

Investigating Uncertainty Avoidance and Perceived Risk for Impacting Internet Buying: A Study in Three National Cultures

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Abstract

The purpose of this research is to investigate factors impacting internet buying in three cultures: USA, India, and Jordan. While several consumer characteristics impacting internet buying have been studied in previous research, there has been relatively little research which studies the factors across national cultures. Internet buying and commerce has a global reach and several corporations count on global markets for expansion and growth. As a result, it is critical to understand the particular nature of differences in consumer characteristics impacting internet buying in different countries and cultures. This paper reports on an empirical study, which tests the impact of consumer characteristics uncertainty avoidance and perceived risk on internet buying. Data was collected and analyzed from USA, Jordan, and India. Results indicate that in cultures where uncertainty avoidance is high, perceived risk with internet, buying is also high, and this impacts internet buying negatively. Cultures where perceived risk is high, it impacts internet buying negatively. Results provide practical implications to web based vendors on consumer characterize that should be taken into account when marketing online in different cultures. Results also provide valuable insights into the nature of internet buying and the factors that limit internet-buying acceptance across cultures.

Keywords: Uncertainty avoidance, Perceived risk, Internet buying, Internet shopping, Cultural differences, Jordan, India, Hofstede, Culture, Cultural dimensions

1. Introduction

The World Wide Web (WWW) and the internet have been two of the most important developments of information technology since the 1990s, and these have provided companies with the ability to expand business reach through electronic commerce (e-commerce) (Aitchison & Stone, 2002). The internet has revolutionized marketing and trade and now provides various services, such as communication, information access, entertainment, banking, advertising, education and buying and selling (Samiee, 1998; Miller, 1996). The use of Internet opens a new realm of possibilities for businesses in the areas of customer service, lower transaction costs, marketing, and customer retention. It allows consumers access to a broader array of product sources. One of the advantages of internet is that it enables businesses to reach a worldwide customer population, and for the customers to survey, select, and purchase products and services from businesses around the world. Consumers in all age groups use the Internet as an enabling channel for acquiring goods and services (Zhang & Prybutok, 2003). The Internet provides a new channel for both business manager and consumers to achieve their business goals.

The Computer Industry Almanac Inc, 2000 report shows that the worldwide number of Internet users surpassed 1.2 billion in 2006—up from only 2 million in 1990, 45 million in 1995 and 430 million in 2000. Worldwide yearly increase in Internet users is predicted at 140 million to 145 million in the next five years, which means the

2 billion mark will be crossed in 2011 or 2012. Although many Internet experts are optimistic for the prospects of online business, online buying has its unique problems compared to traditional brick-and-mortar stores. Several phenomena related to internet buying have been investigated and a body of literature is slowly building to aid our understanding. Still, online buying and e-commerce is a new phenomenon and thus lacks robust, validated, and replicated results in academic journals (Shergill & Chen, 2004; Zhang & Prybutok, 2003).

Researchers have studied aspects of the growing field of electronic commerce and have found various characteristics and influences that impact online purchase decisions. Previous research has been attempting to understand these influences as this can lead to greater electronic marketing effectiveness (Coulson, 1999; Bhatnagar, Misra, & Rao, 2000; Henrich, 2000; Luna & Gupta, 2001; Alan & William, 2003; Cheol & Jong, 2003; Lee & Johnson, 2002; Stibel, 2005). Companies that market online must become knowledgeable about factors such as consumer attitudes, values, beliefs, opinions, buying habits, and buying decisions in different settings. In addition, it is widely recognized that national culture constitutes an important influence on many dimensions of human behavior and decision-making (Soares, Farhangmehr, & Shoham, 2007). Thus, one of the challenges faced by organizations entering the new global marketplace is to understand and to manage cross-national and cross-cultural differences in internet buying behavior. In this paper we propose and test a model which posits that perceived risk and uncertainty avoidance are factors that significantly affect the success of internet buying. We also conduct our research in three separate national contexts (USA, Jordan, and India) as the consumer characteristics of perceived risk and uncertainty factors are impacted by national culture and results would be useful in understanding how these characteristics can be harnessed by managers for the success of their e-commerce initiatives. In previous literature, cross cultural differences and their impacts on internet buying have not been studied completely and so an understanding of cultural differences and their impacts on internet buying is important. Cultural differences and national characteristics should be considered when the steps for global expansion of any online business are being planned. This research has chosen to get data from US, Jordan and India for the study. The three countries belong to three different groups: USA is a highly developed country, India is a developing country and Jordan is an underdeveloped country.

This paper begins by reviewing the literature on perceived risk, uncertainty avoidance, their interaction with internet buying, and develops the research hypotheses. In the section after that, the research methodology employed and the results obtained are described. The final section concludes with a discussion of the practical implications for online marketers, e-commerce decision makers and website designers about ways to target internet buyers and harness the global market in different national cultures.

