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**The Impact of Attitudes toward Internet Technology and Demographics
on Saudi Consumers' Use of Online Buying**

By

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Abstract:

Some studies have been conducted in recent years to investigate the reasons behind Saudi Arabia's lag in the adoption of online buying. Most of them have focused on barriers influencing or contributing to environmental or architectural factors such as trust issues, lack of address systems, security issues, and privacy issues. However, Saudi Arabia has no scholarly studies about the role of people's attitudes toward technology in their adoption of online buying. In this research, we study the impact of Saudi people's attitudes towards technology on their adoption of online buying, and we also investigate the relationship between Saudi people's demographics and their adoption of online buying. The study was based on a survey conducted in Saudi Arabia using the TRI scale, adapted from Parasuraman (2000) and its four dimensions: Innovativeness, Optimism, Discomfort and Insecurity. The adoption of online buying is treated as a technology adoption in this study (Parasuraman, 2000). The analysis of the data collected revealed that attitudes toward technology have an impact on Saudi people's adoption of online buying with Innovativeness and Insecurity being the most important factors. Demographics also matter with education being the most important of the demographic factors. Results also indicate that attitudes towards technology are more important than demographics at explaining adoption of online buying in Saudi Arabia.

I. Introduction

Many businesses are transferring from bricks into clicks. Businesses that have been around for years have found it essential to move to the internet to compete and to take advantage of the many benefits that using the internet offers such as increasing sales, reducing costs and reaching more customers. Customers are also benefiting from this fundamental change (Boritz, 2009). For instance, customers can reach distant markets or suppliers, can buy products at cheaper prices, can have their products delivered directly to their homes, and can shop from the convenience of their homes. Taking a look at the world's online shopping usage through recent statistics, according to a study conducted by The Nielsen Company (2008), 85% of the world's online population is buying online. On the other hand, when we compare it with Saudi Arabia, we see that only 39% of the Saudi online population is buying products and services online, which equals only 12% of the total Saudi population (Ashok, 2011; Arab Advisors Group, 2011). Nearly half of the online population in the Middle East, of which Saudi Arabia is one part, indicates that they have never made any online purchase before that, furthermore, one-third indicates no intention to buy online in the next six months (The Nielsen Company, 2010). Conversely, 79% of European online consumers plan to buy online in the next six months, which shows that the intention to purchase online in Europe is considerably higher than in the Middle East (The Nielsen Company, 2010). Some studies have been conducted in recent years to investigate the reasons behind Saudi Arabia's lag in the adoption of online shopping. Most of them have been limited to barriers influencing or contributing to environmental or architectural factors such as regulatory issues, lack of address systems, security issues, and privacy issues (Aleid et al., 2009; Al-Ghaith et al., 2010).

Apart from these factors, it is necessary to gain an understanding of consumers' online buying behaviour and its antecedents. In explaining what is driving consumer behavior, Fishbein (1980) developed the theory of reasoned actions (TRA), which explains the association between attitude and buying behaviour. The TRA asserts that the "attitude toward buying and subjective norm are the antecedents of performed behavior" (Ha, 1998; Pelsmacker et al., 2005). Furthermore, a particularly relevant proposition was offered by Lutz (1991). This proposition mainly indicates that, in order to predict a buying behaviour, it is essential to measure individuals' attitude toward the ways in which they perform the behaviour and not only toward the item bought. For example, a person may have a positive attitude toward the products that can be bought online such as airline tickets, shoes, accessories, but he/she may have a negative attitude toward the ways in which buying online is performed, to the extent that he/she might simply avoid buying online. In this study, the adoption of online buying is treated as a form of technology adoption (Parasuraman, 2000), and accordingly, we will be measuring Saudi people's attitude toward technology to assess the impact of their attitude regarding the adoption of online buying. This study will mainly explore whether there is any association between the lag of Saudi people's adoption of online buying and their attitude toward internet technology.

The rapid increase in the use of electronic business and the struggle of many e-retailors at doing their online selling have amplified the need to understand why consumers engage in electronic businesses activities and what stops many of them from doing so. Several theoretical models have been used around the world to obtain a better understanding of the influence of technology acceptance on customer's adoption of new electronic services. For instance, the Technology Acceptance Model (TAM), developed by Fred Davis and Richard Bagozzi (Bagozzi & Warshaw 1992; Davis 1989), has been applied by many scholars to see

how people's acceptance of technology influences their adoption of e-services and products; the conclusions have shown that perceived ease of use and perceived usefulness both have an impact on whether someone would decide to adopt an e-service or not (McCloskey, 2004). Another theoretical model, called the TRAM, is an integrated technology readiness (TR) and acceptance model (AM) that has been used in the context of customers' adoption of electronic service systems (Chien-Hsin et al., 2007). This study also concluded that perception of ease of use and usefulness both have an impact on consumer's adoption of e-service systems (Chien-Hsin et al., 2007). The results of these studies show how important are people's attitudes in adopting a new technology.

Another theoretical model is based on the Technology Readiness Index (TRI). The TRI is a measurement tool that was developed by Parasuraman (2000) in order to measure people's readiness to use and interact with technology. Previous studies have been conducted using the TRI to examine people's readiness to adopt new technologies. Results demonstrated that this model is able to predict people's readiness to adopt and use technology services and products (e.g. Chen & Li, 2010; Lanseng & Andreassen, 2007). This model will be used in this study to measure Saudi people's attitudes toward the use of online buying. This model was chosen for this study as it measures readiness to use technology in home life and at work; this relates directly to our study since people mainly engage in online shopping using technologies used in their daily life whether they are at home or at work.

To our knowledge, no scholarly studies have yet been performed in Saudi Arabia about the role of people's attitudes toward technology in their adoption/use of online buying. Additionally, considering the potential of the Saudi market in terms of consumer goods consumption, especially given the fact that the cost of goods and services imported into Saudi

Arabia increased from 4,990 billion Saudi Riyal (1 CAD = 3.75 SAR) in 1970 to 162,558 billion Saudi Riyal in 2002 (Assad, 2006). It therefore seems relevant to determine the impact of Saudis' attitudes towards technology on their use of online buying. Demographics are also one of the types of variables used to explain technology adoption.

In this study, we explore the influence of specific factors like attitudes toward internet technology as well as demographics on the use of online buying in Saudi Arabia. Our research question is as follows: Do Saudi people's attitudes toward internet technology and demographics have any influence on their adoption of online buying?

Objectives of the research:

The main objectives are to:

- Identify factors that could explain the level of online buying in Saudi Arabia;
- Determine Saudi people's attitudes toward technology using the TRI;
- Investigate the relationship between Saudi people's attitudes toward technology and demographics on their adoption of online buying; and
- Highlight how organizations and businesses that aim to target Saudi customers may obtain benefits from our findings and may adjust their businesses based on Saudi customers' attitudes toward technology and based on their demographics trends.

II. Literature Review

1. Global online retail background

Since the late 1990s, e-commerce has been growing rapidly in developed countries. Currently, global e-commerce transactions have reached US\$10 trillion; while there were only US\$0.27 trillion in 2000 (Kamaruzaman et al., 2010). The United States, followed by Europe, share the largest e-commerce revenues and these collectively comprise around 79% of global e-commerce revenue. On the other hand, Africa and the Middle East only share 3% of the global e-commerce revenue (ibid).

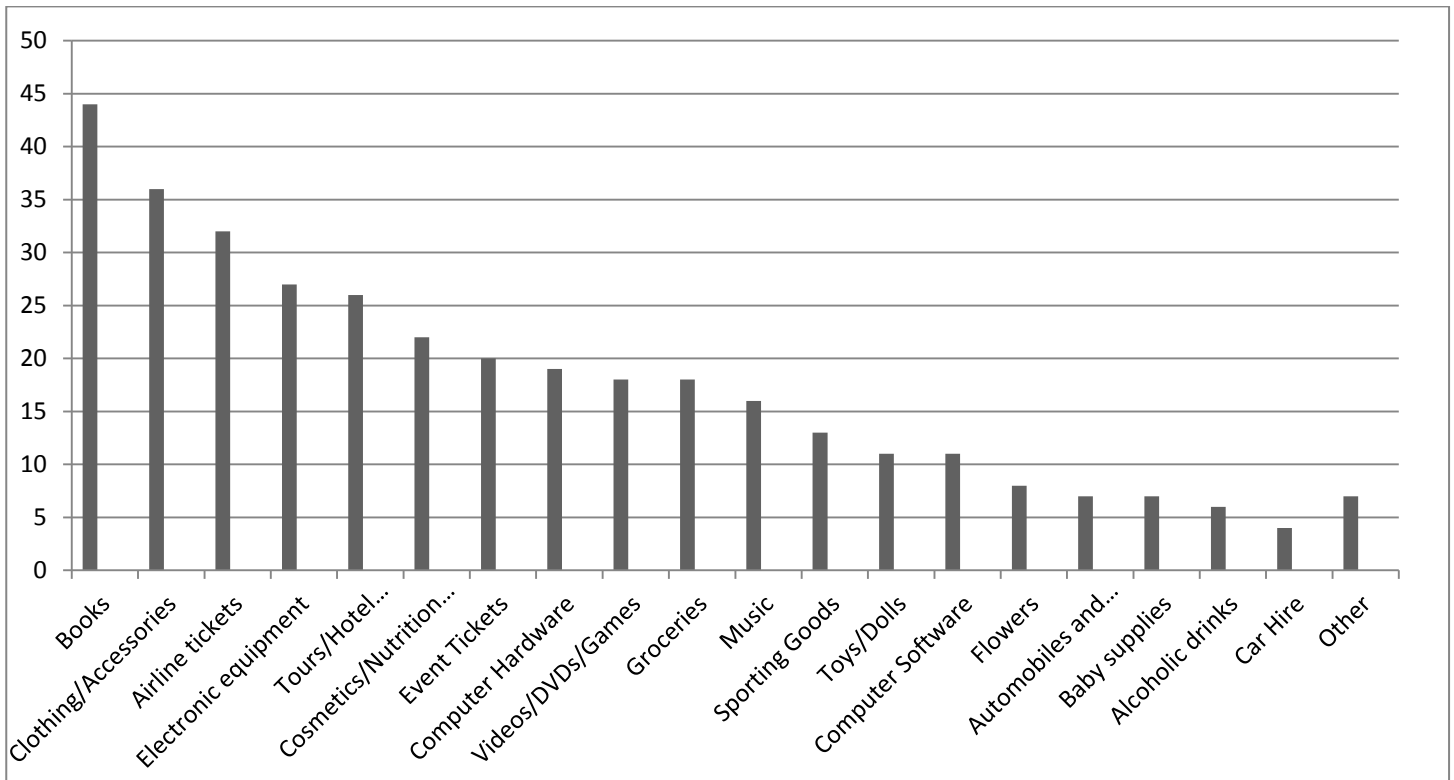
E-commerce involves several different models (e.g. B2B, B2C and C2C). E-commerce could target customers directly through Business to Consumer (B2C) e-commerce, as is the approach used by Amazon or any other retail store that operates online. B2C shares small e-commerce revenue compared to Business to Business (B2B) e-commerce. In B2B, transactions occur between businesses, such as between a manufacturer and a wholesaler, or between a wholesaler and a retailer (Kraemer et al., 2006). There is also Consumer to Consumer (C2C), which usually takes place in online communities, forums or third party sites, whereby a person tries to sell his/her belongings to another person through third parties as on eBay, or directly as on Craigslist (Jones & Leonard, 2007). Online buying is a major component of the Business-to-Consumer (B2C) category of electronic commerce (Elliot & Fowell, 2000), which is related to the transactions of buying and selling information, products and services via the internet (Kalakota & Whinston, 1996). It is defined as an internet-enabled version of traditional shopping (Laudon & Traver, 2007), whereby merchants sell products and services using the internet, and customers buy these

products also using the internet enjoying the ease and convenience of being able to perform this action in any place where the internet is available (Hoffman & Novak, 1996).

There are four types of online shopping: Virtual Merchants (online retail stores only); Bricks-and-Clicks e-retailers (online distribution channel for a company that also has a physical store); Catalogue Merchants (the online version of the direct mail catalogue); and, manufacturers selling directly over the web (Laudon & Traver, 2007).

Consumers around the world are moving toward shopping at these one-click stores. Online shopping is also growing in the Middle East with around 19 million internet users (Almaghrabi et al., 2010). In terms of statistics regarding online shopping around the world, a study conducted by the Nielsen Company in March 2010 covering over 55 markets in the Asia Pacific region, Europe, the Middle East (including Saudi Arabia), North America and South America, aimed at obtaining information and understanding about many aspects of e-commerce including how consumers shop online, what they intend to buy, how they use various sites, the impact of social media, and other factors that come into play when they are trying to decide how to spend their money. What is of relevance for the purpose of our study are the percentages and numbers of online users and the trends in terms of products bought online. The graph below shows the global average of products bought online (The Nielsen Company, 2010).

Figure 1: The global average of products bought online in 2010.



