping. *Journal of Business Research, 57*(12), 1352-1360.

Bitner, M. J., Ostrom, A. L., Roundtree, R. I., & Meuter, M. L. (2000). Self-Service Technologies: Understanding Customer Satisfaction with Technology-Based Service Encounters. *Journal of Marketing, 64*(3), 50-64.

Blake, B. F., Neuendorf, K. A., & Valdiserri, C. M. (2003). Innovativeness and Variety of Internet Shopping. *Internet Research: Electronic Networking Applications and Policy, 13*(3), 156-169.

Bloch, P. H. (1981). Involvement Beyond the Purchase Process: Conceptual Issues and Empirical Investigation. *Advances in Consumer Research, 8*, 61-65.

Bollen, K.A. (1989a). *Structural Equations with Latent Variables*. New York: John Wiley & Sons Inc.

Bollen, K.A. (1989b). A New Incremental Fit Index for General Structural Equation Models. *Sociological Methods & Research, 17*, 303-316.

Byrne, B. M. (1998). *Structural Equation Modeling with LISREL, PRELIS, and SIMPLIS: Basic Concepts, Applications, and Programming.* Mahwah, NJ: Lawrence Erlbaum Associates Inc.

Byrne, B. M. (2001). *Structural Equation Modeling with AMOS: Basic Concepts, Applications, and Programming*: Lawrence Erlbaum Associates Inc.

Chan, K., & K. Misra, S. (1990). Characteristics of the Opinion Leader: A New Dimension. *Journal of Advertising, 19(3)*, 53-60.

Churchill, G. A. (1979). A Paradigm for Developing Better Measures of Marketing Constructs. *Journal of Marketing Research, 16*(February), 64-73.

Citrin, A. V., Sprott, D.E. & Silverman, S. N. (2000). Adoption of Internet Shopping: The Role of Consumer Innovativeness. *Industrial Management & Data Systems, 100*(7), 294-300.

Davis, F. D. (1986). *A Technology Acceptance Model for Empirically Testing New End-User Information Systems: Theory and Results*. Sloan School of Management: Massachusetts Institute of Technology.

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly, 13*(3), 319-340.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science, 35*, 982-1003.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1992). Extrinsic and Intrinsic Motivation to Use Computers in the Workplace. *Journal of Applied Social Psychology, 22*, 1111-1132.

Dawar, N., & Parker, P. (1994). Marketing Universals: Consumers? Use of Brand Name, Price, Physical Appearance, and Retailer Reputation as Signals of Product Quality. *Journal of Marketing, 58*(2), 81-95.

DeWulf, K. (1999). *The Role of the Seller in Enhancing Buyer-Seller Relationships: Empirical Studies in a Retail Context*. Gent, 276 p.

Donthu, N., & Garcia, A. (1999). The Internet Shopper. *Journal of Advertising Research, 39*(3), 52-58.

Ernst and Young. (2000). *Global Online Retailing*. New York: Ernst & Young LLP.

European Travel Commission. (2005). *Market by Country: UK Online Travel Market*. Available at: <URL: http://www.etcnewmedia.com/review/default.asp> [Accessed: 5th December 2005]

Fesenmaier, D., & Jeng, J. (2000). Assessing Structure in the Pleasure Trip Planning Process. *Tourism Analysis, 5*, 13-27.

Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley.

Forrester Research. (2000). *Global E-Commerce Model*. Available at: <URL: http://www.forrester.com/er/press/release.html> [Accessed: 10th January 2005]

Forrester Research. (2001). *UK Online Leisure Travel Will Reach £3.7 Billion By 2005*. Available

at: <URL: http://www.forrester.com/er/press/release/0,1769, 517,00.html> [Accessed: 10th January 2005]

Foxall, G. R. (1984). *Corporate Innovation: Marketing and Strategy*. London: Croom Helm.

Foxall, G. R. (1986). Managerial Orientations of Adaptors and Innovators. *Journal of Managerial Psychology & Marketing,*1, 24–27.

Friedman, B., Kahn, P. H., Jr., & Howe, D. C. (2000). Trust Online. *Communications of the ACM, 43*(12), 34-40.

Gefen, D., & Straub, D. (2000). The Relative Importance of Perceived Ease of Use in IS Adoption: A Study of E-Commerce Adoption. *Journal of the Association for Information Systems, 1*(8), 1-28.

Gefen, D., & Straub, D. W. (1997). Gender Differences in the Perception and Use of E-Mail: An Extension to the Technology Acceptance. *MIS Quarterly* , 21, 389.

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Inexperience and Experience with Online Stores: The Importance of TAM and Trust. *IEEE Transactions on Engineering Management, 50,* 307-321.