2. Internet Buying and Consumer Behavior Dimensions: Background

Our investigation into consumer's willingness to buy over the internet has utilized three streams of literature: internet buying, uncertainty avoidance, and perceived risk. This section reviews the literature in these areas and develops a model and hypotheses to help understand consumer buying on the internet.

2.1 Willingness to buy over the Internet

In recent years, the Internet has allowed commercial enterprises to connect with one another and with customers. Today, all kinds of businesses provide information about their products and services on the internet. Many of these businesses use the Internet to market and sell their products and services (Schneider, 2006). Internet buying involves higher levels of uncertainty than buying from a physical store because the activity is new to most consumers and the transactions are conducted in a virtual environment without the physical assurance of traditional buying experience ((Lim, lee, & Ben, 2006). One of the most often cited and studied reasons for consumers not purchasing from Internet shops is the *uncertainty* of success due to lack of trust, which stops or discourages consumers from entering into exchange relationships with internet shops (Cheung & Lee, 2000). E-commerce success, especially in the business-to-consumer area, is determined in part, by whether consumers trust sellers and the products they cannot see or touch, and whether they trust the electronic systems with which they have no previous experience (Lee & Turban, 2001). Factors such as self-confidence and amount of information processed and accessible play an important role in determining the amount of uncertainty faced by consumers when buying from a traditional store (Taylor, 1974). The second factor studied most often by researchers in the context of internet buying is increased amount of *perceived risk* by consumers when buying online. Bhatnagar et al. (2000) argued that the likelihood of purchasing on the Internet decreases with increase in perceived risk. Constantinides (2004) also found that transaction security and customer data safety are principal concerns of customers purchasing products or services online. Consumers are concerned about disclosing their private and financial information. While most online buying sites provide personal information privacy protection policy and guarantee for transaction security, they do not offer detailed information on how

transactions and personal data are secured (Park & Kim, 2003). Other factors studied in the context of online buyers includes concerns about product quality, inability to touch and see the product, un-trusted vendors, and problems with receiving ordered products (Schneider, 2010).

2.2 Uncertainty avoidance and internet buying

Uncertainty avoidance is defined as the extent to which individuals feel threatened by uncertain or unknown situations (Hofstede, 1994). Hofstede first introduced uncertainty avoidance as one of the dimensions of an individual's national culture (Hofstede 1984). Original data were derived from matched populations of employees from national subsidiaries of the multinational firm, IBM. More than 116,000 questionnaires were administered in 72 countries and in 20 languages between 1967 and 1973. The results were validated in some 40 cross-cultural studies from a variety of disciplines, and have also been extended in further research by Hofstede himself (Hofstede 2001). A common critique of his work has been that it was collected solely from one organization (Lim et al., 2006). Despite this criticism, Hofstede's empirical results have been replicated by several researchers (e.g Hambrick & Brandon, 1988; Hoppe, 1990; Shackleton & Ali, 1990; Swierczek, 1991; Smith, 1996; Holden, 1999; Merritt, 2000; Kolman, Noorderhaven & Hofstede, 2002; Ayoun, 2006; Lee, 1999; Merkin, 2006; Gong, Lee, and Stump, 2007). And the Hofstede survey has been shown to have acceptable convergent, discriminant and external validity (Shackleton & Abass, 1990; Hoppe, 1990; Holden, 1999; Hambrick & Brandon, 1988; Smith, 1996; Gong et al., 2007; Imm, Ann, & Geoffrey, 2007).

The four dimensions describing national culture derived from this stream of researches are power distance, uncertainty avoidance, masculinity/femininity, and individualism/collectivism. Hofstede attributed to each of the countries represented in his study an index value (between 0 and about 100) on each of these dimensions. For example, uncertainty-avoidance is scored from zero, indicating a culture with the lowest uncertainty avoidance, to 100, indicating a culture with the highest uncertainty avoidance (Hofstede, 1997). In the context of the topic of interest in our current research, internet buying, we know that products and services need to be bought from virtual organizations without brick and mortar presence and without having physically seen or touched the products/services to be bought. This new modality of purchase which does not have long familiarity and history of existence leads consumers to view uncertainty in the buying transaction. Given the significance of the uncertainty avoidance dimension to the internet buying contact, in this research one of our objectives is to understand the relationship between uncertainty avoidance dimension of national culture and internet buying.