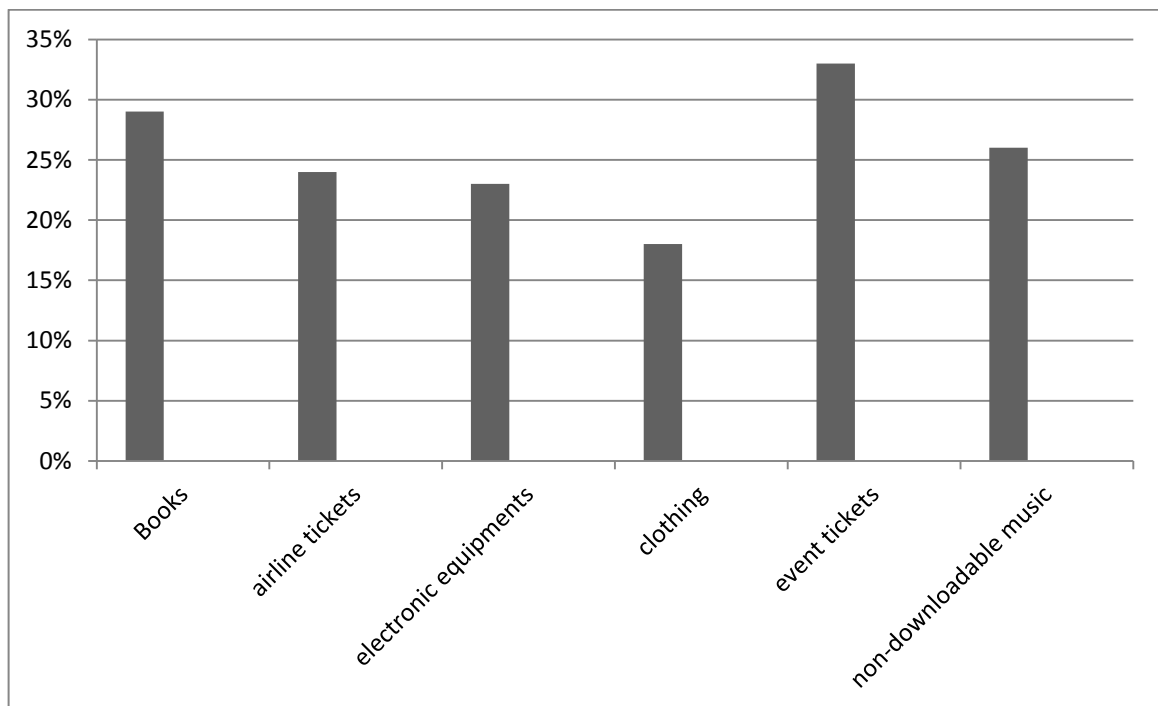
Source: <http://hk.nielsen.com/documents/Q12010OnlineShoppingTrendsReport.pdf>

Looking at the global data in detail, China and Korea have the highest number of online shoppers among Asian countries. The data revealed that 95% of Chinese and Korean online users are planning to purchase online within the next six months. Online shoppers in Korea tend to buy books, cosmetics, clothing/accessories/shoes, and groceries. Chinese also tend to buy books and clothes with 40% of them tending to purchase electronics via the internet. A large number of online users in Europe (79%) intend to purchase products or services online within the next six months. Online consumers in Norway and the United Kingdom show the greatest propensity with almost 90% planning a web purchase in the near future. Users of Estonia, Croatia and Latvia indicate that they would not make any online purchases within the next six months. Over half of online residents in Australia intend to turn

to the internet for books while online shoppers in Germany and the Czechs Republic plan to purchase clothes and shoes.

Moving our attention to the Middle East, approximately half of online users in the Middle East, Africa and Pakistan region (47%) have never purchased online, which is considered the highest in comparison with the other regions of the world and is indicative of the fact that the level of online shopping in this region is the most under-developed in comparison with the other regions of the world. Furthermore, one-third indicates no intention to purchase online within the next six months. Products and services that are popularly bought online in this region are shown in the graph below (The Nielsen Company, 2010):

Figure 2: Products and services popularly bought online in the Middle East in 2010.



Source: <http://hk.nielsen.com/documents/Q12010OnlineShoppingTrendsReport.pdf>

2. Factors influencing the adoption of online shopping around the world

Previous studies conducted around the world have shown that many factors can influence people's adoption of online shopping (Bohn, 2005; Barbonis & Laspita, 2005; Eliot, 2002; Karkaya & Charlton, 2001; Teo, 2002; Udo, 2001). Consumers are strongly influenced by cultural, social, personal and psychological characteristics when deciding whether to make a purchase (Armstrong & Kotler, 2000). These characteristics can be classified into external factors which include demographic, economic, social, situational and technological factors, and internal factors that include beliefs, attitude, motives, needs and personality, and perception and values (Wu, 2003). Some studies have discussed factors related to customers' demographics and their adoption of online shopping (Brown et al., 2003; Chau & Cole, 2002; Korgaonkar et al., 2004; Li et al., 1999; O'Keefe et al., 2000). Other studies have discussed personal traits and their impact on online shopping (Huang & Yang, 2010; Tsao & Chang, 2010; Wang & Yang, 2005); shopping motivations (Johnson et al., 2004; Wolfenbarger & Gilly, 2001); cultural dimensions (Park & Jun, 2003; Park et al., 2004; Stafford et al., 2004); and also technological factors (Boldrin & Levine, 2002; Martinez & Williams, 2010; Ho et al., 2011). Demographics, cultural dimensions and the technology adoption level are briefly explained below. Shopping motivations and personal traits are presented in a future section.

2.1 Demographics

Around the world, internet users differ according to their demographic characteristics: gender, income, education and age, and their shopping patterns differ accordingly (Porter & Donthu, 2006). Consumer demographics have been frequently studied

since the late 1990s in terms of the field of factors influencing online shopping since late 1990s (Bellman et al., 1999; Jarvenpaa & Tractinsky, 1999; Li et al., 1999). In traditional shopping, women are known to be more attracted to shop, to have a more positive attitude toward regular shops and to usually be responsible for the household (Alreck & Settle, 2002). However, studies about gender and its relationship with virtual stores have demonstrated that males buy more products online (Li et al. 1999; Stafford et al. 2004) and spend more money online than females (Susskind, 2004). For example, a study done by Chen & Wellman (2004) about internet use in eight countries (the U.S, South Korea, Japan, Germany, Italy, China, Mexico and the U.K) found that males use the internet more than females. This difference between males' and females' adoption could be attributed to the following reasons: shopping orientation (Rodgers & Harris, 2003; Swaminathan et al., 1999), product involvement (Slyke et al., 2002), and product properties (Citrin et al., 2003). In terms of shopping orientation, studies indicate that women are less convenience-oriented and more interested in social interactions with others, and conversely that men are more convenience- oriented and tend to be more individualistic (Swaminathan et al., 1999). In online shopping, there is no high level of social activity, there are no interactions with sales people and there are not many physical actions needed to accomplish online buying tasks (Rodgers & Harris, 2003). In terms of product involvement, studies indicate that men are more interested in buying electronics, both hardware and software, whereas women are more interested in buying clothing. In the first stage of online shopping, products sold online were used more male-oriented, so women were not interested in shopping online as they did not find much that interested them (Slyke et al., 2002). Additionally, women need to evaluate products more than men (Citrin et al., 2003). They need to touch and try the product before

making a buying decision whereas the ability to touch and try the products is not available when buying products online.

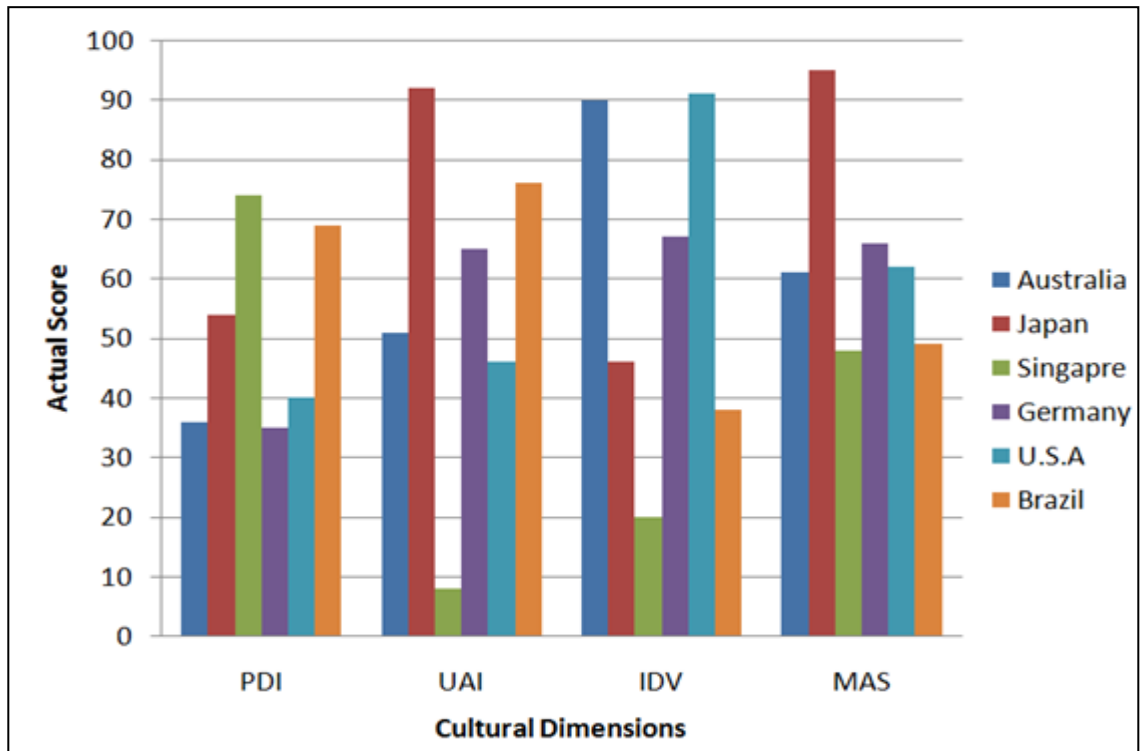
As for age and how it differs with regard to online shopping, some studies indicate a negative relationship between age and the adoption of online shopping (Joines et al., 2003). For example, young people are more likely to adopt M-commerce than older internet users (Bigne et al., 2005). Apart from age, online shopping also differs according to consumers' income and level of education; some studies have shown a positive relationship between level of education and income and the amount of money spent online. Consumers who buy online are generally better educated than those internet users who do not, and high income users purchased online more and on a more regular basis than low income users, 80% to 65% (Li et al., 1999). As for the level of education, the higher the level of education, the more money that is spent on buying products or services (Li et al., 1999; Liao & Cheung, 2001).

2.2 Culture

Cultural dimensions have been found to play a significant role in the adoption of online shopping (Wee & Ramachandra, 2000; Stafford et al, 2004; Bohn, 2005). Culture is defined as a complex set of elements and relationships that include knowledge, beliefs, art, law, morals, customs, and any other components that members of a society may acquire (Straub et al., 2002). Hofstede (1991) categorized culture into five dimensions. These are as follows: Power Distance (PDI), Individualism vs. Collectivism (IDV), Masculinity vs. Femininity (MAS), Uncertainty Avoidance (UAI) and Long-Term Orientation (LTO). Among these five dimensions, individualism-collectivism (Chau & Cole, 2002; O'Keefe et al., 2000; Park and Jun, 2003), masculinity-femininity (Stafford et al., 2004) and uncertainty avoidance (Bohn, 2005) have been used to predict online consumer behaviour. The

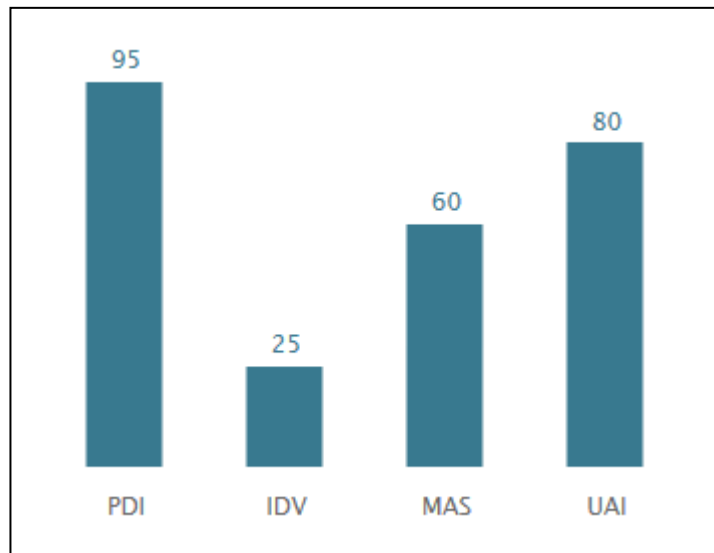
following graphs show the cultural dimensions scores for selected countries and for Saudi Arabia.

Figure 3: Cultural dimensions index scores for selected countries



Source: <http://geert-hofstede.com/countries.html>

Figure 4: Cultural dimensions index scores for Saudi Arabia

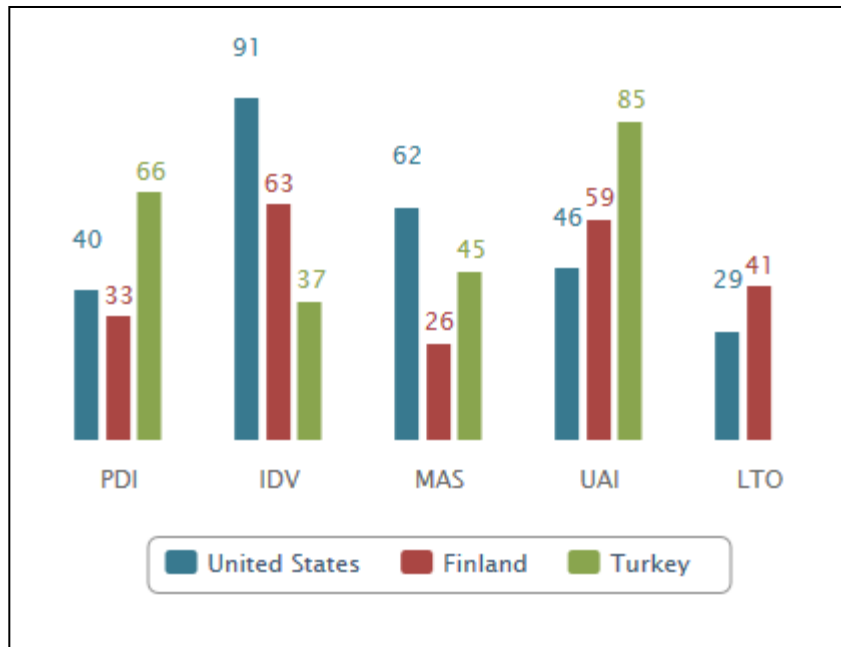


Source: <http://geert-hofstede.com/saudi-arabia.html>

Individualism versus Collectivism (IDV): Refers to the degree to which people are connected together (Hofstede, 1984). Individualistic societies (e.g. the U.S.) have fewer relationships between individuals. In these societies, every individual tends to be concerned about himself/herself and his/her immediate family. Individual people tend to use the internet mainly for personal purposes such as e-commerce and information searching (Chau & Cole, 2002; O'Keefe et al., 2000; Park & Jun, 2003). On the other hand, in collectivist societies (e.g. Singapore), people are strongly integrated and have deep relationships with extended family members. Furthermore, each individual is concerned about protecting the others. They use the internet mainly for social communication and hobbies, such as sending and receiving e-mails, accessing/downloading software, and conducting work-related research (Wee & Ramachandra, 2000).