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in Online Shopping: An Integrated Model. *MIS Quarterly, 27*(1), 51-90.

Gefen, D., Straub, D., & Boudreau, M.-C. (2000). Structural Equation Modeling and Regression: Guidelines for Research Practice. *Communications of the Associations for Information Systems, 4*(7), 1-28.

Giese, L. J., & Cote, J. A. (2000). Defining Consumer Satisfaction. *Academy of Marketing Science Review (Online), 1*.

Hair, F. J., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate Data Analysis* (5th Ed.). Englewood Cliffs, NJ: Prentice Hall Inc.

Hair, F. J., Bush, P. R., & Ortinau, J. D. (2003). *Marketing Research: Within A Changing Information Environment* (2nd Ed.). Toronto: McGraw Hill-Irwin Canada.

Heilman, C. M., Bowman, D., & Wright, G. P. (2000). The Evolution of Brand Preferences and Choice Behaviors of Consumers New to a Market. *Journal of Marketing Research, 37*(2), 139-155.

Hoffman, D. L., & Novak, T. P. (1996). A New Marketing Paradigm for Electronic Commerce. *The Information Society, Special Issue on Electronic Commerce, 13*(Jan-Mar), 43-54.

Hoffman, D. L., & Novak, T. P. (1996). A New Marketing Paradigm for Electronic Commerce. *The Information Society, Special Issue on Electronic Commerce, 13*(Jan-Mar), 43-54.

Hoffman, D. L., Novak, T. P., & Chatterjee, P. (1995). Commercial Scenarios for the Web: Opportunities and Challenges. *Journal of Computer-Mediated Communication, 1*(3).

Hoffman, D. L., Novak, T. P., & Peralta, M. (1999). Building Consumer Trust Online. *Communications of the ACM, 42*(2), 80-85.

Holloway, B. B., & Beatty, S. E. (2003). Service Failure in Online Retailing: A Recovery Opportunity. *Journal of Service Research, 6*(1), 92-105.

Hoyle, R. H. (1995). The Structural Equation Modeling Approach: Basic Concepts and Fundamental Issues. In R. H. Hoyle (ed.), *Structural Equation Modeling: Concepts, Issues, and Applications*, 1-15. Thousand Oaks, CA: Sage Publications.

Hu, L. T., & Bentler, P. M. (1995). Evaluating Model Fit. In R. H. Hoyle (ed.), *Structural Equation Modeling: Concepts, Issues, and Applications*, 76-99. Thousand Oaks, CA: Sage Publications.

Igbaria, M., & Parasuraman, S. (1989). A Path Analytic Study of Individual Characteristics, Computer Anxiety, and Attitudes toward Microcomputers. *Journal of Management, 15*(3), 373-388.

Igbaria, M., Guimaraes, T., & Davis, G. B. (1995). Determinants of Microcomputer Usage via a Structural Equation Model. *Journal of Management Information Systems, 11*(4), 87-114.

Igbaria, M., Parasuraman, S., & Baroudi, J. (1996). A Motivational Model of Microcomputer Usage. *Journal of Management Information Systems, 13*(1), 127-143.

Igbaria, M., Zinatelli, N., Cragg, P., & Cavaye, A.L.M. (1997). Personal Computing Acceptance Factors in Small Firms: A Structural Equation Model. *MIS Quarterly*, 279-301.

Jarvenpaa, S. L., & Todd, P. A. (1997). Consumer Reactions to Electronic Shopping On the World Wide Web. *International Journal of Electronic Commerce, 1*(2), 59-88.

Jarvenpaa, S. L., Tractinsky, N., & Vitale, M. (2000). Consumer Trust in an Internet Store. *Information Technology and Management, 1*(1-2), 45-71.

Jarvenpaa, S. L., Tractinsky, N., Saarinen, L., & Vitale, M. (1999). Consumer Trust in an Internet Store: A Cross-Cultural Validation. *Journal of Computer Mediated Communication, 5*(2). Available at: <URL: http://www.ascusc.org/jcmc/vol5/issue2/jarvenpaa. html.> [Accessed: 5th May 2005]

Jiang, J. J., Hsu, M. K., Klein, G., & Lin, B. (2000). E-Commerce User Behavior Model: An Empirical Study. *Human Systems Management, 19*, 265-276.

Jobber, D. (2004). *Principles & Practice of Marketing* (4th Ed.). Berkshire, England: McGraw Hill International (UK).

Karahanna, E., Straub, D., & Chervany, N. (1999). Information Technology Adoption across Time: A Cross-Sectional Comparison of Pre-Adoption and Post-Adoption Beliefs. *MIS Quarterly, 23*(2), 183-213.