The effect of uncertainty avoidance has been investigated by researchers in several other areas for example: Utilization of e-government services (Carter & Belenger, 2005), management innovation and cultural adaptability in online e-banking (Singer, Avery, & Baradwai, 2008), cultural influence on global corporate websites (Robins & Stylianou, 2003), consumer purchase intention to buy personalized products (Tikoo, 2008), mobile internet users (Chae & Kim, 2003), Cross-cultural dimensions of Internet Portals (Zahir, Dobing & Hunter, 2002), and e-commerce trust beliefs (Gefen, 2000). Yet, limited amount of research has been devoted to the study of uncertainty avoidance as a cultural dimension in the context of internet buying (Girard, 2002; Hermeking, 2006).

Uncertainty avoidance reflects the extent to which people in a society feel threatened by ambiguity and therefore try to avoid ambiguous situations by providing greater certainty and predictability (Al-Wequain, 1998). Hofstede (1984) claimed that high uncertainty avoidance cultures embody stability, predictability, risk avoidance, resistance to change, strict control systems, and discomfort with unknown futures. Low uncertainty avoidance cultures demonstrate risk-taking, tolerance to innovation and new ideas, willingness to change and adjust, ease with the unknown and optimism about the future. Hofstede (2005) also claimed that customers from cultures with high uncertainty avoidance tend to be hesitant toward new products and information. Cultures with high uncertainty avoidance experience the credo of the xenophobia "what is different is dangerous" (Hofstede, 2005). They will therefore be slower in introducing and adopting electronic communication (e-mail, Internet), even if eventually they may use them as much as people in low uncertainty culture. They also take fewer risks, invest less in stocks, and are slow in paying their bills.

The literature summarized above leads us to propose the following:

Hypotheses 1: Individuals from cultures with high uncertainty avoidance will tend to show lower willingness to buy over the internet.

2.3 Perceived risk and internet buying

Risk was first conceptualized and studied by Bauer who defined that a person will experience risk if his/her behavior will produce unanticipated and unpleasant consequences (Bauer, 1960). Cunningham (1967) described

perceived risk as having six dimensions: performance, financial, opportunity/time, safety, social, and psychological loss. Perceived risk in buying is defined as the functional or psychological risk a consumer feels she is taking when purchasing a product or service (Downling & Staelin, 1994). Similarly, Zahir, Dobing, & Hunter (2004) defined risk as a consequences in the purchase environment where consumers may consider the purchase outcomes uncontrollable or the importance and seriousness of the results associated with making a wrong, unsuitable decision as high. Taylor (1974) argues that these types of risk are thought to be present in every choice situation but in varying degrees, depending upon the particular nature of the decision. On the other hand, Bettman (1973) made a critical distinction between two types of risk: inherent risk and handled risk. Inherent risk is the latent risk a product class holds for a consumer or the innate degree of conflict the product class is able to arouse. Handled risk is the amount of conflict the product class is able to arouse when the buyer chooses a brand from a product class in his usual buying situation. Bettman (1973) gave an example of a consumer who feels that there is a great risk associated with a product class Aspirin; however, she has a favorite brand that she buys with confidence. In this case, inherent risk is high, but handled risk may be low for Aspirin.

Antecedents for perceived risk vary from situation to situation. Some of the antecedents are the levels of attributes of the specific product considered, the likelihood of "failure" that leads to negative consequences and the individual's purchase goals (Dowling & Staelin, 1994). Some studies have investigated the relationship between perceived risk and trust (Mayer & Davis, 1995). Little is known about the formation of trust in terms of neurological processes and there is little agreement on the measurement of trustworthiness even though several researchers have studied this area (Larson, 2002). Online consumer trust is relevant to this area of research as it plays an important role in stimulating consumer purchases over the Internet (Chung, 2006).

On the other hand, Bhatnagar et al. (2000) argued that two types of risk exist when buying over the internet-product category risk and financial risk. Product category risks are concerned about pricing of products and availability of information needed to make a buying decision; financial risk is associated with losing money due to fraud or stealing. The Internet Fraud Watch (2005) shows that the average Internet fraud loss per person is estimated at \$1917 per person in 2005, and the total loss in 2005 was \$13 million.

The likelihood of purchasing on the Internet decreases with increase in perceived risk (Bhatnagar et al., 2000). This perceived risk is a factor that varies by individual and it is associated negatively with the amount and experience in online purchasing (Kauffman, 1996; Miyazaki & Fernandez, 2001). Some studies have empirically shown that consumers' perceived risk is significantly different between the Internet and on-ground store formats and consumers perceived more purchasing risk when buying from the Internet than from traditional stores (Jay, Forsthe, & Soak, 2002). Jarvenpaa, Tractinsky, & vitale (1999) also found that the degree to which consumers trust a Web store affects their perceptions of the risk involved in purchasing from the store and their attitudes towards the store. In spite of several studies pointing to the need to address these concerns, factors such as information security and privacy continue to prevail and have been cited as the key factors inhibiting the rate of growth for online buying (Larson,2002; Liebermann, & Stashevsky 2002; Luna & Gupta,2001).