Masculinity versus femininity (MAS) refers to the ways in which males and females are treated unequally. In societies characterized by high masculinity (e.g. Japan), males are given more control and power, and there is a high degree of gender differentiation. In societies characterized by low masculinity (e.g. Brazil), females are given the same rules, values and powers as males, and both genders are treated equally (Hofstede, 1984). A study done by Stafford et al. (2004), which involved customers from countries with different masculinity scores, showed that the online shopping behaviour of consumers in the U.S., which has high masculinity score, is different relative to that of consumers in Turkey, which has a moderate masculinity score, and is also different relative to that of consumers in Finland, which has the lowest masculinity scores according to Hofstede (1984). The online shopping involvement level was lower in Finland than in Turkey, but the level of involvement was similar in the U.S. and Turkey (Stafford et al., 2004). The graph below shows masculinity levels in the U.S., Turkey and Finland.

Figure 5: Cultural dimensions index scores for the U.S, Turkey and Finland



Source: <http://geert-hofstede.com/united-states.html>

The Uncertainty avoidance Index (UAI) refers to the degree of tolerance that people in a society would have when facing new and unknown situations. In uncertainty avoiding societies, people tend to restrict any such situations by means of regulations and rules. Conversely, uncertainty-accepting societies are not rule-oriented. People there tend to tolerate new situations with as few regulations as they can. Bohn (2005) examined the relationship between two of Hofstede's cultural dimensions that are the Uncertainty Avoidance dimension (UAI) and the Individualism dimension (IDV) in a cross-cultural study that aimed to investigate the factors that influence individuals to buy or avoid buying online depending on their cultures. Based on the scores of Hofstede's survey, participants were classified as having low or high Uncertainty avoidance (UAI), and low or high Individualism (IDV). He found that time savings, better prices, convenience and

availability are the most important factors that influence people to buy in all of the involved cultures, but the degrees of importance of these factors differ among the cultures. For example, time savings was the most important factor for cultures with low individualism (IDV), whereas availability was the most important factor for cultures with high individualism (IDV) and low uncertainty avoidance (UAI).

2.3 Technology adoption level

Internet-based selling technology adoption also affects the adoption of online shopping. The development of information and communication technology (ICT) has created opportunities for e-services and products to rise up globally. However, the level of development of ICT infrastructure is still rather limited to developed countries compared to developing countries. These developed countries are led by the U.S., and are followed by some emerging economies, such as Singapore, South Korea and China. Technological products and services are mostly adopted in countries that are productive (Ho et al., 2011). Therefore, developing countries are still behind in the adoption of such technologies, which limits their ability to develop B2C e-commerce (e.g. Agarwal et al., 2005; Zhu et al., 2006). Studies have been carried out to understand the relationship between internet-based selling technologies and e-commerce adoption (e.g. Boldrin & Levine, 2002; Martinez & Williams, 2010). For example, the findings of a study that was done by Ho et al. (2011) showed that the adoption of internet-based selling technology in a country has a positive effect on its B2C e-commerce growth (Ho et al., 2011).

3. Perceived pros and cons of online shopping

The advantages of online shopping could include the availability of a wide selection of products and services, the ease of comparing sellers' prices, convenience reasons related to the comfort of shopping at home and of receiving delivery of the products to one's home, time savings, avoidance of bad weather, and lower prices compared to regular store (Karkaya & Charlton, 2001; Childers et al., 2001). On a global basis, countries differ significantly in terms of their perceptions of the advantages of online shopping. Studies cite holiday crowd avoidance, ease of comparison, low prices, availability of shipping, convenience and time saving, and avoidance of bad weather as key benefits of shopping online around the world (Lorek, 2003).

A study conducted by Forsythe et al. (2006) to measure the perceptions of online shopping showed that convenience, ease of shopping, and product selection are the main perceived benefits of online shopping. Additionally, the findings of another study conducted by Teo (2002) showed that, in Singapore, the availability of items online was the main advantage of buying through the internet. People buy products online because they are able to find items that they cannot find in regular stores (Teo, 2002). Another study conducted by Ahuja, Gupta & Raman (2003), which examined the reasons for which students and non-students like to shop online in the U.S, found that the primary reasons for students were, in declining order of importance, convenience (in terms of avoiding the crowds, parking and checkout lines), better prices and saving time. On the other hand, for non-students, saving time and convenience were tied as the most important reasons, better prices was the third most important reason, and the availability of a wide variety of products and services was the fourth reason (Ahuja, Gupta & Raman, 2003).

According to a study by Horrigan (2008), American internet users' perceived benefits of online shopping are mostly convenience and a time-saving; 78% of internet users agree and 53% of them strongly agree that shopping online is convenient. On the other hand, 68% of American internet users agree and 47% strongly agree that online shopping saves them time. Convenience was also the main benefit influencing people to buy from a number of Australian online stores such as Dymock, GreenGrocer's and Wineplanet (Eliot, 2002). Additionally, a number of studies have shown that a better price is also an advantage of online shopping. A study conducted by Gennaro & Hargrave, involving 1309 participants in the United Kingdom demonstrated that most participants agreed that they are able to find better prices online than in regular stores (Bohn, 2005).

On the other hand, there are commonly perceived risks that, globally, are discouraging people to buy through the internet. In the virtual environment, consumers cannot touch and see a product physically before buying it, and they cannot ensure the safety and security of their personal information online. Broadly speaking, the perceived risks of online shopping can be classified into three types: financial and privacy risk, product risk and convenience risk (Forsythe et al., 2006; Karakaya & Charlton, 2001; Udo, 2001).

Financial and privacy risk is either the potential loss of money (e.g. the illicit use of credit cards' details to steal other people's money) or the potential theft of personal information through the internet. Product risk is connected to the potential non-performance of the product after it is purchased, as a result of the customer being unable to physically examine, touch or see the product before buying it, and this risk may result in the dissatisfaction of the customer. Convenience risk is associated with customers' perceived inconvenience during the buying process; inconvenience could include facing technological

difficulties while placing an order online. Bhatnagar & Ghose (2004) have stated that the product and financial risks are strongly associated with any online shopping (Forsythe et al., 2006).

Privacy and security are the main issues associated with online shopping (Karakaya & Charlton, 2001). A study by Udo (2001) found that privacy and security issues concerned most of the 158 online IT users surveyed in a city in the southeast United States. Similarly, Lebo (2001, 2003 and 2004) found that most of the households that participated in his study considered privacy an issue that is associated with buying online. However, the percentages of people concerned about their privacy declined noticeably over the years covered by the three studies. In 2001 the percentage was 94.6%, which declined to 88.8% in 2003, and then to 88.2% in 2004 (Bohn, 2005). Although the percentages declined during these years, 88.2% is still considered high. Concerns about credit card issues were also negatively influencing people's online buying. A study found that people were concerned about the security of their credit cards' numbers and their personal information while shopping online (Udo, 2001). Another study found that the majority of households that participated in the study were worried about their credit cards' numbers being stolen (Swinyard & Smith, 2003). A study conducted by Horrigan (2008) showed that most of American internet users are concerned about sending private or financial information over the internet. Although the number of online shoppers is growing considerably, online shoppers are still concerned about their credit card and personal information over the internet. Indeed, 75% of internet users included in the survey either agree (39%) or strongly agree (36%) with the proposition that they do not like sending their financial or personal data through the internet. The security of credit card numbers has perhaps been the largest concern since the appearance of online shopping (Kwon & Lee, 2003, Szymanski & Hise, 2000).

Lack of customer service is also a disadvantage of buying online. This can be seen when comparing regular shops and virtual shops. In regular shops, customers deal with sales people when asking about prices and particular products and when paying for their purchases. Conversely, in virtual shops, customers are responsible for finding the prices of the products and information about them, and they have to pay on their own; in other words, there is little or no customer service. In a study done by Ahuja, Gupta & Raman (2003), lack of customer service was the second most serious disadvantage of online shopping. This includes the inability to obtain help or reach someone with regard to difficulties during the buying process as well as with regard to post purchase service problems.

In addition to the lack of customer service, there is also lack of personal interaction in online shopping (Barbonis & Laspita, 2005). Interaction in regular shopping occurs in dealing with sales people and may also occur in interacting with a shopping companion. These two kinds of interactions are unavailable in virtual shopping. In a study by Ahuja, Gupta & Raman (2003), it was found that the lack of interaction was the third most important factor negatively influencing people with regard to buying online.

In conclusion, online shopping has many advantages and disadvantages. On the one hand, the advantages of online shopping could include the diversity of the available selection of products and services, the ease of comparing sellers' prices, the convenience of shopping from the comfort of shopping from one's home and of receiving home delivery, the time savings, the avoidance of bad weather and the lower prices compared to regular stores (Karkaya & Charlton, 2001; Childers et al., 2001). On the other hand, there are some disadvantages associated with buying online. One of them is the lack of first-hand experience because consumers are unable to physically see and touch the product before

buying it. In addition, consumers cannot ensure the safety and security of their personal information online. In general, the perceived risks of online shopping can be classified into three types: financial and privacy risk, product risk and convenience risk (Forsythe et al., 2006; Karakaya & Charlton, 2001; Udo, 2001).

4. Consumer behaviour characteristics and the adoption of online shopping

Previous studies have shown that consumers' characteristics play a role in their online behaviour such as in purchasing from a website (Wolfenbarger & Gilly, 2001; Wu, 2005). Consumers are strongly influenced by their cultural, social, personal and psychological characteristics when doing a purchase (Armstrong & Kotler, 2000). These characteristics can be classified into external factors including demographic, economic, social, situational and technological factors, and internal factors including beliefs, attitudes, motives and needs, personality, perception and values (Wu, 2003).

4.1 Personal traits

Personal traits are also factors that might influence people in adopting online shopping. Personality "determines the unique thinking and behaving patterns of an individual" (Allport, 1961). Traits, however, are "the degree of this emerged uniqueness when an individual is observed from different angles or dimensions" (Allport, 1961). From a psychologist's point of view, consumer behaviours are related to personal traits (Allport, 1961; Endler & Magnusson, 1976). Ajzen considered the relationship between personal traits, attitudes and behaviour in developing the Theory of Reasoned Action (TRA), and showed that personal traits indirectly influence individuals' behaviour (Ajzen, 1988). Personality traits contain five principles recognized as together constituting the Five Factor Model (FFM) (Eysenck, 1991): Extraversion (E), Conscientiousness (C), Agreeableness (A), Neuroticism (N) and Openness (O). Extraversion (E) refers to positive and optimistic people who are willing to challenge and take risks and who tend to be more action-oriented. Conscientiousness (C) refers to people who are responsible, highly organized, efficient and

self-controlled. Agreeableness (A) refers to people who are easily agreeable, polite, friendly and trustworthy. Consequently, people with these types of personal traits easily trust shopping websites and like to engage in interactions while doing their online shopping. Neuroticism (N) refers to people who are unstable, are unable to control their emotions and easily become scared or angry. Openness (O) refers to people who have a wide range of interests and who are willing to consider different opinions, points of view, experiences and cultures (Tsao & Chang, 2010; Wang & Yang, 2005). A study conducted by Huang & Yang (2010) examined the relationships among these five factors with regard to the adoption of online shopping, and the findings show that people with high openness shop online for the purpose of obtaining excitement, stimulation and information about new trends. It therefore follows that openness is positively related to online shopping. The other factor that was examined was conscientiousness, and it was found that people with high conscientiousness shop online because this activity takes place in a comfortable environment and is convenient; therefore, conscientiousness is also positively related to online shopping. The relationship between Extraversion and online shopping was also examined, and the results indicated that people with high extraversion are expected to shop online since the online environment is full of new experiences and shared information; this shows a positive relationship between online shopping and this factor. As for Neuroticism, findings show that highly neurotic people are also likely to shop online as this environment allows for transactions without social interactions. Thus, this factor is also positively related to online shopping (Huang & Yang, 2010).

Goldsmith (2001) considered innovativeness as a personal trait that plays a role in the adoption of online shopping. There is a relationship between innovativeness and online shopping because online shopping is an innovative behaviour in comparison with traditional

shopping. Innovativeness is positively related to online shopping. Results have shown that innovativeness has positive effects on both the intention to buy online and on the action of buying online (Goldsmith, 2001).

4.2 Motivations

Shopping motivations also constitute a factor influencing online shopping behaviour as it was found to play a key role in the time spent searching for products and making purchases (Joines et al., 2003). In traditional shopping, consumers shop differently according to their motivations; some have hedonic motivations and others have utilitarian motivations (Childers et al., 2001). Utilitarian consumers are called goal-oriented shoppers, and are concerned with the time that they spend looking for what they need, the efficiency of their shopping, the ease of shopping, the reasonableness of the price and the availability of the product selection (Sarkar, 2011); on the other hand, hedonic consumers are called experiential shoppers and are only shopping for purposes of entertainment, interesting shopping experiences and enjoyment (Childers et al., 2001; Sakar, 2011). The utilitarian motivations have been studied more and are more important in the online shopping environment than the hedonic motivations (Bhatnagar & Ghose, 2004; Brengman et al., 2005). The reason behind the importance of utilitarian motivations in the field of online shopping is that most of the benefits that utilitarian consumers are seeking are available in the online shopping environment, including availability of product selection and ease of shopping. A study done by Forsythe et al. (2006) shows that convenience, ease of shopping, and product selection, which are utilitarian benefits, are benefits that mostly appear in online shopping. In comparing hedonic shoppers' perceived benefits such as entertainment with utilitarian shoppers' perceived benefits, we can infer that customers with high utilitarian

shopping motivation are more likely to engage in online shopping and to obtain their perceived benefits to a greater extent than customers with low utilitarian shopping motivation (Sakar, 2011). Hedonic shoppers go to online stores just to gather information such as searching for a topic of interest (Wolfenbarger & Gilly 2001), and are attracted to sites that are easy to investigate, are well designed and offer a sort of community. Hedonic shoppers usually enjoy environments that establish interactivity between customers (Childers et al., 2001). Even though hedonic shoppers do not have a particular aim in their minds other than to navigate, retailers can capture these shoppers' attention while they are navigating an online store through an attractive website design and the creation of a sense of community in order to convert their navigation into a real purchase (Zhou et al., 2007).

