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RELATIONSHIP BETWEEN RISK AND INTENTION TO PURCHASE IN AN ONLINE CONTEXT: ROLE OF GENDER AND PRODUCT CATEGORY

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Abstract

Multiple studies have attempted to explain the online shopping behaviour of consumers both in Information Systems (IS) and Marketing literature. However, given the widening gap between actual and expected increase in Internet-enabled or web-based consumer purchase transactions, the need to investigate the underlying factors for on-line purchase behaviour assumes increased significance. Also, the gap between actual purchase behaviour of the consumer on Internet and that explained by existing research points to the possibility of some unexplained control variables influencing consumers' online shopping behaviour. Building on past research, our study incorporates gender and product category as two control variables and unlike prior studies takes an integrative perspective by examining the interactional role of gender and product category on online shopping behaviour. Our study results show that relationship between perceived risk and intention to purchase is moderated by interaction of gender and product category. One major finding of this study, that perceived usefulness mediates the relationship between perceived risk and intention to purchase, has significant theoretical implications for technology acceptance model in Internet context. Our study also indicates perceived usefulness to be the primary determinant of on-line purchase behaviour and points to likely non-significant role of perceived ease of use in influencing purchase intention. We discuss these results and provide implications for both theory and research.

Keywords: Online purchase, Product risk, Technology acceptance model, Gender difference.

1   INTRODUCTION

Information technology acceptance has interested IS researchers for number of years. Numerous studies based on technology acceptance model (TAM) (Davis, 1989) have been undertaken in different organizational contexts (Agarwal et al., 1998, 1999; Chau, 1996; Chau et al., 2002, Dasgupta et al., 2002; Venkatesh et al., 2000a; Venkatesh et al., 2000b). With the growth of Internet, TAM has been used to study Internet technology usage (Pavlou, 2001; Gefen et al., 2003), especially for individual's intention to purchase over Internet. However, use of Internet technology for purchase transactions is affected by risks associated with such transactions. For example, lack of physical interaction between buyer and the product induces an element of uncertainty in the mind of consumer about expected performance of the product purchased. Perceived risks associated with Internet technology have been studied in a number of prior studies (Pavlou, 2001; Ahn et al., 2001; Kim et al., 2000; Paraschiv et al., 2002) and have been found to relate significantly to intention to purchase (Pavlou, 2001). To study the effect of perceived risk on intention to purchase in depth, some of the earlier studies have also disaggregated perceived risk into different types of risks (Ahn et al., 2001; Bhatnagar et al., 2000; Paraschiv et al., 2002). Bhatnagar et al. (2000) found risks related to product category and financial aspects, as prominent influencers of online shopping behaviour of consumers. Product category contributes to perceived risk in terms of uncertainty associated with the product itself and relates to aspects like whether product would function as expected. Perceived risk is increased considerably if a product is technologically complex or satisfies ego-related needs or is sold at high price points (Bhatnagar et al., 2000). For example, while risk may not be high for book purchases, it may be considerably higher for products like computers, electronics items, or refrigerators, which are technically more complex. From this standpoint, product category (technically complex products versus generic products) may contribute significantly to risks associated with Internet purchases. In this study, we use product category as one of the important control variable for studying the relationship between perceived risk and intention to purchase.

Prior research in marketing and psychology literature has shown that a significant relationship exists between gender and the perception of risk (Meyers-Levy, 1986; Darley et al., 1995; Meyers-Levy, 1985; Nonis et al., 1996). These studies report differences in males' and females' perception of risk owing to differences in their "cue-sensitivity threshold" i.e. the ability to process the 'cues' provided by a product or service which influences the risk perception of an individual. Based on the above discussion, we can expect differences in risk perception across product categories and gender.

Using this as our premise, our primary objective in this study was to investigate the effect of product category and gender (as control variables) on the relationship between perceived risk and intention to purchase (using technology acceptance model) in Internet context. The study of product category and gender is significant from the marketing standpoint because these two variables have traditionally been important control variables to target products differently for any population.