Based on findings of previous research and literature reviewed above, we hypothesize the following:

Hypothesis 2: Individuals from cultures that tend to experience higher perceived risk are less likely to buy over the internet.

Additionally, findings of previous researches show that uncertainty avoidance and the concept of risk are closely related and consumers from cultures having high uncertainty avoidance scores try to avoid new situations with unpredictable risk (Hofstede, 1984; Money & Crotts, 2003; Chakraborty, Lala, & Warren, 2003). Perceived risk increases with higher levels of uncertainty and/or the chance of greater risk associated with negative consequences (Downling & Staelin, 1994; Mitchell, 1999; Campbell & Goodstein, 2001). Previous studies also establish that individuals from high uncertainty avoidance cultures fear the unknown and tend to not tolerate risk (Hofstede, 1984). Consequently, we propose the following:

Hypothesis 3: Individuals from high uncertainty avoidance cultures will experience high levels of perceived risk when buying over the internet.

The following diagram shows the proposed model of this study: **(Insert Diagram Here)**

3. Methodology

3.1 Procedures and samples

To obtain data on the variables involved in this study, an online survey was performed. The survey was emailed to prospective respondents and a visa gift card of \$200 in a random drawing was offered as an incentive to participate in the survey. The research instrument was developed based on relevant literature reviewed above and

is described in more detail in a later section (Hofstede, 1994; Abu Shanab, 2005; Kuhlmeier & Knight, 2005; Kay, 1990; Lee & turban, 2001; Chung, 2006; Yoh, 1999; Lee & Johnson, 2002; Bhatangar et al., 2003; Srinivasan, Anderson, & Ponnnavolu, 2002; Lassar, Manolis, & Nicholls, 2005; Swinyard & Smith, 2005; and Shergill & Chen, 2004).

The target population for this study consisted of students studying for their master degrees in USA, India, and Jordan. A convenience sample was chosen from this population. Studying these groups of respondents would allow us the ability to compare results from different national cultures and control for those variables that might affect the outcome of the research. Baerrlen (1967) argues that to help ensure against alternative explanation of differences in results in cross-cultural research, the researcher should select samples in each nation that are closely comparable. Masters students are expected to share their level of exposure to the internet technology, education level, and age. Such similarities would make the comparisons of data and results more reasonable.

The survey was designed and sent via email to professors teaching at different universities in USA, India, and Jordan. Professors were solicited for cooperation using several methods: cold calls, email requests, reference through friends and colleagues, and internet searches. They were requested to redirect the survey email to their students. Professors encouraged their students to respond to the survey and followed up with them at our request to ensure maximum participation. As internet exposure and progress happens fast in developing countries, the research ensured that the survey data will collect responses over a specified 5 week time duration (January 16 and February 26, 2010). An estimated 2000 online surveys were emailed to participants. 400 completed surveyed were received representing a 20% response rate.

The 400 returned survey responses were checked for completeness of response data and 59 cases were discarded, leaving 341 survey responses usable for data analysis.

3.2 Survey Development

This research studied three variables: willingness to buy over the internet, uncertainly avoidance and perceived risk. We utilized scales and items from previous research studies to build the survey for measuring these constructs in the three cultures.

Internet buying scale: This scale was built utilizing items from several studies as we found that the existing researches have explored different perspectives of internet buying. We found it most useful to integrate the perspectives by including relevant items from several studies (Yoh, 1999; Chung, 2000; Bhatangar, et. al., 2000; Lee and Johnson, 2002; Srinivasan, et al., 2002; Eroglu, Machleit, & Davis, 2003; and Kuhlmeier & Knight, 2005).

The items used are listed in the table below and a 5-item Likert scale was used to test students' willingness to buy over the internet where 1 indicate strongly disagree and 5 indicates strongly agree. **(Insert Table 1 Here)**

3.3 Uncertainty avoidance scale (UA)

Hofstede (1994) developed the Value Survey Module (VSM 94) in order to measure cultural dimensions of a group of individuals. The score on each dimension is derived from the mean scores on questions of national samples of respondents. Accordingly, uncertainty avoidance (UA) was calculated using Hofstede's formula to calculate an uncertainty avoidance (UA) index which uses responses on four questions that check for the sense of uncertainty of individuals in a group. Hofstede's formula for calculating uncertainty avoidance index was used for calculating UA: $UAI = +25m(13) + 20m(16) - 50m(18) - 15m(19) + 120$ where m (13) is the mean score for question 13, and so on. The index normally has a value between 0 (weak Uncertainty Avoidance) and 100 (strong Uncertainty Avoidance).