4.3 Attitude toward internet technology

The use of technology-based services and products is increasing at a rapid pace. The introduction of a new technology will fully show its value and will succeed only when individuals are willing to accept and adopt it in their daily lives. Technological products may facilitate customers' electronic transactions, and may give them a way to reach electronic markets on the one hand. On the other hand, if customers face challenges in accomplishing their tasks when using these sophisticated technology-based services, customers may simply avoid using them, and that may turn into negative attitude toward technology (Parasuraman, 2000). Attitude is a tendency or a feeling to react in a positive or a negative way to a particular idea, object, person, or situation. Individuals are influenced by their attitudes in their choice of action, and their responses to challenges, incentives, and rewards (Schiffman, Kanuk & Wisenblit, 1997; Grandom & Mykytyn, 2004). In terms of online shopping, a consumer's attitude toward online shopping is defined as his/her positive or negative feelings

related to accomplishing the purchasing behaviour on the internet (Schlosser, 2003a). Frustration at performing online shopping is serious as people's feelings about online shopping are a way to predict their intention to adopt it (Parasuraman, 2000).

Several theories explain how attitude and behaviour linked together. One of these theories is the Theory of Reasoned Action (TRA). This theory was developed to explain how consumers behave while doing a purchase (Fishbein, 1980). This theory asserts that attitude toward buying and subjective norms are the antecedents of performed behavior (Fishbein & Ajzen, 1975). Using this theory, researchers investigated the attitude of undergraduate students with regard to buying apparel products online. The findings of the study showed that attitude and intentions are significantly related. Students who had the intention to buy products online also had a positive attitude toward shopping online for apparel products (Schiffman, Kanuk & Wisenblit, 1997). Another theory that links behaviour and attitude is the Theory of Planned Behaviour (TPB). The TPB is an extension of the TRA (Schiffman, Kanuk & Wisenblit, 1997). It states that "behaviour can be explained by behavioural intention, which is influenced by attitude, subjective norms, and perceived behavioural control" (Schiffman, Kanuk & Wisenblit, 1997). A relevant proposition underlying the theory of reasoned action was also offered by Lutz (1991). This proposition mainly indicates that in order to predict a buying behaviour, it is essential to measure the individual's attitude toward the way in which she/he performs the behaviour and not simply his/her attitude toward the item purchased. For example, a person might have positive attitude toward products that are available online such as airline tickets, shoes, accessories, but he/she might have negative attitude toward the way in which buying online is performed, to the extent that might simply avoid buying online. Therefore, based on these

theories, we see how important attitude is in terms of influencing the adoption of a new technology such as online shopping.

Several theoretical models have also been used to obtain a better understanding about the relationship between consumers' attitude toward technology and their adoption of new technologies and electronic services. The table below summarizes studies have been conducted using different technology acceptance models to find the link between attitude and technology adoption.

Table 1: Models used to find the link between attitude and technology adoption and their findings

| Model Used | References | Major Findings |
|--|--|--|
| Technology Acceptance Model (TAM) | Davis 1989, Bagozzi & Warshaw 1992; Klopping, McKinney. 2004; Park, 2009; Wahid, 2007; Mccloskey, 2004; Almutairi, 2007; Lederer, Zhuang, Sena &Maupin, 2000; Lin & Lu, 2000 | Perceived usefulness and perceived ease of use impacts people's adoption of new technologies. |
| Technology Readiness and Acceptance Model (TRAM) | Lin & Chang, 2011; Lin, Shih & Peter, 2007 | Customer Technology Readiness enhances perceived usefulness, perceived ease of use, the attitude toward use, and the intention to use self-service technologies (SSTs). |
| Technological-Personal-Environmental Model (TPE) | Jiang, Chen & Lai, 2010 | Self-Efficacy, Technical Needs, Perceived Usefulness, Extraversion, Risk Aversion, Compatibility, Imitation Behaviours and Institutional Pressures impact people's attitude toward the adoption of new technologies. |
| The Unified Theory of Acceptance and Use of Technology (UTAUT) | Al-Gahtani, Hubona & Wang, 2007; Cameron, 2006. | Performance expectancy, subjective norms, experience and social influence have a positive influence on the use of technology. |

Another theoretical model is related to the Technology Readiness Index (TRI). TRI is a measurement tool that was developed by Parasuraman (2000) in order to measure people's readiness to use and interact with technology. Parasuraman defined TRI as follows "The technology-readiness construct refers to people's propensity to embrace and use new

technologies for accomplishing goals in home life and at work” (Parasuraman, 2000, p.308). This model will be used in this study to measure people’s attitude toward the use of online shopping. It is related to this study as it measures the readiness to use technology in home life and at work, which relates directly to our study since people mainly engage in online shopping in their daily life. This model consists of four dimensions; those that are drivers of technology readiness are optimism and innovativeness, and those that are inhibitors are: discomfort and insecurity.

- 1) Optimism refers to positive beliefs and views toward a new technology. People who have a high degree of optimism believe that technology makes their lives easier, and gives them more control and efficiency.
- 2) Innovativeness is the tendency to learn about innovations and to adopt them.
- 3) Discomfort is a feeling of inability to control technology as well as a feeling of being defeated by it.
- 4) Insecurity is suspicion and distrust about technology combined with uncertainty about its capability to work in a proper way (Parasuraman, 2000).

Previous studies have been conducted using the Technology Readiness Index (TRI) to examine people’s readiness to adopt new technologies. In a study conducted to explain an individual’s use of e-services in Taiwan, the TRI was integrated with the Theory of Planned Behaviour (TPB), and the results of this study showed that attitude and perceived behaviour both have an influence on a person’s use/adoption of e-services. However, subjective norms do not have any influence (Chen & Li, 2010). Additionally, another study by Lanseng & Andreassen (2007) examined the adoption of self-service technology (SST) in health diagnosis; this technology was developed and implemented to reduce cost and enhance

quality in the health care field. The study was aimed to test people's readiness for and attitudes toward performing self-diagnosis. Findings showed that the Technology Acceptance Model (TAM), which is based on the Technology Readiness Index (TRI), is able to predict people's intention to use self-diagnosis in the future (Lanseng & Andreassen, 2007). Zeithaml et al. (2002) indicated that there is a positive relationship between Technology Readiness (TR) and appreciating self-service technologies. Furthermore, Yen (2005) found that people's level of satisfaction with technology is associated with people's technology readiness. People with a better attitude toward technology are more likely to enjoy and be more satisfied with self-service technologies than people with lower Technology Readiness (Yen, 2005).

5. Online shopping background in Saudi Arabia

Although Saudi Arabia is experiencing the largest growth in information and communication technology (ICT) in the Middle East, online shopping adoption level is still a nascent phenomenon in this country (Saudi Ministry of Commerce, 2001; Alotaibi & Alzahrani, 2003; U.S. Commercial Services, 2008; Alfuraih, 2008). A report issued by Saudi Alhokair Group, mentioned that the trade market in Saudi Arabia had an annual growth rate of 5.8% throughout the last decade, and exceeded 90 billion Saudi Riyal (SR) of trade volume in 2010 (1 US\$ = 3.75 SR), exceeding forecasted level of only 70 billion SR. In addition, the trade volume is expected to reach 130 billion SR in 2012 (Habtoor, 2011). However, with regard to the adoption of e-commerce, firms in Saudi Arabia generally do not seem to be following the developed countries' quick adoption of online shopping. But, compared to the other countries in the Arab world, Saudi Arabia seems to be advanced in the

adoption of e-commerce. In mid-2006 the Arab Advisory Group conducted a survey which was aimed to investigate internet usage and e-commerce activities in four Arab countries: Saudi Arabia, UAE, Kuwait and Lebanon. Findings show that the UAE was the leader in terms of annual e-commerce spending per capita; whereas Saudi Arabia was the leader in terms of the total money spent on e-commerce. As for the level of popularity how of e-commerce activities among various Arab populations, the UAE was ranked first at 25.1% of the entire population, Saudi Arabia was second at 14.3%, and Kuwait was third at 10.7%; the percentage decreases dramatically in Lebanon with e-commerce reaching only 1.6% of the Lebanese population (AAG, 2008).

Companies in Saudi Arabia can be divided into four main categories in terms of their respective stages in the adoption of online shopping. The first category is comprised of the large companies that operate offline but with a web site that can perform all or some of the following functions: some transactions and payments, whereby consumers can reserve and buy tickets and are only able to pay only by credit card (e.g. Saudi Airlines); online checking of accounts and payments of some of bills (e.g. Alrajhi bank); and online checking of telecommunications statements and payments of these bills (e.g. Saudi Telecom Company). The second category is comprised of companies that operate online to advertise and provide information about their products and services and provide address of their offline store without offering the ability to do any online transactions. An example about this category is the Jarir book store, whose website gives customers information about the many branches of the company as well as about the prices and promotions of their products while not enabling customers to actually buy the products online. The third category is comprised of companies that have only a one-page website to provide their addresses and information about how to contact them such as Extra shops. The last category is comprised of small companies that

operate offline without any online pages or web sites and with no intention for future involvement with e-commerce. The last category is the most common type in Saudi Arabia (Aleid et al., 2009).

Studies have been conducted in recent years to investigate the reasons underlying the tendency of the Arab world in general and of Saudi Arabia in particular to lag behind in the adoption of online shopping. Most of these studies have been limited to barriers influencing or contributing to environmental, architectural and regulatory factors such as the lack of address systems, the absence of clear regulations about how to protect all involved parties and security and privacy issues (Aleid et al., 2009; Alghaith et al., 2010). Some of the barriers to online shopping in Saudi Arabia are described below.

5.1 Availability of Internet service

Multiple companies in Saudi Arabia are providing high-speed internet connections to most of Saudi cities including Mobily and Saudi Telecom. This internet connection could be a DSL connection, a dialup connection or a satellite connection. However, small and rural villages and towns are still experiencing difficulties in using the internet as the only available connection in these areas is dial up (STC.com.sa & mobily.com.sa). Despite the availability of DSL connections in the main cities, even these connections may stop working for long hours or even for an entire day, which discourages individuals from using the internet conveniently and continually; moreover, people have to wait for a long period of time in a waiting list in order to have a DSL connection installed at their home (Aleid, Rogerson, & Fairweather, 2009).

5.2 Cost of the internet

Saudi people's incomes differ significantly from one person to another (Al Ahmadi, 2004). People with high income find that the cost of the internet is reasonable. However, low-income people, who usually live in cities and villages, find it expensive to pay for the internet, which also prevents a large number of Saudi citizens from using the internet (Aleid, Rogerson, & Fairweather, 2009). The average cost of an internet connection in Saudi Arabia ranges from 39.73 U.S. dollars per month to 120 U.S. dollars per month without the including installation fees and modem rentals (STC.com & Mobily.com), which is considered expensive for low-income people.

5.3 Absence of postal systems

In Saudi Arabia, there is no clear and uniform system of addresses (Saudi Post.com). The lack of accurate addresses in Saudi Arabia makes it difficult for many online shoppers to describe where they want their products to be shipped because they have no clear address to provide; similarly, companies find it difficult to ship to a vague address. As a result, customers either have to describe where their home is located or have to choose their purchases delivered to a post office where they can come to pick the items up themselves, which would cost them more money due to the need to pay for the post office as well. The absence of a clear postal system discourages both the parties on both sides of transactions from engaging in online shopping (Aleid, Rogerson, & Fairweather, 2009).

5.4 Privacy

Studies have demonstrated that some customers may leave or cancel a buying process because of a privacy concern and because of the sensitivity of their personal information (Lessig, 1999; Shapiro, 2000). In Saudi Arabia, there is indeed an association between the perceived privacy of a site and the willingness to shop at a site (Al-Ghaith et al., 2010). People fear for the privacy of their information as Saudi laws and regulations do not provide any rights for privacy. In the criminal law regarding information technology, there is no definition of privacy nor any punishments related to it. If companies or organizations were to decide to sell their customers' information to third parties, no law would be available to protect the privacy of the Saudi customers (Al-Ghaith et al., 2010). A study by Al-Ghaith, Sanzogni & Sandhu (2010) showed that privacy was the second most important barrier to the adoption of e-services in Saudi Arabia.

5.5 Payment methods

Given Saudi Arabia's completely Islamic culture, some Saudi banks issue Islamic credit cards with no interest or late fees to meet Saudi people's Islamic rules (Alrajhibank.com.sa). However, Saudi people still prefer to pay by debit card as they feel that it is dangerous to provide their credit cards' information over the internet given the fact that the sites are not trustworthy and the risk that their information might be stolen by other parties (Aleid, Rogerson, & Fairweather, 2009; Alghamdi, Drew & Al-Ghaith, 2011). Paying online by debit card is limited to only a small number of virtual stores and therefore paying online is another barrier of online shopping in Saudi Arabia.