We organize the paper as follows. We first review the literature in technology acceptance and buying behaviour over Internet. We then present our research model incorporating the effect of gender and product category in the extended TAM model proposed by Pavlou (2001) and research hypotheses. Further, we present results of our study followed by discussion. We conclude the paper by providing implications for research and practice.

2   THEORETICAL DEVELOPMENT

The technology acceptance model proposed by Davis et al. (1989) identifies perceived usefulness and perceived ease of use as two important constructs which affect an individual's behavioral intention to accept information technology. Majority of earlier studies have focused on information technology acceptance within an organizational context. Acceptance of technology by an individual in an

organizational setting is different from acceptance in other settings in that an individual uses technology in a trusted environment that is well understood and controlled. Such confined use of information systems tends to mitigate the role of risk associated with technology use. From this standpoint, it is understandable that the majority of earlier studies on technology acceptance model did not study the role of risk in shaping an individual's behavioral intention to use technology.

However, use of the Internet for e-commerce applications by individuals involves a certain degree of risk or uncertainty about the transaction. This risk could be attributed to factors, amongst others, such as lack of physical interaction between buyer and seller or the inability of consumer to touch, feel or examine the product before purchase. The role of such risk in influencing the purchase intention of consumers is gaining importance and has been analyzed in recent studies (Pavlou, 2001; Ahn et al., 2001; Kim et al., 2000; Paraschiv et al., 2002; Gefen et al., 2003). These studies have shown that there is a significant direct negative impact of perceived risk on intention to purchase over Internet. Some studies also conceptualize perceived risk as a multi-dimensional construct and disaggregate it further into different types of risks (Ahn et al., 2001;Paraschiv et al., 2002; Bhatnagar et al., 2000). A study conducted by Bhatnagar et al. (2000) confirms different levels of risk perceptions amongst on-line shoppers based on the product category of the purchased product. Prior research reported in marketing literature also establishes the importance of risk associated with a particular product category i.e. nature of product being purchased (Capon et al., 1980; Deshpande et al., 1993; Horton, 1979; Jacoby et al., 1972; Tiong et al., 1980; Zikmud et al., 1978). In this study, based on the work of Bhatnagar et al. (2000), we use product category (technically complex products versus generic products) as one of the control variable for the relationship between perceived risk and intention to purchase.

From the above discussion, two points clearly emerge: One, it is important to include perceived risk as an a-priori construct (in technology acceptance model) to study purchase intention of consumers. Second, perceived risk is a complex construct affected by different factors, of which product category is one prominent factor. From this, we can infer that a distinct relationship between perceived risk and purchase intention ought to exist for different product categories.

Though the studies reported above have identified product category as an important control variable for perceived risk, there is evidence in the literature that perceived risk could also vary across gender. Studies in marketing and psychology have reported the effect of gender on risk attitude of individual (Meyers-Levy, 1986; Darley et al., 1995; Meyers-Levy, 1985; Nonis et al., 1996; Andaleeb et al., 1995; Sexton et al., 1990). In the marketing literature, the concept of "cue sensitivity threshold" has been used to account for the differences between the risk-taking propensity of males and females (Meyers-Levy, 1986). Cue sensitivity threshold theory states that a person's sensitivity to the nature of the cues contained in a data set determines the judgment outcome. Meyers-Levy (1986) suggests that males apparent more risk tolerant behaviour is a result of their reduced sensitivity to risk cues. Other related studies posit similarly that males are less sensitive to risk cues compared to females (Darley et al., 1995; Meyers-Levy, 1985). Extant psychology and marketing literature also confirms that males tend to take more risk than females. For example, males are more likely to donate blood, a risky activity, (Nonis et al., 1996; Andaleeb et al., 1995), purchase risky products (Darley et al., 1995; Meyers-Levy, 1986), and make more risky business judgments than females would (Sexton et al., 1990).

Literature in decision-making also reports differences in risk nature of males and females toward financial decision-making. For example, Jianakoplos et al. (1998) report gender-based differences in the risk attitudes of individuals in financial decision-making. Brinig (1995) found that women adopt safer approaches than men when it came to making risky consumer decisions. Barsky et al. (1997) also report a lower risk propensity amongst women than men. Given this research base, we should expect that males and females to perceive different levels of risk for the same product owing to differences in their "cue-sensitivity threshold." Since the impact of perceived risk on purchase intention of consumers in Internet context has already been established (Pavlou, 2001), we can expect a different relationships between perceived risk and purchase intention for males and females because of difference in perceptions of risk across gender for the same product.