Kehoe, C. M., & Pitkow, J. E. (1997/1998). Surveying the Territory: GVU's Five www User Survey's. *The Worldwide Web Journal,* 1, 77-84. Available at: <URL: http://www.cc.gatech.edu/gvu/user_surveys/papers/ w3j.html> [Accessed: 10th February 2005]

Kim, K., & Prabhakar, B. (2000). *Initial Trust, Perceived Risk, and the Adoption of Internet Banking*. In Proceedings of the 21st International Conference on Information Systems, Brisbane, Australia, 10th -13th December 2000.

Kirton, M. J. (1976). Adaptors and Innovators: A Description and Measure. *Journal of Applied Psychology, 61*, 622-629.

Kirton, M. J. (1980). Adaptors and Innovators in Organizations. *Human Relations,* 3, 213-224.

Kotler, P., Armstrong, G., Cunningham, P. H., & Warren, R. (1996). *Principles of Marketing* (3rd Ed.). Scarborough: Prentice Hall Canada Inc.

Koufteros, X. A. (1999). Testing a Model of Pull Production: A Paradigm for Manufacturing Research Using Structural Equation Modelling. *Journal of Operation Management, 17*(4), 467-488.

Lee, M., & Johnson, K. P. (2002). Exploring Differences between Internet Apparel Purchasers, Browsers, and Non-purchasers. *Journal of Fashion Marketing and Management, 6*(2), 146-157.

Lewis, I., Semeijn, J., & Talalayevsky, A. (1998). The Impact of Information Technology on Travel Agents. *Transportation Journal, 37*(4), 20-25.

Luarn, P., & Lin, H.-H. (2003). A Customer Loyalty Model for E-Service Context. *Journal of Electronic Commerce Research, 4*(4).

Maruyama, G. M. (1998). *Basics of Structural Equation Modeling*: Thousand Oaks, CA: Sage Publications.

Mathiesen, M. (1995). *Marketing on the Internet*. Florida: Maximum Press.

Mathieson, K. (1991). Predicting User Intentions: Comparing the Technology Acceptance Model with the Theory of Planned Behaviour. *Information System Research, 2*(3), 173-191.

Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An Integrative Model of Organizational Trust. *Academy of Management Review, 20*(3), 709-734.

McCoy, S., & Marks, P. V., Jr. (2001). Using Electronic Surveys to Collect Data: Experiences from the Field, *AMCIS Conference*. Boston, MA, August, 2001

McKnight, D. H., Choudhury, V., & Kacmar, C. (2002). Developing and Validating Trust Measures for E-Commerce: An Integrative Typology. *Information Systems Research, 13*(3), 334-359.

Moore, G. C., & Benbasat, I. (1991). Development of an Instrument to Measure the Perceptions of Adopting an Information Technology Innovation. *Information Systems Research, 2*, 192-222.

MOSAIC. (2004). MOSAIC UK: The Consumer Classification for the UK: Experian Ltd.

Mueller, R. O. (1996). *Basic Principles of Structural Equation Modeling: An Introduction to LISREL and EQS.* New York: Springer-Verlag.

National Statistics. (2001). Internet Access: Households and Individuals. *National Statistics Omnibus Survey*. Available at: <URL:

http://www.statistics.gov.uk/press_release/archive.asp> [Accessed: 20th May 2005]

National Statistics. (2005, 24 January 2006). *Internet Access - 64% of Adults Access the Internet*. Available at: <URL: http://www.statistics.gov.uk/cci/nugget.asp?id=8> [Accessed: 5th June 2005]

Park, C. W., & Lessig, V. P. (1981). Familiarity and Its Impact on Consumer Decision Biases and Heuristics. *Journal of Consumer Research, 8*, 223-230.

Pastore, M. (2000). *Young Consumers Shy Away from E-Commerce*. Available at: <URL: http://www.clickz.com/stats/big_picture/demographics/article.php/386591> [Accessed: 5th December 2005]

Peterson, R. A., Balasubramanian, S., & Bronnenberg, B. J. (1997). Exploring the Implication of the Internet for Consumer Marketing. *Journal of the Academy of Marketing Science, 25*(4), 329-346.

Raymond, M., and J. Tanner. (1994), Maintaining Customer Relationships in Direct Sales: Stimulating Repeat Purchase Behavior, Journal of Personal Selling & SalesManagement, 14(4), 67-78.

Reichheld, F. F., Markey, R. G. J., & Hopton, C. (2000). Customer Loyalty: Applying the Traditional Rules of Business for Online Success. *European Business Journal 12*(4), 173-179.

Reinders, J., & Baker, M. (1998). The Future for Direct Retailing of Travel and Tourism Products: The Influence of Information Technology. *Progress in Tourism and Hospitality Research, 4*, 1-15.