5.6 Absence of clear e-commerce regulations

In any system, rules and regulations are essential in order to ensure respect for the rights of all involved parties. The absence of clear regulations in this regard and the associated absence of fear punishment may result in fraud, which will in turn result in negative consequences for the whole system. In the online shopping environment, many transactions occur between the involved parties such as payments and delivery arrangements. These activities need clear regulations that have the ability to protect the rights of any party involved in online transactions. In Saudi Arabia, there is an absence of clear e-commerce statutes, legislation, and rules (Al-Solbi & Mayhew, 2005; Agamdi, 2008). Therefore, Saudi Arabia needs to prioritize development of clear e-commerce laws and regulations, so that all parties involved in online transactions are able to be free of the fear of violations of their rights during any engagements in such transactions (Albadr, 2003; Al-Solbi & Mayhew, 2005; Agamdi, 2008).

5.7 Technology adoption level in Saudi Arabia

Since online shopping is built on a technology infrastructure, this infrastructure is likely to play a role in the adoption of online shopping. There are different types of technology infrastructure that could be used to measure the level of technology adoption in a country. For example, computers per capita, internet user penetration, broadband penetration, and mobile phone penetration are primary indicators of the level of technology adoption in a country (Ho, Liang & Kauffman, 2011). However, for reasons of simplicity, in this context we are only looking at internet user penetration and at secure internet servers as measures of the level of technology adoption in Saudi Arabia, for more information about the

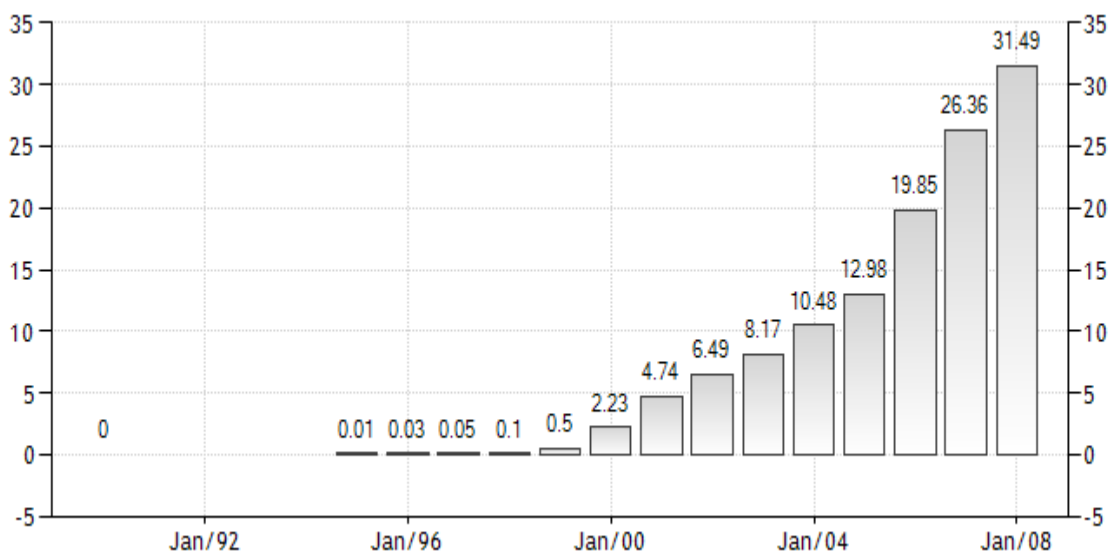
other indicators of technology adoption in Saudi Arabia please refer to tradingeconomics.com. The current number of internet users reflects the extent of the potential users of online shopping; in order to ensure that the information sent between a browser and a server is encrypted and secured during its transmission through the internet (especially if the information is related to credit card data or personal data), online stores, online banking and financial services, and other online service providers use secure servers (OECD, 2009). The global number of secure servers is constantly growing. It grew from just 20,000 in 1998 to more than 664,000 worldwide in 2008 (Ho, Liang & Kauffman, 2011). Meanwhile, internet users' numbers are also growing worldwide, including in Saudi Arabia. The table below compares the total number of internet users in a range of developed countries with the total number in a range of developing countries from 1990 to 2010.

Table 2: Comparison between the number of internet users in selected developed countries and developing countries

| <i>Developed Countries</i> | <i>1990</i> | <i>2005</i> | <i>2008</i> | <i>2010</i> |
|-----------------------------|-------------|-------------|-------------|-------------|
| Sweden | 6 | 267 | 805 | 907 |
| United Kingdom | 1 | 473 | 798 | 854 |
| Australia | 6 | 698 | 796 | 743 |
| South Korea | – | 684 | 773 | 848 |
| Switzerland | 6 | 498 | 758 | 799 |
| United States | 8 | 630 | 741 | 780 |
| Japan | – | 668 | 740 | 803 |
| Canada | 4 | 520 | 717 | 810 |
| France | 1 | 430 | 677 | 786 |
| Germany | 1 | 455 | 671 | 814 |
| Italy | – | 478 | 501 | 543 |
| Russia | 0 | 152 | 271 | 419 |
| <i>Developing Countries</i> | <i>1990</i> | <i>2005</i> | <i>2008</i> | <i>2010</i> |
| Colombia | 0 | 104 | 417 | 350 |
| Lebanon | 0 | 196 | 391 | 325 |
| China | 0 | 85 | 253 | 456 |
| Saudi Arabia | 0 | 70 | 251 | 390 |
| Egypt | 0 | 68 | 159 | 265 |
| Ecuador | 0 | 47 | 112 | 236 |
| Pakistan | 0 | 67 | 106 | 182 |
| India | 0 | 55 | 70 | 87 |
| Cuba | 0 | 17 | – | 152 |

Rates per 1000 persons, data are taken from <http://www.infoplease.com/ipa/A0883396.html>, The International Telecommunication Union (ITU).

Figure 6: Evolution of the number of internet users in Saudi Arabia from 1992 to 2008.



Source: <http://www.tradingeconomics.com/saudi-arabia/internet-users-per-100-people-wb-data.html>.

As for the penetration of secure servers in Saudi Arabia and around the world, the table below also compares the penetration of secure servers between a number of developed countries and a number of developing countries including Saudi Arabia.

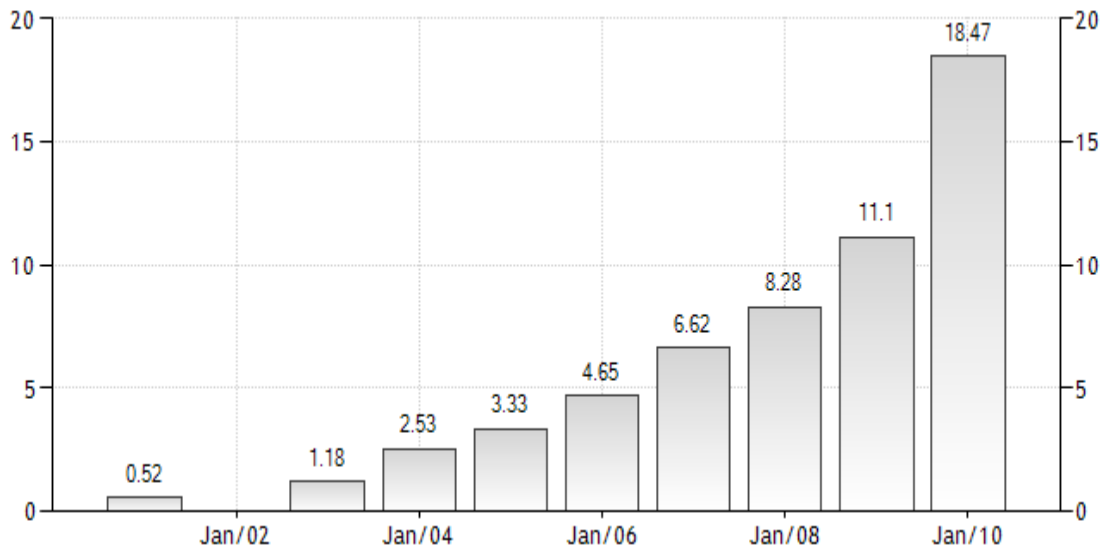
Table 3: Comparison between the penetration of secure servers in selected developed countries and developing countries

| <i>Developed Countries</i> | <i>1990</i> | <i>2005</i> | <i>2008</i> | <i>2010</i> |
|----------------------------|-------------|-------------|-------------|-------------|
| Sweden | 116.15 | 331.45 | 772.16 | 1266.22 |
| United Kingdom | 109.41 | 446.02 | 904.74 | 1395.71 |
| Australia | 176.27 | 598.07 | 990.54 | 1760.95 |
| South Korea | – | 20.03 | 695.7 | 1140.4 |
| Switzerland | 149.24 | 472.76 | 974.94 | 1876 |
| United States | 274.05 | 785.05 | 1174.92 | 1443.25 |
| Japan | 40.53 | 257.7 | 471.68 | 650.2 |
| Canada | 162.63 | 569.11 | 906.6 | 1236.56 |
| France | 27.72 | 78.95 | 171.06 | 306.18 |

| | | | | |
|-----------------------------|-------------|-------------|-------------|-------------|
| Germany | 62.62 | 274.16 | 549.79 | 873.5 |
| Italy | 18.27 | 44.21 | 92.79 | 154.19 |
| Russia | 1.95 | 2.43 | 7.33 | 20.35 |
| Developing Countries | 1990 | 2005 | 2008 | 2010 |
| Colombia | 1.76 | 4.44 | 10.49 | 14.32 |
| Lebanon | 4.96 | 8.33 | 12.88 | 28.44 |
| China | .14 | .33 | .93 | 1.92 |
| Saudi Arabia | .52 | 3.33 | 8.28 | 18.47 |
| Egypt | .15 | .51 | .99 | 2.2 |
| Ecuador | .88 | 4.13 | 10.09 | 15.32 |
| Pakistan | .04 | .3 | .54 | .97 |
| India | .12 | 55 | 1.28 | 2.22 |

Source: <http://www.tradingeconomics.com>

Figure 7: Secure internet servers (per 1 million people) in Saudi Arabia from 1990 to 2010



Source: <http://www.tradingeconomics.com/saudi-arabia/secure-internet-servers-per-1-million-people-wb-data.html>

We can conclude from the data set out above that Saudi Arabia has a high number of internet users and a high penetration of secure internet servers compared to the other developing countries. However, Saudi Arabia is far behind in comparison with the developed countries. Given the positive relationship between B2C e-commerce growth and the adoption of Internet-based selling technology in a country (Ho et al., 2011), it follows that Saudi Arabia's low level of technology adoption may play a role in its B2C e-commerce growth, including in its adoption of online shopping.

In conclusion, the inadequate availability of the internet and its high cost, the low development of postal systems, privacy issues, the absence of clear regulations and rules, and the lack of payment methods are all environmental and architectural factors that are working as barriers for the development of online shopping in Saudi Arabia. Yet, but key question remains. If all these environmental and architectural factors were to be fixed, would Saudi people then buy products online? In other words, people's attitudes may play a decisive role when considering the factors that affect the level of online buying in Saudi Arabia, especially given the fact that studies in the field of consumer behaviour indicate a strong correlation between attitudes and buying behaviour (Fishbein, 1980). Another proposition offered by Lutz (1991) indicates that, in order to predict an individual's buying behaviour, it is essential to measure the individual's attitude toward the way in which she/he performs the behaviour and not only her/his attitude toward the item purchased. Therefore, in the current research project, we decided to study people's attitude toward technologies to ascertain whether this has any impact on the adoption of online buying in Saudi Arabia. To our knowledge, no previous study has explored Saudi consumers' online buying behaviour from an attitudinal perspective.

III. Methodology and Hypothesis Development

In order to address the objectives of this research, hypotheses have been developed and these are presented in the first subset. After the hypotheses were developed, the methodology was defined for the purpose of testing the hypotheses.

1. Hypothesis development

Studies have shown that the typical adopter of a new technology is younger, has a high income, has a high level of education, and is a male (Rogers, 2003; Laukkanen & Pasanen, 2008; Chinn & Fairlie, 2004; Marchionni & Ritchie, 2007). As for gender and how it might differ with regard to the adoption of technology, studies about the relationship between gender and internet use show that males use the internet more than females (Chen & Wellman, 2004). Other studies examining the link between the use of online virtual stores and gender show that men buy more often and spend more money online than women (Li et al., 1999; Stafford et al., 2004). Studies have also shown that males are more likely to adopt new e-services than females. Similarly, males have shown less anxiety (Gilroy & Desai, 1986) and better skills in using computers than females (Harrison & Rainer, 1992). Furthermore, males have higher levels of enthusiasm for using new technologies (Tsikriktsis, 2004), and higher levels of self-confidence in using new technologies (Elliot & Hall, 2005). Therefore, in our research about Saudi people's attitudes toward technology and their adoption of online shopping, the following hypothesis is proposed:

Hypothesis 1: Males are more likely to score higher on the enablers of technology readiness (Optimism and Innovativeness) and lower on the inhibitors of technology readiness (Discomfort and Insecurity) than females.

In terms of age, the findings of Rogers (1995) and of Meuter et al. (2003) show that age is the most important demographic factor in explaining the adoption of self-service technologies. Given the fact that many old people have not experienced the use of technologies and have limited experience with technology (Joines et al., 2003) and given the fact that they tend to believe that they have a reduced ability to learn (Hertzog & Hultsch, 2000), it follows that they are more likely to have concerns and anxieties in learning how to use new technologies. Previous studies indicate a negative relationship between age and the adoption of technology (Joines et al., 2003), such as the study conducted by Bigne et al. (2005), which showed that young people are more likely to adopt M-commerce than older people. Moreover, Porter & Donthu (2006) found a negative relationship between age and perceived ease of using the internet. Therefore, the following hypothesis is proposed:

Hypothesis 2: Young people are more likely to score higher on the enablers of technology readiness (Optimism and Innovativeness) and lower on the inhibitors of technology readiness (Discomfort and Insecurity) than old people.

Technology adopters differ with regard to their level of education as early adopters tend to have a higher level of education (Rogers, 1995). This could be explained by their perceived ability to assimilate more knowledge than people with lower levels of education (Rogers, 1995). Additionally, less educated people reported a lower level of cognitive ability and insufficient knowledge as the main reasons underlying their choice not to use the internet (NTIA, 2002). Previous studies have shown a positive relationship between level of education and perceived ease of use of the internet (Porter & Donthu, 2006). Thus, the following hypothesis is proposed:

Hypothesis 3: More educated people are more likely to score higher on the enablers of technology readiness (Optimism and Innovativeness) and lower on the inhibitors of technology readiness (Discomfort and Insecurity) than low educated people.