While the discussion above leads us to expect product category and gender to independently influence the relationship between perceived risk and intention to purchase, studies reported in the marketing literature point to a joint effect of gender and product category on perceived risk. Earlier studies in marketing and psychology literature have shown that females are more sensitive to situational cues related to self-evaluations (Lenny et al., 1983) and generate more accurate judgments of words presented at fast exposure rates (McGuiness et al., 1979). According to the selectivity model (Meyers-Levy, 1989; Meyers-Levy et al., 1991a; Meyers-Levy et al., 1991b), males often do not engage in comprehensive processing of all available information as a basis of judgement but instead are selective in contrast to females who tend to process more detail than males. This processing strategy implies that men will consider and rely on subsets of highly available cues. In addition, the selectivity model predicts that males and females will differ in the extent to which they notice subtle changes in the processing. These studies suggest that females are more sensitive to subtle stimulus or task factors. For example, the implicit level of risk associated with a product could serve as a subtle information cue that is differentially noticed by males and females. The preceding discussion suggests that perceived risk associated with a product or category of products could be construed differently by males and females. Using this argument, we can logically expect that males are likely to perceive lower risk for certain categories of product while females are likely to perceive lower risk for certain other categories of products while making purchases over Internet. We find support for the joint effect of gender and product category in a study (Carlsbad, 2000), which found that shopping behaviour online varied considerably by gender. The findings of this study indicate that females could be more active in few product categories while they could be absent in some others.

We summarize our preceding discussion by formulating four hypotheses. The first hypothesis relates to the overall relationship between perceived risk and intention to purchase. The second and third hypotheses relate to the independent effect of the control variables, product category and gender, on the relationship between perceived risk and intention to purchase. The fourth hypothesis relates to the joint effect of product category and gender on relationship between perceived risk and intention to purchase:

H1: Perceived risk (PR) will have significant relationship with intention to purchase (PI) in context of Internet.

H2: Perceived risk will have different relationship with intention to purchase for females compared to males.

H3: Perceived risk will have different relationship with intention to purchase for different category of products.

H4: Perceived risk will have different relationship with intention to purchase for females compared to males for different category of products.

Based on the original TAM proposed by Davis et al. (1989), we expect perceived ease of use and perceived usefulness to affect intention to purchase over Internet significantly. Though Davis et al.'s (1989) model refers to perceived ease of use and perceived usefulness in the context of use of the information technology, we can reasonably consider purchasing over Internet as one way of using Internet, apart from its other uses. From this standpoint, it is reasonable to hypothesize a significant relationship between perceived ease of use, perceived usefulness and intention to purchase:

H5: Perceived usefulness (PU) will have a significant relationship with intention to purchase in Internet technology context.

H6: Perceived ease of use (PEOU) will have a significant relationship with intention to purchase in Internet technology context.

The six research hypotheses are summarized in Table 1. Based on these hypotheses, our research model is presented in Figure 1.

Hypotheses	Relationship	Description
H1	PR-PI	Significant relationship between PR and PI
H2	PR-PI by Gender	Difference in PR-PI relationship across males and females
H3	PR-PI by Product Category	Difference in PR-PI relationship across product categories
H4	PR-PI by Gender and Product Category	Difference in PR-PI relationship across gender and product categories
H5	PU-PI	Significant relationship between PU and PI
H6	PEOU-PI	Significant relationship between PEOU and PI