Respondents were asked to indicate "To what extent do they agree or disagree with each of the statements mentioned." Example statements include:

- One can be a good manager without having precise answers to most questions that subordinates may raise about their work.
- Competition between employees usually does more harm than good.

3.4 Perceived risk scale (PR)

This scale was adopted from previous research (Lee & Turban, 2001; Bhatnagar, et. al., 2000). Participants rated 8 items on a five-point scale ranging from strongly agree (1) to strongly disagree (5) to obtain a measure of perceived risk. The mean of the scores was used as a measure for PR.

The 8 item scale used for measuring perceived risk as includes:

- Internet buying is unreliable.
- Internet buying cannot be trusted; there are just too many uncertainties.
- In general, I cannot rely on Internet vendors to keep the promises that they make.
- Anyone trusting Internet buying is asking for trouble.
- Internet buying is risky.
- Buying over the Internet entails uncertainty or vulnerability.
- There are negative outcomes on Internet buying.
- I find it dangerous to shop on the Internet.

The survey questionnaire was piloted with a group of 90 students who were roughly equally distributed in Jordan, India, and USA. The responses as well as feedback were reviewed for understandability of content as well as readability. Some modifications were made in wording and placement of the questions. The surveys were all administered in English and translations were not required.

3.5 Data

341 students completed the online questionnaires. All completed online questionnaires were included in the analysis. 94 respondents were from USA (Alliant International University, Indiana University of Pennsylvania, Southern Illinois University, and University of Auburn, Atlanta), 132 respondents came from India (University of Hyderabad, Bangalore University, People's Education Society, and University of Punjab), and 91 participants came from Jordan (Yarmouk University, University of Jordan, Jordan University for science & technology, and Amman University for Higher Education).

3.6 Data Analysis

Preliminary regression analysis was conducted using mean of items representing the variables being studied in this research. The preliminary multiple regression tests allowed us to check for outliers and influential cases. The test included Mahalanobis distance, Cook's D, Leverage standardized DFBeta, and the standardized residuals. Cases, which exceeded the limit on more than one measure, were discarded (Hair, Black, Babin, Anderson, and Tatham 2007). Inspection of these measures resulted in deleting seven more responses. The cases that were deleted had residuals greater than 3.5, Mahalanobis distance greater than 30, and leverage greater than 0.0412 (Limit = $3(k+1)/n$). Values for Cook's D and standardized DFBeta were all within acceptable limits (Hair et al., 2006).

4. Results

Analysis of variance (ANOVA) was performed to assess any differences between respondents from USA, India, and Jordan with regard to perceived risk, uncertainty avoidance and internet buying.

4.1 Testing hypothesis 1: Individuals from cultures with high uncertainty avoidance tend to show lower willingness to buy over the internet

Tamahen test (Table 2) shows that the three groups were different from each other in terms of both uncertainty avoidance and internet buying behavior.

(Insert Table 2 Here)

Table 3 of descriptive statistics shows that Jordanians scored the highest on uncertainty avoidance (mean=108.7), followed by India (mean=77.6). Table 3 also shows that Jordanians scored the lowest on online buying behavior (m=1.83), followed by Indians (mean=1.99) Americans showed the highest intention to buy over the internet (mean=2.3).

(Insert Table 3 Here)

The Brown- Forsythe test of equality of means (Table 4) verifies that there are significant differences between the three groups on the dimensions of UA and internet buying $F(2,316) = 20$ and willingness to buy over the internet $F(2,283) = 25$. Both values were significant at $p = .000$.

(Insert Table 4 Here)

Therefore and based on these findings we find that differences in national culture can be attributed to the differences observed. We conclude that: *individuals from cultures that show high uncertainty avoidance are less likely to show willingness to buy over the internet.*

4.2 Testing hypothesis 2: Individuals from cultures that tend to experience higher perceived risk are less likely to be willing to buy over the internet

Hypothesis 2 was tested with similar analysis. The multiple comparisons shown in Table 5 shows that the three groups are different from each other on both internet buying behavior and perceived risk of internet buying.

(Insert Table 5 Here)

Table 6 shows, as before, Jordanians scored the lowest on willingness to buy on the internet ($m=1.83$), followed by Indians ($m=1.99$), while Americans showed the highest willingness to buy over the internet (mean= 2.3). The table also shows that American experienced the lowest perceived risk while buying online ($m=3.31$), followed by Indians ($m=3.01$). Jordanians showed the highest perceived risk among all three groups ($m=2.50$).

(Insert Table 6 Here)

This finding was also verified through the Brown- Forsythe test of equality of means (Table 7). The table verifies that there are significant differences between the national groups on both internet buying behavior $F(2,316) = 20.3$ and perceived risk in buying online $F(2,296) = 32$. Both values were significant at $P=.000$.