Reisinger, Y., & Turner, L. (1999). A Cultural Analysis of Japanese Tourists: Challenges for Tourism Marketers. *European Journal of Marketing, 33*(11/12), 1203-1227.

Roehrich, G. (2004). Consumer Innovativeness: Concepts and Measurements. *Journal of Business Research, 57*(6), 671-677.

Rogers, E. M. (1995). *Diffusion of Innovations*. New York: The Free Press.

Rowley, J. (1996). Retailing and Shopping on the Internet. *Journal of Retail and Distribution Management, 24*(3), 26-38.

Shim, S., Eastlick, M.A., Lotz, S.L. & Washington, P. (2001). An Online Pre-Purchase Intentions Model: The Role of Intention to Search. *Journal of Retailing, 77*, 397-416.

Straub, D., Limayem, M., & Karahanna-Evaristo, E. (1995). Measuring System Usage: Implications for IS Theory Testing. *Management Science, 41*(8), 1328-1342.

Strauss, J., & Frost, R. (1999). *Marketing on the Internet: Principles of Online Marketing*. Upper Saddle River, NJ: Prentice Hall Inc.

Swaminathan, V., Lepkowska-White, E., & Rao, B. P. (1999). Browsers or Buyers in Cyberspace? An Investigation of Factors Influencing Electronic Exchange. *Journal of Computer Mediated Communication, 5*(2), 1–23.

Taylor, S., & Todd, P. A. (1995). Understanding Information Technology Usage: A Test of competing Models. *Information Systems Research, 6*(2*)*, 145-177.

Teichert, T., & Rost, K. (2003). Trust, Involvement Profile and Customer Retention - Modelling, Effects and Implications *International Journal of Technology Management, 26*(5 / 6), 621 - 639.

Turner, L. W., & Reisinger, Y. (2001). Shopping Satisfaction for Domestic Tourists. *Journal of Retailing and Consumer Services, 8*, 15-27.

Westland, J. C., & Clark, T. H. K. (1999). *Global Electronic Commerce: Theory and Case Studies*. Cambridge, MA: MIT Press.

Zaichkowsky, J. L. (1985). Measuring the Involvement Construct. *Journal of Consumer Research, 12*(December), 341-352.

Table 1: Hypotheses Test of Initial and Refined Model

Hypothesised Paths				Standardised Coefficient		t-value		Results
				Initial model	*Refined model*	*Initial model*	*Refined model*	
H1:	Perceived Ease-of-use	➔	Perceived Usefulness	.635	.657	8.134***	8.577***	Supported
H2:	Perceived Ease-of-use	➔	Perceived Risk	-.117	n/a	-1.642#	n/a	*Rejected*
H3:	Perceived Ease-of-use	➔	Trust	.343	.283	5.156***	4.080***	Supported
H4:	Perceived Ease-of-use	➔	Adoption	-.038	n/a	-.398#	n/a	*Rejected*
H5:	Perceived Usefulness	➔	Adoption	.403	.394	3.905***	6.184***	Supported
H6:	Perceived Risk	➔	Perceived Usefulness	-.183	-.225	-2.469**	-3.585**	Supported
H7:	Perceived Risk	➔	Adoption	-.193	n/a	-2.446#	n/a	*Rejected*
H8:	Trust	➔	Perceived Risk	-.429	-.472	-5.243***	-6.084***	Supported
H9:	Trust	➔	Perceived Usefulness	.065	n/a	.915#	n/a	*Rejected*
H10:	Trust	➔	Adoption	-.123	n/a	-1.714#	n/a	*Rejected*
H11:	Consumer Involvement	➔	Adoption	.139	.143	2.307**	2.511*	Supported
H12:	Consumer Involvement	➔	Trust	.246	.167	3.978***	2.608**	Supported
H13:	Consumer Involvement	➔	Perceived Risk	-.170	-.189	-2.560**	-2.803**	Supported
H14:	Consumer Innovativeness	➔	Adoption	.378	.430	4.443***	7.219***	Supported
H15:	Opinion Leadership	➔	Adoption	.124	n/a	1.438#	n/a	*Rejected*
H16:	Opinion Leadership	➔	Perceived Ease-of-use	n/a	.365	n/a	5.168***	New Path
H17:	Consumer Involvement	➔	Perceived Ease-of-use	n/a	.294	n/a	4.574***	New Path
H18:	Consumer Innovativeness	➔	Trust	n/a	.270	n/a	4.209***	New Path

*Note: ***p<.001; **p<.01; *p< .0, # insignificant path*
H16, H17 & H18 are new parameters/ paths