Table 1:   Research Hypotheses
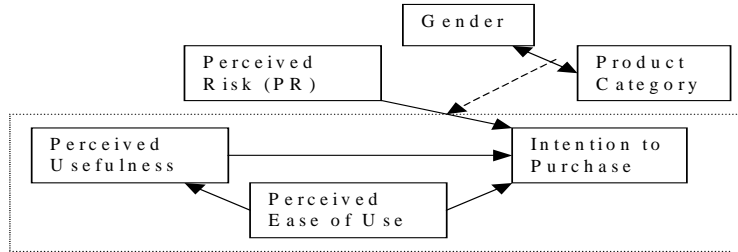

Figure 1:   Research Model

3   RESEARCH METHODOLOGY

This section describes our research methodology to study the intention to purchase using the web. The dependent variable in this study is behavioral intention to purchase online (PI). The independent variables are perceived usefulness of the purchase transaction (PU), perceived ease of use of the website (PEOU), and the perceived risk (PR). The control variables are gender and the product category. The survey instrument that was employed in this study included validated constructs for PU (Pavlou, 2001), PEOU (Pavlou 2001) and PI (Pavlou, 2001). The measure for risk included two components as defined by Ahn et al. (2001). This construct was pre-tested with 30 students and resulted in a standardized Cronbach alpha value of 0.75.

Product category was operationalized by having respondents visit two websites – one well-known, with a high product variety (www.amazon.com) and the other a specific site for electronic appliances only selling one brand (www.geappliances.com). Our reasons for choosing Amazon and GE Website for operationalizing are four fold. First, Amazon and GE website carry two different category of products. While Amazon website has all types of products i.e. it is difficult to categorize all products at Amazon into a specific category, products at GE appliances website can be categorized as 'domestic appliances'. Therefore, products at Amazon website belong to a 'generic' product category, those at GE website belong to 'domestic appliances' product category, which is 'technically complex' (Bhatnagar et al., 2000). Second, our aim in this study is to focus on the joint effect of product category and gender on relationship between perceived risk and intention to purchase. Therefore, we wanted to choose two websites, which differ not only across product category but also carry products viewed differently across gender. For example, GE Appliances is a well-accepted name in household consumer appliances and females tend to be more active shopper in household consumer appliances than males (Dholakia, 1999). Therefore, our choice of these two websites helps us to operationalize gender-based differences across product categories. Third, the operationalization for product category was based partly on the selectivity model from marketing literature (Meyers-Levy, 1989). This stream of literature suggests that the implicit level of risk associated with a product could serve as a subtle information cue that is differentially noticed by males and females. Since the GE Appliances website provides a single category and one brand of products while the Amazon website provides a multitude of brands and products, the two websites were expected to provide the prospective buyers with

different level of information cues, resulting in different levels of perceived risks. Though, it is logical to believe that since two websites, GE Appliances and Amazon are well known, they will present consumers with almost similar level of risk perception, we have focused on creating different perceptions of risk across these two sites based on nature of product and the range of the product carried by them, and not the one based on reputation of the web retailer. Finally, by choosing these two particular websites, we wanted to prevent confounding the risk perceptions of the users that could be attributed to "known" and unknown" websites and product category. We preferred not to choose specific products because we have operationalized product category risk in terms of "generic products" versus "technically complex" products.

The participants in the survey included graduate students in the part-time MBA program at a large urban university campus in the Washington DC metro area. Respondents were randomly requested to visit the website for Amazon (www.amazon.com) or that of GE Appliances (www.geappliances.com). The instructions requested respondents to use the website to select and purchase any product of their choice without completing the transaction. Of the 300 questionnaires handed out, we received 183 usable responses, giving us a response rate of 60.1%. Table 2 shows how our survey sample is distributed by gender and site visited. The sample is well represented by both males and females as well as by those who visited Amazon and the GE Appliances websites. Appendix A provides the factor loading and reliabilities of the measures used in this study.

| | Site visited | | Total |
	Amazon	GE	
Female	48	39	87
Male	45	51	96
Total	93	90	183

Table 2.   Respondents by gender and websites visited

4   RESULTS

In this study, product category and gender have been used as control variables. For each analysis we conducted two regression analyses (one for the PU-PI, PEOU-PI and PR-PI relationships; and the other for PEOU-PU relationship). We used interaction terms to identify the joint effects of variables on the relationships between the standard and extended TAM variables. Table 3 presents the results for the research model without the control effects of either gender or product category. The overall sample data show that, as expected, PU is a significant predictor of PI (H6). The relationship between PEOU and PI is weaker than the relationship between PU and PI. This is consistent with past studies that have found PEOU to be either a weak predictor of behavioral intention to purchase online (Gefen et al., 2000; Pavlou, 2001) or even non-significant in predicting intention to use (Chau, 1996; Szajna, 1996;Straub et al., 1995). All reported R^2 values are adjusted R^2 values. The R^2 for this model is .4439 – which is comparable to past TAM studies (Venkatesh et al., 2002b; Lederer et al., 2000; Igbaria et al., 1997).