(Insert Table 7 Here)

Based on these findings we reach a conclusion that *Individuals from cultures that experience a high sense of perceived risk will be less likely to be willing to buy over the internet.*

4.3 Testing hypothesis 3: Individuals from high uncertainty avoidance cultures will experience high levels of perceived risk when buying over the internet

The multiple comparisons in Table 8 shows that the three groups are different from each other in terms of both uncertainty avoidance and perceived risk of online buying.

(Insert Table 8 Here)

Table 9 shows that Jordanians scored the highest on uncertainty avoidance ($m=108.7$) followed by India ($m=77.6$). The table also shows that American experienced the lowest perceived risk while buying online ($m=3.31$), followed by Indians ($m=3.01$). Jordanians showed the highest perceived risk among all three groups ($m=2.50$).

(Insert Table 9 Here)

Brown- Forsythe test of equality of means (Table 10) verifies that there are significant differences between the national groups on both uncertainty avoidance $F(2,316)=20.3$ and perceived risk in buying online $F(2,296)=32.38$. Both values were significant at $P=.000$.

(Insert Table 7 Here)

Based on what have been found we could state that *Individuals from cultures with high uncertainty avoidance level are more likely to experience high level of perceived risk while buying over the internet.*

5. Discussion and Implications

5.1 Uncertainty avoidance and internet buying behavior

Results showed that Jordanians have the highest uncertainty avoidance level among the three groups followed by Indians. Findings also show that individuals from cultures that score high on uncertainty avoidance (Jordanians in our case) are less likely to buy over the internet. Cultures with relatively high uncertainty avoidance will show slow Internet buying adoption rates. Countries that exhibit high uncertainty avoidance value security, clear rules and a formality to the structure of life; their citizens are generally more resistant to change from established patterns and tend to focus on risk avoidance and reduction. Since the internet represents a true change to the traditional way of buying and entails some degree of risk, people from cultures with high uncertainty avoidance are expected to be hesitant in buying online. In fact, a majority of Jordanians perceive computer technology and internet activities to be associated with uncertainty. They express preferences for face-to-face activities rather than electronic communication when dealing with customers and suppliers.

5.2 Perceived risk and internet buying behavior

Findings show that Jordanians scored lowest on willingness to adopt internet buying and highest on perceived risk followed by Indians. Findings also show that American experienced the lowest perceived risk while buying over the internet and highest willingness to buy over the internet among the three groups. The more people perceive the internet as risky, the less likely they will be to make internet purchases. This finding could be attributed to the fact that the public in Jordan had a negative attitude about the social impacts of the Internet and

did not want it to replace their traditional ways of doing things. To overcome problems of trust and perceived risk when buying over the internet, ecommerce businesses need to realize the importance of security in consumers' online purchase decision. This issue can be overcome with liberal return policies and giving customers an opportunity to experience the product, either through product trials or association with brick-and-mortar site locations. Cultures with high-perceived risk are less willing to buy products before seeing, touching, or trying them first. Since the online buying is very new to the Jordanians, Jordanians are expected to demand seeing and touching the product to judge quality before buying them.

5.3 Uncertainty avoidance and perceived risk when buying over the internet

The research findings support the hypothesis, which states that, Individuals from high uncertainty avoidance cultures will experience high levels of perceived risk when buying over the internet. Results show that cultures scored high on uncertainty avoidance (Jordanians in this research) experienced the highest perceived risk while buying over the internet among the three groups. Americans scored the lowest on uncertainty avoidance among the three groups and, at the same time, showed the lowest perceived risk when buying over the internet. Individuals from cultures with high uncertainty avoidance tend to be risk-averse.

Buying over the internet is happening in a virtual setting without being able to touch or check virtual products and vendors. Internet transactions usually entail high risk of buying the wrong item or dealing with a dishonest vendor or falling in an uncertain. Individuals from cultures with high uncertainty avoidance usually try to minimize uncertainty through strict laws and rules as well as safety and security measures

This research investigated the relationship between uncertainty avoidance, perceived risk, and internet buying in three separate cultures. We made the decision to administer the survey in English and language proficiency was assumed among the participants from the three different cultures as the pilot had indicated that the survey had easy readability and understandability. Still, several of the internet buying sites are in the local language and consumers may identify with them better. So using translated surveys could be useful for understanding risk perception as well as willingness to buy. Including more countries and cultures from within a region would also make the results more robust and generalizable. In addition, this research made the assumption that our sample from masters degree programs in urban cities and premier universities had acceptable and uniform levels of experience buying over the internet. Although this was specifically checked out to be a reasonable assumption, it would still be useful to use that as a qualifying variable for the data analysis in future research. Future research should investigate the mediation effect of other variables such income, gender differences, types of products purchased and internet proclivity in a more comprehensive model of internet buying..