The adoption of technological products requires financial investment; for example, a personal computer and internet access. According to Taglang (2000), people with lower income resist services that require continuing costs. Some studies have shown a positive relationship between level of income and the amount of money spent in using the technology of online shopping. Consumers who buy online are typically high income users and they purchase online more often and on a more regular basis than lower income users, the respective levels being 80% and 65% (Li et al., 1999). Therefore, the following hypothesis is proposed:

Hypothesis 4: High income people are more likely to score higher on the enablers of technology readiness (Optimism and Innovativeness) and lower on the inhibitors of technology readiness (Discomfort and Insecurity) than low income people.

With regard to the adoption of online buying, studies on the links between the use of online virtual stores and gender show that men buy more often and spend more money online than women (Li et al., 1999; Stafford et al., 2004; Susskind, 2004). In terms of age, some studies indicate a negative relationship between age and the adoption of online shopping (Joines et al., 2003). Other studies have shown a positive relationship between level of education and income on the one hand and the amount of money spent online on the other hand. Consumers who buy online are better educated than those internet users who do not, and high income users purchased online more and on a regular basis than low income users,

the respective levels being 80% and 65% (Li et al., 1999). As for the level of education, the higher the level of education, the more money that is spent on buying products or services online (Li et al., 1999; Liao & Cheung, 2001). Hence:

Hypothesis 5: Demographics (gender, age, level of education and level of income) are related to the adoption of online buying.

It has been found that attitudes toward technology are linked with technology-related behaviors (Cowles, 1989; Cowles & Crosby's, 1990). Eastlick (1996) has found that attitudes toward interactive shopping influence customers' tendency to adopt this type of shopping. Customers who are more likely to adopt self-service technologies are those who have a positive attitude toward technology and are more willing to adopt new technologies (Lin & Hsieh, 2006). Zeithaml et al. (2002) indicated that there is a positive relationship between Technology Readiness (TR) and the appreciation of self-service technologies. In addition, Yen (2005) found that people's degree of satisfaction with technology is associated with people's technology readiness. People with a more positive attitude toward technology are more likely to enjoy and be more satisfied with self-service technologies than people with lower technology readiness (Yen, 2005). Recently, studies have been conducted in search of the reasons underlying Saudi Arabia's lag in the adoption of online shopping. Reasons that have been discovered so far are mostly related to environmental or architectural barriers. This study will mainly explore whether there is any association between the lag in Saudi people's adoption of online buying on the one hand and their attitude toward internet technology on the other hand using the Technology Readiness Index (TRI) to measure Saudi people's attitude toward technology. The TRI is a scale developed by Parasuraman (2000)

that is used to understand customers' readiness to adopt and interact with technology (computer/internet-based technologies), and is based on four dimensions: Optimism, Innovativeness, Insecurity and Discomfort. Optimism and Innovativeness are enablers of technology readiness and they encourage people to adopt and use new technologies. Discomfort and Insecurity are inhibitors of technology readiness and they discourage people from adopting and using new technologies (Parasuraman, 2000). It was found that customers with different TR profiles have different internet-related behaviours (Parasuraman & Colby, 2001). Therefore, technology readiness plays an important role in the assessment of customers' adoption of online shopping. Additionally, Meuter et al. (2003) stated that people's anxiety toward their ability to use technological tools can predict their self-service technology usage more accurately than traditional demographics. Thus, the following hypotheses are proposed:

Hypothesis 6: Attitude toward technology (TRI) is related to the adoption of online buying.

Hypothesis 7: Attitude toward technology (TRI) is more important than demographics in explaining the adoption of online buying.

2. Methodology

2.1 Questionnaire

We designed a structured survey in order to collect data to test the hypotheses of this research study. The survey contains four parts with the following sections: questions on people's involvement with the use of technology-based products and services as well as actual and future buying behaviour for some types of products; questions on motivations to

buy online; questions on attitudes toward internet technology; and questions on demographics.

Section I consists of several questions related to people's actual buying behaviour and intentions to buy, the types of products that they intend to buy and their involvement with technology (adapted from Cho, Lee and Tharp, 2001), as well as a question related to people's motivations (hedonic and utilitarian) for buying online. The questions about motivations were provided by Childers et al. (2001) and only the items that were related to our study were used in the survey. Section II includes the TRI scale (see Appendix 1), adapted from Parasuraman (2000) and its four dimensions: Innovativeness, Optimism, Discomfort and Insecurity. Section III includes questions about the respondents' demographics and buying habits. The variables included were as follows: age, gender, income and level of education. A copy of the survey is provided in the Appendix. The survey was developed in English (see Appendix 5) and, as the most commonly used language in Saudi Arabia is Arabic, the survey was then translated into Arabic to ensure that the questionnaire would be fully understandable to all the potential respondents in Saudi Arabia (see Appendix 6). In order to ensure consistency in translation, the survey was translated by more than one professional translator and back translation was performed by two researchers. The English and the Arabic versions were compared and pre-tested on several Saudi people. Based on their comments and feedback, minor changes were made to ensure the clarity and understandability of the survey. Before the questionnaire was made available to the participants, it was again pre-tested on five Saudi people. These people were asked to explain what they understood while they were reading the sentences in the survey in order to ensure that the sentences were understood in the intended manner. After that, they

were asked to measure the clarity of the instrument, and accordingly, the survey was finalized. The pre-testing also allowed us to determine how long it takes to fill in the survey.

2.2 Data collection

The survey was mainly distributed using hard copies in order to make sure that people who are more or less not engaging in any internet transactions were included in the sample along with internet users. A copy of both the Arabic and the English versions was sent to primary contacts in Saudi Arabia. Participants were reached by means of a snowball sampling method. The distribution process started by giving 130 paper-based surveys to a number of university students, employees at a local hospital and friends in Saudi Arabia, and each one of them gave surveys to another person, whom he/she could conveniently reach; there were 71 responses from the 130 that received the paper-based surveys. In order to complete the data collection, an online version of the survey was created and 150 online-based surveys were distributed using electronic mail and social networking; the aim was to reach Saudi people who are engaging in online transactions and are potentially shopping online. There were 97 responses from the 150 individuals who received the online version of the survey. This study was conducted to reach Saudi individuals who: are female and male, are highly and lowly educated, have high and low income, have any attitude toward technology, and are engaging or not engaging in online shopping. A total of 280 surveys were distributed using online and paper-based versions; 168 responses were collected, but 155 of them were useable for data analysis. Moreover, outliers who had above-average, out of the ordinary degrees and older participants were omitted, which led us to have a total of 151 questionnaires that were used for data analysis.

IV. Data Analysis and Results

1. Data Analysis

The data analysis in this study was divided into two phases. Phase I involved describing the sample profile and the data collected. Phase II involved preparing the data for analysis.

Phase 1: Sample and data description

In this section, the sample of the research will be described. Data collected will also be described; followed by the processes of preparing the data for further analysis.

1.1.1 Respondents' general profile

We had a total of 151 participants in our study. The sample included more Online Buyers (62.3%) than Non-Online Buyers (37.7 %) (see Table 4). The ages of the respondents ranged from 18 to 55 but were more biased toward the younger generation between ages 18 and 35 years old. The distribution of males and females was quite close (42.4 % males to 57.6% females). Most of respondents had an undergraduate degree, and had a monthly income of 1000 to 10,000 SR (1 CAD= 3. 75 SAR). The distribution of the sample is shown in Table 5:

Table 4: Number of Online and Non-Online Buyers in the sample

| Type of respondent | Frequency | Percentage |
|--------------------|-----------|------------|
| Online Buyers | 94 | 62.3% |
| Non-Online Buyers | 57 | 37.7% |

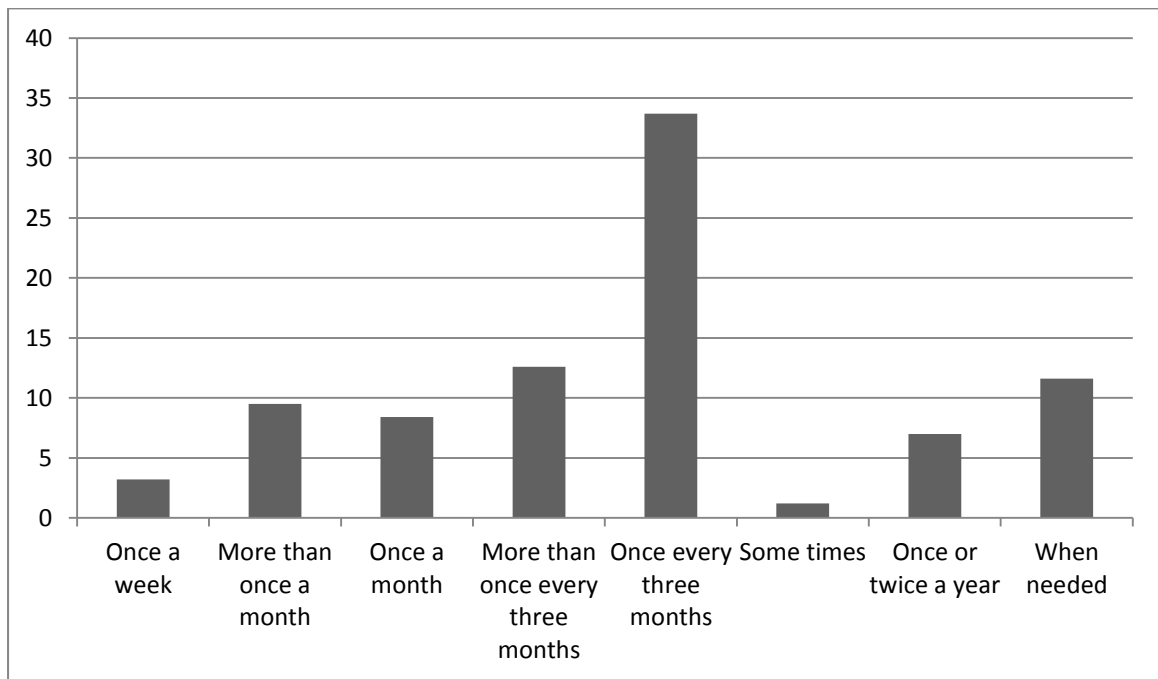
Table 5: Sample profile

| | Total Sample/n= 151 | | Online Buyers/n= 94 | | Non-Online Buyers/n= 57 | |
|-------------------------|--------------------------------|------------|----------------------------|------------|------------------------------------|------------|
| | Frequency | Percentage | Frequency | Percentage | Frequency | Percentage |
| <i>Gender</i> | | | | | | |
| Male | 64 | 42.4 | 42 | 44.7 | 22 | 38.6 |
| Female | 87 | 57.6 | 52 | 55.3 | 35 | 61.4 |
| Total | 151 | 100% | 94 | 100% | 57 | 100% |
| <i>Age</i> | | | | | | |
| 18 to 24 | 33 | 21.9 | 18 | 19.1 | 15 | 26.3 |
| 25 to 35 | 83 | 55 | 60 | 63.8 | 23 | 40.4 |
| 36 to 45 | 27 | 17.9 | 15 | 16 | 12 | 21.1 |
| 46 to 55 | 8 | 5.3 | 1 | 1 | 7 | 12.3 |
| Total | 151 | 100% | 94 | 100% | 57 | 100% |
| <i>Education</i> | | | | | | |
| High school | 31 | 20.5 | 11 | 11.7 | 20 | 35.1 |
| College | 18 | 12 | 10 | 10.6 | 8 | 14 |
| Undergraduate | 72 | 47.7 | 45 | 47.9 | 27 | 47.4 |
| Graduate | 30 | 19.9 | 28 | 29.8 | 2 | 3.5 |
| Total | 151 | 100% | 94 | 100% | 57 | 100% |
| <i>Income (SR)</i> | | | | | | |
| 1000 to 10,000 | 81 | 53.6 | 45 | 47.9 | 36 | 63.2 |
| 10,000 to 20,000 | 57 | 37.7 | 37 | 39.4 | 20 | 35.1 |
| 20,000 to 30,000 | 13 | 8.6 | 12 | 12.8 | 1 | 1.8 |
| Total | 151 | 100% | 94 | 100% | 57 | 100% |

1.1.2 Data description

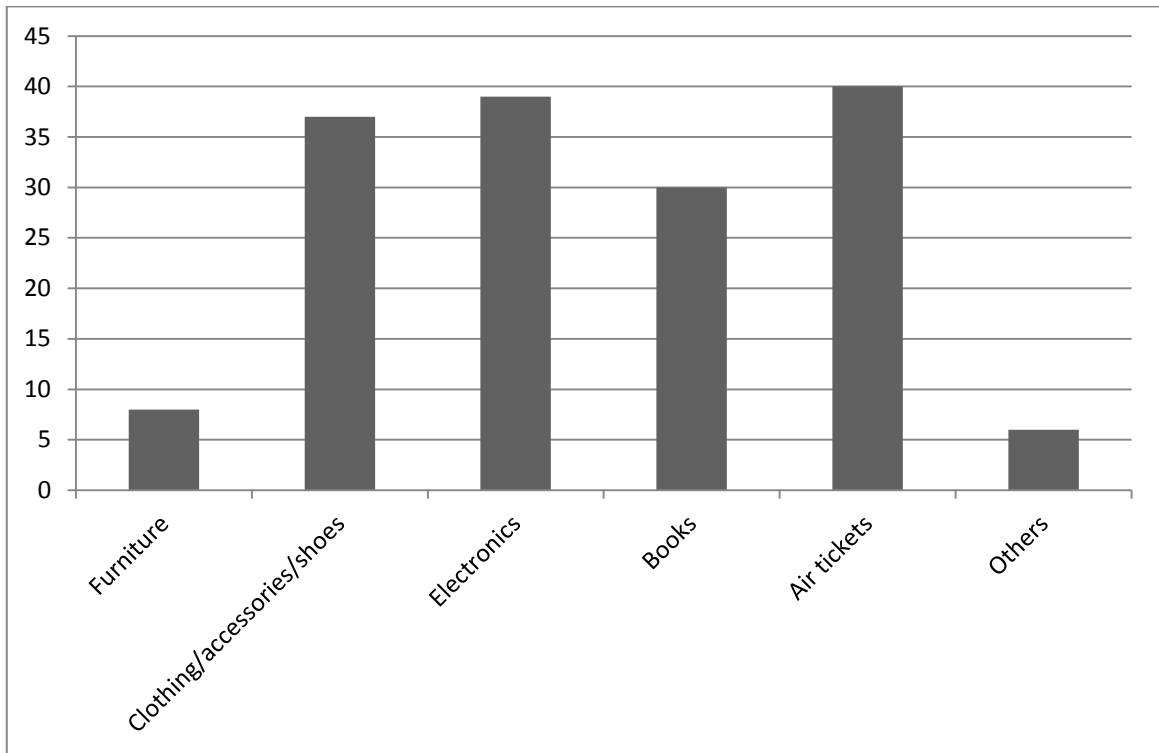
In addition to the basic descriptive information, a series of questions were asked to explore the following issues pertaining to the participants' current usage of online buying: the frequency with which Online Buyers buy online; the products that they buy most frequently; the shopping habits of Online Buyers and Non-Online Buyers. Among the Online Buyers, a small minority (3%) indicated buying online once per week, around 9% indicated buying online more than once per month, around 8% indicated buying online once a month, 13% buy online more than once every three months, and the majority indicated buying online once every three months (around 33%). A total of approximately 32% of online buyers indicated that they typically buy online at other times such as when they have a need to do so and once or twice each year (see Figure 8).