Entire sample	DV	R^2adj	IV	β	p-value
Regression #1	PI	0.4439	PU	0.9208	<0.0001[***]
			PEOU	0.1333	0.0954[*]
			PR	-0.0545	0.1782
Regression #2	PU	0.3249	PEOU	0.5615	<0.0001[***]

Table 3.   Results for Hypotheses 1, 5 and 6

The observed relationship between PR and PI is not significant – although the directionality is consistent our hypothesis. This finding seems at variance with Pavlou's (2001) finding that PR is significantly negatively related to PI. This finding motivated us to investigate if PI and PR have significant relationship in absence of PU and whether PU mediates the relationship between PR and PI. Table 4 presents the results of our analysis to test for the mediating effect of PEOU. The results in Table 4 satisfy the four conditions put forth by Baron et al. (1986) for testing the mediator effect of a variable. Our analysis confirms that PU mediates the relationship between PR and PI which seems to be the reason why PR explains so little of variation in PI (6%) compared to variation explained by PU (44%).

Entire sample	DV	R^2adj	IV	β	p-value
Regression #1	PI	0.047	PR	-0.23	0.0020***
Regression #2	PU	0.057	PR	-0.167	0.0007***
Regression #3	PI	0.445	PR	-0.066	0.2563
			PU	0.994	<0.0001***
Regression #4	PI	0.44	PU	1.02	<0.0001***

Table 4:   Mediator relationship between PI and PR

Table 5 shows that gender by itself is not significant in moderating the PR-PI relationship. Since perceived risk has been operationalized using product category risk reflected in two websites, it is reasonable to conclude that lack of effect of gender on PR-PI relationship is not because of lack of control of which website the respondent visited. Table 6 shows that product category independently does not moderate the effect of PR on PI. Finally, Table 7 shows that both gender and product categories interact to influence the effect of PR on PI.

Entire sample	DV	R^2adj	IV	β	p-value
Regression #1	PI	0.4433	PU	0.9256	<0.0001***
			PEOU	0.1415	0.0886*
			PR	-.0478	0.2140
			Gender*PU	0.0417	0.6887
			Gender*PEOU	-.0186	0.9594
			Gender*PR	0.0711	0.2394
Regression #2	PU	0.3233	PEOU	0.5501	<0.0001***
			Gender*PEOU	-.0478	0.4418

Table 5.   Results for testing independent effect of control variable, gender (Hypothesis H2)

Entire sample	DV	R^2adj	IV	β	p-value
Regression #1	PI	0.4477	PU	1.0659	<0.0001***
			PEOU	-.0300	0.4285
			PR	-.1093	0.0785*
			Product*PU	-.2235	0.3091
			Product *PEOU	0.2752	0.1946
			Product *PR	0.1324	0.2862
Regression #2	PU	0.3387	PEOU	0.7122	<0.0001***
			Product*PEOU	-.2654	0.0300**

*Table 6.   Results for testing independent effect of control variable, product category
(Hypothesis H3)*

Entire sample	DV	R^2adj	IV		β	p-value
Regression #1	PI	0.4711	PU		0.8877	<0.0001***
			PEOU		0.1183	0.1179
			PR		-.0460	0.2133
			Gender*Product*PR		0.3022	0.0033***
Regression #2	PU	0.3226	PEOU		0.5503	<0.0001***
			Gender*Product*PEOU		-.0528	0.5278

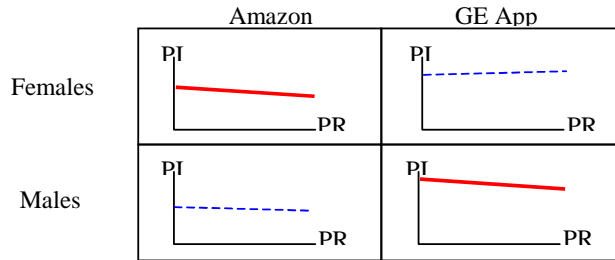*Table 7.*   *Results for Hypotheses 4*

Figure 2.   *Interaction between gender and product categories that influence the PR-PI relationship*