The practical implication is that cultures with high perceived risk would be more hesitant to buy over the internet. This study provides important implications for e-marketing strategists who are working on setting up global e-marketing strategies, web or product launches and internet related marketing plans. Results help in understanding differentiated internet consumer buying behavior. This serves to understand internet consumer characteristics that may help in offering various customized products and services in different nations or cultures and in designing websites in a responsive way to meet different consumers' cross cultural needs and concerns. Understanding the internet consumer's buying characteristics and the cultural underpinnings of the characteristics will facilitate the adoption of internet buying across cultures and the growth of market share and penetration of online businesses.

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Table 1. The items used in the study

Question	Adopted from:
I can save time by buying on the Internet	(Chung,2000)
I can save money by buying on the internet	(Yoh, 1999).
Internet buying is easy to do	(Lee and Johnson, 2002)
I enjoy buying on the Internet	(Chung, 2000).
Internet buying provides more variety of products	(Eroglu, Machleit, K and Davis,2003)
I would be more likely to shop online if product returns were easier	(Bhatangar, Misra, and rao, 2000)
When buying on the Internet, the store's reputation concerns me	(Anderson, and Ponnawolu, 2002)

Table 2. Multiple Comparisons between Groups on Uncertainty Avoidance and Willingness to Buy over the Internet

Dependent Variable		I) Nationality	(J) Nationality	Mean Difference (I-J)	Sig.
Uncertainty Avoidance	Tukey HSD	American	Indian	-26.36760*	.010
			Jordanian	-57.45387*	.000
		Indian	American	26.36760*	.010
			Jordanian	-31.08627*	.001
		Jordanian	American	57.45387*	.000
			Indian	31.08627*	.001
	Tamhane	American	Indian	-26.36760*	.007
			Jordanian	-57.45387*	.000
		Indian	American	26.36760*	.007
			Jordanian	-31.08627*	.001
		Jordanian	American	57.45387*	.000
			Indian	31.08627*	.001
Internet buying behavior	Tukey HSD	American	Indian	-.15664*	.049
			Jordanian	-.45004*	.000
		Indian	American	.15664*	.049
			Jordanian	-.29341*	.000
		Jordanian	American	.45004*	.000
			Indian	.29341*	.000
	Tamhane	American	Indian	-.15664*	.012
			Jordanian	-.45004*	.000
		Indian	American	.15664*	.012
			Jordanian	-.29341*	.000
		Jordanian	American	.45004*	.000
			Indian	.29341*	.000

*. The mean difference is significant at the 0.05 level.

Table 3. Descriptive Statistics of Uncertainty Avoidance and Willingness to Buy Over the Internet

Variables	Nationality			
Uncertainty Avoidance	American	88	51.3068	61.37081
	Indian	129	77.6744	62.74031
	Jordanian	117	108.7607	69.47744
	Total	334	81.6168	68.45632
Internet buying behavior	American	88	2.2895	.60655
	Indian	129	1.9961	.40773
	Jordanian	117	1.8395	.37281
	Total	334	2.0576	.51118

Table 4. Robust Tests of Equality of Means for Uncertainty Avoidance and Willingness to Buy Over the Internet

		Statistica	df1	df2	Sig.
Uncertainty Avoidance	Welch	19.653	2	209.502	.000
	Brown-Forsythe	20.304	2	316.784	.000
Internet buying behavior et	Welch	21.378	2	209.654	.000
	Brown-Forsythe	24.733	2	283.200	.000

a. Asymptotically F distributed.

Table 5. Multiple Comparisons of groups for online perceived risk and internet buying

Dependent Variable		(I) Nationality	(J) Nationality	Mean Difference (I-J)	Sig.
Online perceived risk	Tukey HSD	American	Indian	.29880*	.009
			Jordanian	.81220*	.000
		Indian	American	-.29880*	.009
			Jordanian	.51340*	.000
	Tamhane	American	Indian	.29880*	.015
			Jordanian	.81220*	.000
		Indian	American	-.29880*	.015
			Jordanian	.51340*	.000
Internet buying behavior	Tukey HSD	American	Indian	-.15664*	.049
			Jordanian	-.45004*	.000
		Indian	American	.15664*	.049
			Jordanian	-.29341*	.000
	Tamhane	American	Indian	-.15664*	.012
			Jordanian	-.45004*	.000
		Indian	American	.15664*	.012
			Jordanian	-.29341*	.000
Tamhane	American	Indian	-.15664*	.012	
		Jordanian	-.45004*	.000	
	Indian	American	.15664*	.012	
		Jordanian	-.29341*	.000	