Figure 8: The frequencies with which respondents buy online.



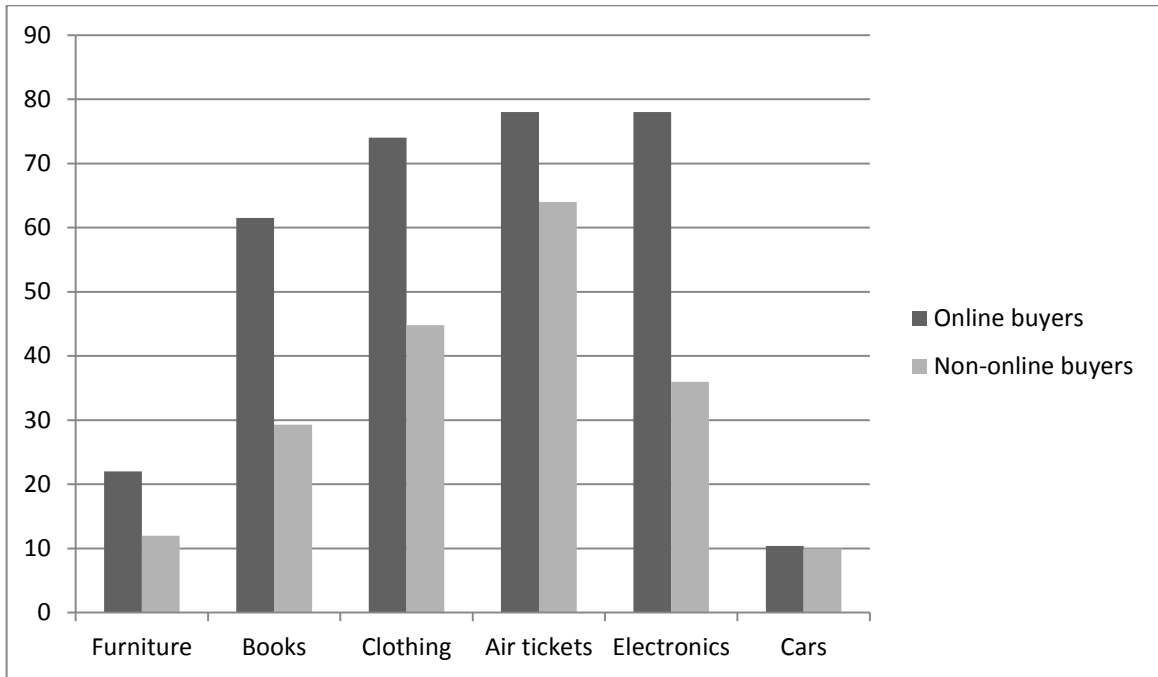
With regard to the products that they buy online, a minority of online buyers (around 8%), reported buying furniture online, whereas the majority indicated buying airline tickets and electronics, 40% and 39% respectively. In addition, 30% indicated buying books and 37% reported buying clothing/accessories and shoes. A total of approximately 6% buy other products and services such as auto parts, home supplies, kids' supplies and perfumes as well as make reservations through the internet (see Figure 9).

Figure 9: Products and services bought online



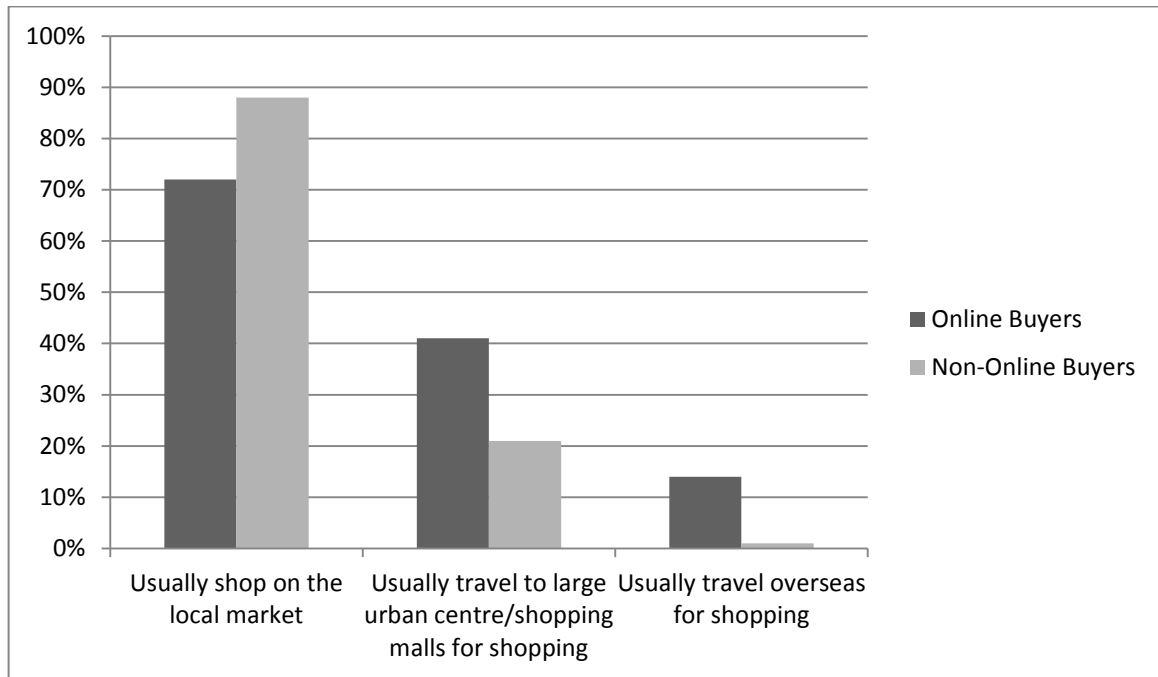
In terms of the respondents' intentions to buy online, of all the online buyers surveyed, nearly 22% indicated the intention to buy furniture in the future. Furthermore, 61.5% reported an intention to buy books and 74% indicated intention to buy clothes. The intentions to buy airline tickets and electronics were for both high and were tied at 78%. Other than these categories of products, at minority (10.4%) indicated an intention to buy cars. On the other hand, 12% of non-online buyers reported an intention to buy furniture. The intention to buy books in the future was at 29.3%. The intention to buy clothes was at 44.8%. The majority, almost 64%, reported the intention to buy airline tickets. In addition, 36% reported having the intention to buy electronics in the future. Finally, only 10% of non-online buyers indicated an intention to buy a car (see Figure 10). We have to keep in mind that these intentions are stated as future behaviour that would very likely translate into lower percentages of real purchases.

Figure 10: Online buyers and Non-Online buyers intentions to purchase products in the future



As for the respondents' shopping habits, on the one hand, 88% of non-online buyers usually shop in the local market; 21% usually travel to large urban shopping centers for shopping, and only 1% usually travel overseas for shopping. On the other hand, 72% of online buyers shop in the local market very often, 41% travel to shop in urban centers and malls, and 14% travel overseas for shopping. We can therefore conclude that online buyers have a greater tendency to shop in urban centers and overseas than non-online buyers (see Figure 11).

Figure 11: Online buyers' and Non-Online buyers' shopping habits



Phase 2: Assessment of reliability and validity

A total of 168 responses was collected. The data were imported into SPSS for analysis. The data of each respondent were reviewed in order to make sure that they were complete. Participants who failed to fill in more than half of the survey were excluded, and for this reason so 13 respondents were excluded; in addition, 4 outliers were also omitted. This deletion reduced the sample from 168 respondents to 151 respondents.

1.2.1: Factor analysis and Cronbach's Alpha

We first ran an exploratory factor analysis and used Cronbach's Alpha to check the scales' internal consistency. Exploratory factor analysis was used to explore the factors responsible for responses. Exploratory factor analysis examines correlations between items. Items that are highly correlated are influenced by the same factors, whereas items that are

uncorrelated are influenced by different factors. The factor loadings were acceptable at above 0.4 (Stevens, 2002). Therefore, all items that had a low factor loading (<0.4) were deleted. All of the remaining items had factor loadings that ranged from 0.636 to 0.925. Cronbach's Alpha was examined as well and a score of above 0.7 was considered acceptable (Gliem & Gliem, 2003). The results for the Cronbach's Alpha test showed that the deletion of some items would significantly increase the scores, and therefore they were deleted. The final Cronbach's Alpha scores ranged from 0.765 to 0.887. The tables below summarize the scores for each of the remaining items that were used in the analysis.

Table 6: Internal consistency for the involvement scale.

| Involvement scale | Factor loadings |
|---|------------------------|
| I am interested in technology on general. | .850 |
| Technology is important to me. | .873 |
| I get involved with what technology I use. | .784 |
| Technology is relevant to my life. | .796 |
| Variance explained | 63.31% |
| Alpha coefficient | .845 |

Table 7: Internal consistency for the motivations scale:

| Motivations scale | Factor loadings |
|---|------------------------|
| <i>Utilitarian motivations</i> | |
| Online shopping improves my shopping productivity | .868 |
| Online shopping enhances my effectiveness in shopping | .907 |
| Online shopping improves my shopping ability | .877 |
| Online shopping is clear and understandable | .739 |
| Variance explained | 72.25% |
| Alpha coefficient | .869 |
| <i>Hedonic motivations</i> | |
| Online shopping is fun on its own sake | .847 |
| Online shopping makes me feel good | .783 |
| Online shopping is exciting | .912 |
| Online shopping is enjoyable | .925 |
| Variance explained | 75.46% |
| Alpha coefficient | .887 |
| Overall Alpha coefficient for motivations | .904 |

Table 8: Internal consistency for the TRI

| TRI | Factor loadings |
|--|------------------------|
| <i>Optimism</i> | |
| Products and services that use the newest technologies are much more convenient to use. | .676 |
| You prefer to use the most advanced technology available. | .793 |
| You like computer programs that allow you to tailor things to fit your own needs. | .714 |
| Technology makes you more efficient in your occupation. | .750 |
| You find new technologies to be mentally stimulating. | .675 |
| You find you are doing more things now with advanced technology than a couple of years ago. | .678 |
| Variance explained | 51.22% |
| Alpha coefficient | .808 |
| <i>Innovativeness</i> | |
| Other people come to you for advice on new technologies. | .844 |
| In general, you are among the first in your circle of friends to acquire new technology when it appears. | .798 |
| You can usually figure out new high-tech products and services without help from others. | .800 |
| You find you have fewer problems than other people in making technology work for you | .664 |
| Variance explained | 60.75% |
| Alpha coefficient | .782 |
| <i>Discomfort</i> | |
| When you get technical support from a provider of a high-tech product or service, you sometimes feel as if you are being taken advantage of by someone who knows more than you do. | .664 |
| New technology is often too complicated to be useful. | .801 |
| You get overwhelmed with how much you need to know to use the latest technology. | .759 |
| With new technology, you too often risk paying a lot of money for something that is not worth much. | .674 |

| | |
|---|--------|
| Variance explained | 52.77% |
| Alpha coefficient | .699 |
| <i>Insecurity</i> | |
| You do not consider it safe giving out a credit card number over a computer. | .665 |
| You do not consider it safe to do any kind of financial business online. | .806 |
| You worry that information you send over the internet will be seen by other people. | .727 |
| You do not feel confident doing business with a place that can only be reached online. | .787 |
| Any business transaction you do electronically should be confirmed later with something in writing. | .668 |
| Whenever something gets automated, you need to check carefully that the machine or computer is not making mistakes | .636 |
| Variance explained | 51.50% |
| Alpha coefficient | .809 |
| Overall Alpha coefficient for TRI | .765 |

1.2.2 Means' calculations

In order to examine the relationship between the variables in this study, the mean scores for all the factors have to be calculated. Means scores of all the variables are presented in Tables 9 to 11. As for the mean scores for the dimensions of the Technology Readiness Index (see Table 9), we see that people scored above average (on a scale of 1 to 5) on both of the enablers of Technology Readiness (Optimism and Innovativeness), but that they scored higher on the Optimism dimension than on the Innovativeness dimension. As for the inhibitors of Technology Readiness (Discomfort and Insecurity), people also scored above average on the Discomfort dimension, but they scored higher on the Insecurity dimension. People scored slightly higher on the Hedonic motivations than on the Utilitarian motivation (see Table 10). People showed a high level of involvement, which means that they are highly involved with technology overall (see Table 11).