For females who visited Amazon and for males who visited GE, PR is negatively related with PI. However, perceived risk and online purchase behaviour are not related for females who visited GE and males who visited Amazon. The interaction between gender and PEOU is significant when related to PU (see Table 6). Mean PEOU is significantly related to PU in all the four subgroups. However, the PEOU-PI path is non-significant in all the groups. This implies that PEOU influences PI primarily through PU. The PEOU-PU relationships are stronger for individuals visiting the GE site compared to those who visited the Amazon site. The R^2 values are acceptable for all subgroups except for the R^2 value for the group of females who visited GE is low (0.1399). Table 8 summarizes our findings.

Hypotheses	Relationship	Remarks	Table
H1	PR-PI	Not significant	3
H2	PR-PI by Gender	Not significant	5
H3	PR-PI by Product Category	Non significant	6
H4	PR-PI by Gender and Product Category	Significant	7
H5	PU-PI	Significant	3
H6	PEOU-PI	Not significant	3

Table 8.   *Results from hypothesis testing*

5   DISCUSSION

Based on theoretical precepts, we investigated the moderating influence of these two control variables (gender and product category) on the relationship between intention to purchase and perceived risk. The attention paid to the relative differences in the relationships between the independent and dependent variables yielded many interesting findings. Our first stage of analysis shows lack of the effect of gender on purchase intention on the web. This is at variance with other studies (Van Slyke et al., 2002) that have found that men are more prone to buying online compared to women. Many studies have attributed this to past Internet use – where men are assumed to be more prone to use the Internet than women (NTIA, 2002). Our result is consistent with other online market research that shows women are just as willing to make purchases at major shopping sites with trusted brand names

(Nielson, http://www.eratings.com/news/2001/20010628.htm). This apparent discrepancy in results suggests that the findings from application of TAM in other technology contexts can't be directly applied in Internet context and it may be time to revisit some of those assumptions. Our second stage of analysis was to test the relationships between the determinants of purchase intention. Two findings stand out. First, our analysis indicates a mediator relationship between PR, PU and PI where PU mediates the relationship between PR and PI. This explains the lower predictive power of PR as shown in Table 4. The mediator effect can be explained by the fact that PU accounts for most of the variation in PI and emerges as the dominant predictor of PI in the TAM model while studying online purchase behaviour. This is further confirmed by the fact that our study, consistent with earlier studies, did not find PEOU a significant predictor of PI. The results from the study of Gefen et al. (2000) also confirm differences in relationship between perceived ease of use and behavioral intention based on the nature of task for which web is used. This finding is useful and important in that, studies based on TAM seem to be premised on the assumption that PEOU is a relevant predictor of desired behaviour - regardless of the task. It needs to be kept in mind that, as Gefen et al. (2000) suggest, the role of PEOU may well be affected by the nature of the specific IT task.

Secondly, as hypothesized, there is an interaction between gender and product category to influence the relationship between PR and PI. We found that while both men and women can be immune to perceived risk when it came to online purchases, they can be sensitive to perceived risk in different product categories. Selectivity theory (supported by the experiential aspect of online shopping) can help explain the interaction. The interaction can be described as men heeding risk when purchasing online from GE while women heeding risk when purchasing online from Amazon. According to selectivity theory, women tend to be comprehensive processors of information and are likely to perceive different levels of risk than men. Since the Amazon website offers the opportunity to make more product and price comparisons than the GE Appliances website, women are more likely to respond to higher number of information cues available at Amazon website than men. This implies that females are more likely to heed risk when purchasing from Amazon website than from GE website. The lack of sensitivity of females to risk when it comes to purchasing from the GE site can be explained in two ways. GE is a well-accepted brand name when it comes to household appliances. Secondly, women tend to be much more familiar with household consumer appliances (like refrigerators, washers, driers, ovens etc.) compared to men. While, over time, women have come to dominate household roles as shoppers, they are also under increasing pressure from role overload (Dholakia, 1999). We propose that the value proposition of online purchase (in terms of convenience) combined with the high familiarity of the product genre and the GE brand mitigates the perceived risk for females. The explanation of heeding risk for the GE Appliances site among men seems to be grounded in their lack of comfort in domestic appliances product category. Hence men would be more influenced by perceived risk when intending to purchase online from GE Appliances.