Table 6. Descriptive statistics for variables online perceived risk and Uncertainty Avoidance

		Nationality		
Internet buying behavior	American	88	2.2895	.60655
	Indian	129	1.9961	.40773
	Jordanian	117	1.8395	.37281
	Total	334	2.0576	.51118
Online perceived risk	American	88	3.3182	.78210
	Indian	129	3.0194	.72727
	Jordanian	117	2.5060	.69534
	Total	334	2.9183	.79843

Table 7. Robust Tests of Equality of Means for online trust and uncertainty avoidance

		Statistic ^a	df1	df2	Sig.
Online Perceived Risk	Welch	69.584	2	212.553	.000
	Brown-Forsythe	67.298	2	324.976	.000
Internet buying behavior	Welch	21.378	2	209.654	.000
	Brown-Forsythe	24.733	2	283.200	.000

a. Asymptotically F distributed.

Table 8. Multiple Comparisons of the three groups with regard to uncertainty avoidance and online perceived risk

Dependent Variable		(I) Nationality	(J) Nationality	Mean Difference (I-J)	Sig.
Uncertainty Avoidance	Tukey HSD	American	Indian	-26.36760*	.010
			Jordanian	-57.45387*	.000
		Indian	American	26.36760*	.010
			Jordanian	-31.08627*	.001
		Jordanian	American	57.45387*	.000
			Indian	31.08627*	.001
	Tamhane	American	Indian	-26.36760*	.007
			Jordanian	-57.45387*	.000
		Indian	American	26.36760*	.007
			Jordanian	-31.08627*	.001
		Jordanian	American	57.45387*	.000
			Indian	31.08627*	.001
RISK	Tukey HSD	American	Indian	.29880*	.009
			Jordanian	.81220*	.000
		Indian	American	-.29880*	.009
			Jordanian	.51340*	.000
		Jordanian	American	-.81220*	.000
			Indian	-.51340*	.000
	Tamhane	American	Indian	.29880*	.015
			Jordanian	.81220*	.000
		Indian	American	-.29880*	.015
			Jordanian	.51340*	.000
		Jordanian	American	-.81220*	.000
			Indian	-.51340*	.000
*. The mean difference is significant at the 0.05 level.					

Table 9. Descriptive statistics of uncertainty avoidance and online perceived risk

Uncertainty avoidance	American	88	51.3068	61.37081
	Indian	129	77.6744	62.74031
	Jordanian	117	108.7607	69.47744
	Total	334	81.6168	68.45632
Online perceived risk	American	88	3.3182	.78210
	Indian	129	3.0194	.72727
	Jordanian	117	2.5060	.69534
	Total	334	2.9183	.79843

Table 10. Robust Tests of Equality of Means for uncertainty avoidance and perceived risk

		Statistica	df1	df2	Sig.
Uncertainty Avoidance	Welch	19.653	2	209.502	.000
	Brown-Forsythe	20.304	2	316.784	.000
RISK	Welch	32.965	2	204.441	.000
	Brown-Forsythe	32.389	2	296.119	.000

a. Asymptotically F distributed.

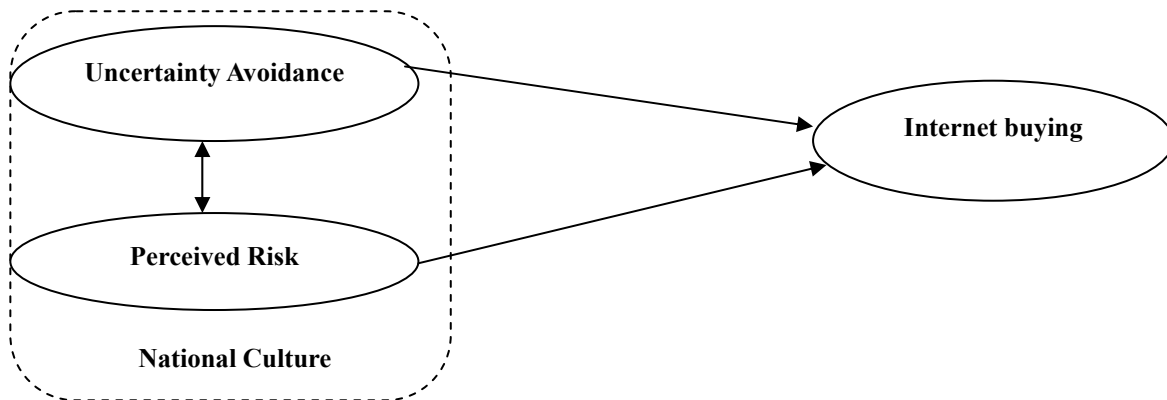


Figure 1. Proposed model of this study