6   IMPLICATIONS

Our findings have important implications for both research and theory and contribute to the literature in two ways. First, the interactions between control variables have been shown to be significant in influencing how the prediction variables are related to the dependent variable – intention to purchase online. The second finding from this research is the mediating role of perceived usefulness in explaining online purchase intentions. The implication for theory comes from the finding on the non-significant role of perceived ease of use construct and mediating role of perceived usefulness construct. Online purchase behaviour is different from using information systems in the workplace. Online purchasers tend to have far more volitional control over the use of the IS (web) compared to users in the workplace. It could be argued that online purchasers use the web because ease of use is assumed. In that sense TAM may need to be reformulated for studying online purchase behaviour by revisiting the role of perceived ease of use and looking to alternate explanatory variables to predict online purchase behaviour. The other difference between online purchase and workplace-based systems is in terms of the absence of the significance of gender in influencing the relationships

between the dependent and independent variables. This finding is at variance with the finding of Venkatesh et al. (2002b). This again emphasizes the need for alternate explanatory variables for online shopping behaviour using TAM. The major implication for theory comes from the finding that perceived usefulness mediates the relationship between perceived risk and purchase intention. This points to possibility of existence of new relationships or interactions between existing TAM constructs when used for studying Internet technology.

Since perceived risk was found to be weak predictor of purchase intention in this study, in variance to earlier studies, it indicates a possibility of disaggregating risk further and using specific risk constructs in TAM model. The implication for research lies in identifying whether men and women react to specific types of risks associated with online purchases such as those related to product brands or web retailers. This will help us achieve a better understanding of role of risk in Internet shopping behaviour through the use of TAM. Some of the limitations of this study include measurement scale reliability coefficients that were lower than those found in prior studies and suboptimal sample composition diversity. These are potentially important areas which future researchers can focus on to verify and, or extend the results of this study.

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Appendix A: Constructs Reliabilities

Variable	I	II	III	IV	Standardized reliability
PI01	0.8739	0.0509	0.1603	0.2553	
PI02	0.8595	0.0852	0.1046	0.3118	0.9069
PI03	0.8551	0.0274	0.2455	0.1347	
PI04	0.6982	0.2055	0.1709	0.2824	
PR01	0.0145	0.8583	0.0941	0.0789	0.7109
PR02	0.1505	0.8564	0.0851	0.0740	
PEOU01	0.0600	0.2915	0.6461	0.2483	
PEOU02	0.1916	0.0359	0.8473	0.0712	0.8367
PEOU03	0.2588	0.0387	0.8453	0.1381	
PEOU04	0.1263	0.1284	0.6927	0.4465	
PU01	0.3190	0.1464	0.3822	0.6478	
PU02	0.5043	0.1045	0.1478	0.6397	0.8173
PU03	0.3586	0.0425	0.0594	0.7471	
PU04	0.1508	0.0573	0.3443	0.6868	

Appendix B: Instrument Items

BI1	Given the chance, I intend to use this retailer's website	BI2	Given the chance, I predict that I would use this retailer's website in the future
BI3	It is likely that I transact with this Web retailer in the near future	BI4	I will be comfortable purchasing from this website
PU1	Overall, I find this retailer's website useful.	PU2	The content on this retailer's website is useful to me
PU3	This retailer's website is functional	PU4	I think this retailer's website creates value to me
PEOU1	My interaction with this retailer's website is clear and understandable	PEOU2	Interacting with this retailer's website does not require a lot of mental effort
PEOU3	I find this retailer's website easy to use	PEOU4	I find it easy to locate the information that I need in this retailer's website
PR1	I fear that my credit card number may be stolen when making a transaction	PR2	I may not get the product I purchase.