Table 9: Mean scores for each dimension of the Technology Readiness Scale

| | Mean | Standard Deviation |
|-----------------------|-------------|---------------------------|
| Optimism | 4 | .61 |
| Innovativeness | 3.4 | .80 |
| Discomfort | 3.3 | .78 |
| Insecurity | 3.6 | .75 |
| Overall TRI | 3.6 | .73 |

Table 10: Mean scores for the two dimensions of motivation

| | Mean | Standard Deviation |
|--------------------------------|-------------|---------------------------|
| Utilitarian motivations | 3.3 | .87 |
| Hedonic motivations | 3.4 | .88 |
| Overall mean | 3.4 | .88 |

Table 11: Mean score for involvement

| | Mean | Standard Deviation |
|--------------------|-------------|---------------------------|
| Involvement | 4.2 | .70 |

2. Hypotheses testing

In order to test hypothesis numbers 1, 2, 3 and 4, t-test and One-way ANOVA techniques were run to compare the means and to ascertain if there are any significant differences between each of the demographics included (gender, age, level of education, and level of income) in terms of attitude toward technology (on a scale of 1 to 5).

2.1 Gender versus attitude toward technology (H1):

Table 12: T-test for gender and attitude toward technology

| | Mean Scores | | T-test significance |
|-----------------------|----------------|------------------|------------------------|
| | Male (n=64) | Female (n=87) | |
| Optimism | 4.1 | 3.8 | .001** |
| Innovativeness | 3.6 | 3.2 | .003** |
| Discomfort | 3.3 | 3.3 | .833 |
| Insecurity | 3.5 | 3.7 | .094 |

** Significant at <.01; * Significant at < .05

The results show that males and females have significantly different attitudes in terms of the enablers of technology readiness (Optimism and Innovativeness). Although both of the genders scored high in terms of Optimism and Innovativeness, Saudi males scored higher than females and therefore they are more optimistic and innovative toward technology than Saudi females. However, the results show no significant difference in terms of the inhibitors of technology readiness (Discomfort and Insecurity). Both males and females scored above average on Discomfort, which indicates that males and females still have a feeling of discomfort in dealing with technology. However, in comparison with Insecurity, Saudi males and females have a higher level of Insecurity than they have of Discomfort. In conclusion, there is a partial support for Hypothesis 1: Males are more likely to score higher in the enablers

of technology readiness (Optimism and Innovativeness) and lower in the inhibitors of technology readiness (Discomfort and Insecurity) than females.

2.2 Age versus attitude toward technology (H2)

Table 13: ANOVA for age and attitude toward technology

| | Mean Scores | | | | Significance |
|-----------------------|-----------------|-----------------|-----------------|----------------|--------------|
| | 18-24 (n=33) | 25-35 (n=83) | 36-45 (n=27) | 46-55 (n=8) | |
| Optimism | 3.9 | 4 | 3.9 | 3.7 | .178 |
| Innovativeness | 3.4 | 3.5 | 3.2 | 3 | .207 |
| Discomfort | 3.3 | 3.4 | 3.1 | 3.4 | .180 |
| Insecurity | 3.7 | 3.5 | 3.6 | 3.9 | .225 |

*Significant at <.05

The results of the means comparisons show overall no significant differences between young Saudi people and old Saudi people in terms of their attitude toward technology (significant at <0.05). However, all groups scored above average in all of the dimensions of the TRI. The absence of significant differences between the five groups in terms of attitude toward technology could be explained by the fact that most of the respondents were young people between the ages of 18 to 35 (53.3%), which means that there was no much variance in the sample. This leads us to find that the evidence does not support Hypothesis 2: Young people are more likely to score higher in the enablers of technology readiness (Optimism and Innovativeness) and lower in the inhibitors of technology readiness (Discomfort and Insecurity) than old people.

2.3 Level of education versus attitude toward technology (H3)

Table 14: ANOVA for level of education and attitude toward technology

| | Mean Scores | | | | Significance |
|-----------------------|-----------------------|-------------------|-------------------------|--------------------|--------------|
| | High school (n=31) | College (n=18) | Undergraduate (n=72) | Graduate (n=30) | |
| Optimism | 3.7 | 3.9 | 4 | 4.2 | .016* |
| Innovativeness | 3.1 | 3.5 | 3.4 | 3.5 | .351 |
| Discomfort | 3.2 | 3.2 | 3.4 | 3 | .172 |
| Insecurity | 3.7 | 3.4 | 3.6 | 3.4 | .143 |

*Significant at $<.05$

As for testing Hypothesis 3, which concerns the links between level of education and attitude toward technology, the results show no significant difference in all of the TR dimensions with the exception of one of the enablers (Optimism). Saudi people who hold a graduate degree have a higher level of Optimism toward technology than people who have lower levels of education. Even though all of the groups showed no significant differences in the other three dimensions (Innovativeness, Discomfort and Insecurity), we can see that all groups scored above average on both of the enablers of technology readiness (on a scale of 1 to 5) with higher levels of Optimism than Innovativeness. In terms of the inhibitors of technology readiness (Discomfort and Insecurity), all groups scored above average in both of the inhibitors (Discomfort and Insecurity). To recapitulate, the results showed a significant correlation between one of the enablers of technology readiness (Optimism) and level of education, but the results showed no significant correlation between Innovativeness and level of education, nor between the inhibitors of technology readiness and level of education. These results lead us to find that there is a partial support for Hypothesis 3: More educated people are more likely to score higher in the enablers of technology readiness (Optimism and

Innovativeness) and lower in the inhibitors of technology readiness (Discomfort and Insecurity) than low educated people.

2.4 Level of income versus attitude toward technology (H4)

Table 15: ANOVA for level of income versus attitude toward technology

| | Mean Scores | | | Significance |
|-----------------------|-----------------------|-------------------------|-------------------------|--------------|
| | 1000-10,000 (n=81) | 10,000-20,000 (n=57) | 20,000-30,000 (n=13) | |
| Optimism | 3.9 | 4.1 | 4.1 | .110 |
| Innovativeness | 3.3 | 3.6 | 3.2 | .116 |
| Discomfort | 3.4 | 3.2 | 3 | .363 |
| Insecurity | 3.6 | 3.6 | 3.5 | .933 |

*Significant at <.05

As for Hypothesis 4, the results show no significant differences between all groups in terms of the relationship between income and attitude toward technology. However, all groups scored above average (on a scale of 1 to 5) in the enablers of the TRI. This means that people with different levels of income all have similarly high levels in terms of the enablers of technology readiness (Optimism and Innovativeness toward technology), which would encourage them to adopt technology. In terms of the inhibitors of the TRI, all groups also scored above average in both of the inhibitors (Discomfort and Insecurity). To sum up, the results show no significant correlation between income and attitude toward technology. Nevertheless, the apparent absence of significant differences could be explained by the fact that the majority of the respondents had an income of 1000 to 10,000 SR (52, 3%), which results in very little variance in the sample. Therefore, the results did not support Hypothesis 4: High income people are more likely to score higher on the enablers of technology readiness (Optimism and Innovativeness) and lower on the inhibitors of technology readiness (Discomfort and Insecurity) than low income people.

In conclusion, t-test and One-way ANOVA techniques were run to compare the means and to find if there are any significant differences between each of the demographics included in this study (gender, age, level of education, and level of income) in terms of attitude toward technology (on a scale of 1 to 5). The results revealed a partial correlation between gender and level of education in terms of attitude toward technology, but the results did not reveal any correlation between age and income in terms of attitude toward technology. The results were guided by sample characteristics.

2.5 Regression Analysis

Regression analysis is used to predict a dependent variable by using one or more independent variables (DeCoster, 2007). The dependent variable in our research is “the adoption of online buying in Saudi Arabia”, and the independent variables are “attitude toward technology” and “demographics”. The “buying online” variable and “frequency of buying online” variable were combined into a single dependent variable called “SUMBUY” in order to include all the categories from not buying online to buying online once a week within one variable (see Appendix 5 for survey). A multiple regression analysis was conducted in order to test Hypotheses number 5, 6 and 7. As for Hypothesis 5 that Demographics (gender, age, level of education and level of income) are related to the adoption of online buying, the table below shows the results of the multiple regression analysis of demographics on adoption of online buying (see Appendix 7).

Table 16: Multiple regression analysis of the dependent variable (SUBMUY) and the independent variables (demographics)

| R Square | .076 | |
|------------------|----------------------------------|---------------------|
| | Coefficients of Variables | Significance |
| Gender | -.065 | .440 |
| Age | -.162 | .066 |
| Education | .212 | .011* |
| Income | .051 | .577 |

** Significant at <0.01; *Significant at < 0.05

The regression showed that the demographics included in this study explain 7.6% (R Square = .076) of the variance of the dependent variable (SUMBUY). The regression analysis showed that some scores are statistically significant and others are not. Of the demographics, the results indicate one of the demographics to be significantly related to the adoption of online buying in Saudi Arabia (significant at <0.05). First, gender was found to be not significantly related. Age was also not significantly related and the coefficient is (-0.162) Education was found to be the most significantly demographic related to the adoption of online buying in Saudi Arabia. The coefficient is (0.212) which indicates a positive relationship between education and the adoption of online buying; the higher the level of education, the higher the level of adoption of online buying. Finally, income was found to be not significantly related to the adoption of online buying. These results lead us to state that Hypothesis 5 is only partially supported.

In order to test Hypothesis 6 that is Attitude toward technology (TRI) is related to the adoption of online buying, a multiple regression analysis was run (see Appendix 7). The following table shows the results of the regression of attitude on adoption of online buying.

Table 17: Multiple regression analysis of the dependent variable (SUBMUY) and the independent variables (attitude).

| R Square | .198 | |
|-----------------------|----------------------------------|---------------------|
| | Coefficients of Variables | Significance |
| Optimism | .097 | .445 |
| Innovativeness | .327 | .000** |
| Discomfort | -.151 | .054 |
| Insecurity | -.171 | .031* |

**Significant at <0.01 ; *Significant at < 0.05

The regression showed that the independent variables (attitude dimensions) explain 19.8% (R Square = 0.198) of the variance of the dependent variable (SUMBUY). The regression analysis showed that some scores are statistically significant and that others are not. The results indicate that two of the dimensions are significantly related to the adoption of online buying in Saudi Arabia (significant at <0.01: Innovativeness, significant at <0.05: Insecurity), and that one dimension is only marginally significant (Discomfort). First, Innovativeness was found to be the most statistically significant dimension affecting the adoption of online buying in Saudi Arabia with a coefficient of (0.327), which indicates a positive relationship between Innovativeness and the adoption of online buying in Saudi Arabia. With a coefficient of (-0.171), Insecurity indicates a negative relationship between Insecurity and the adoption of online buying in Saudi Arabia. Discomfort also was only marginally significant with a coefficient of (-0.151), which also indicates a negative relationship between Discomfort and the adoption of online buying in Saudi Arabia. Therefore, the results of the regression analysis partially support hypothesis number 6.

In order to test Hypothesis 7 that attitude toward technology (TRI) is more important than demographics variables in explaining online buying adoption in Saudi Arabia, a multiple regression analysis was ran. Dimensions of the TRI were entered in one block, and

demographic variables were entered in a second block (see Appendix 7). The table below shows the results of the multiple regression analysis used to test this hypothesis.

Table 18: Multiple regression analysis of the dependent variable (SUBMUY) and the independent variables (attitude toward technology and demographics).

| R Square | .234 | |
|-----------------------|----------------------------------|---------------------|
| | Coefficients of Variables | Significance |
| Optimism | .077 | .393 |
| Innovativeness | .320 | .000** |
| Discomfort | -.167 | .036* |
| Insecurity | -.171 | .036* |
| Gender | .066 | .422 |
| Age | -.065 | .439 |
| Education | .154 | .054 |
| Income | .010 | .905 |

**Significant at <0.01

*Significant at < 0.05

The multiple regression showed that the independent variables (attitude and demographics) explain 23.4% (R Square = 0.234) of the variance in the dependent variable (SUBMUY). Of the TRI dimensions, the results indicate three of the attitude dimensions to be significantly related to the adoption of online buying in Saudi Arabia (significant at <0.01: Innovativeness, significant at <0.05: Discomfort and Insecurity). On the other hand, of the demographics variables, none of the demographics involved in this study was significantly related to the adoption of online buying in Saudi Arabia. However, although Education was not significant, it was only to a marginal extent. Its coefficient is positive (0.154), which indicates a positive relationship between the level of education and the adoption of online buying in Saudi Arabia. According to the results, attitude toward technology (through Innovativeness, Discomfort and Insecurity) has more impact than demographics on the adoption of online buying in Saudi Arabia. Therefore, Hypothesis 7 is supported in this study.

Multiple regression analysis was also run in order to ascertain the relationship between attitude toward technology and demographics on both the types of products that people are currently buying online and the types of products that they intend to buy in the future. The table below shows the results of the analysis.

Table 19: Multiple regression analysis of the dependent variables (Products bought online/Products intended to be bought online) and the independent variables (TRI and Demographics).

| | Furniture | | Clothing | | Electronics | | Books | | Air tickets | |
|---------------------|------------------|-----------|-----------------|-----------|--------------------|-----------|--------------|-----------|--------------------|-----------|
| | Buying | Intention | Buying | Intention | Buying | Intention | Buying | Intention | Buying | Intention |
| TRI | | | | | | | | | | |
| Optimism | .078 | .125 | .128 | .216* | -.012 | .102 | -.004 | .059 | -.016 | .120 |
| Innovativeness | .207* | .143 | .144 | -.006 | .220* | .212** | .283** | .095 | .236** | .034 |
| Discomfort | .058 | .002 | .027 | -.008 | .061 | -.055 | .064 | -.083 | .022 | -.019 |
| Insecurity | -.132 | -.105 | -.225** | -.246** | -.218** | -.235** | -.020 | -.112 | -.081 | -.042 |
| Demographics | | | | | | | | | | |
| Gender | .184* | .183* | .319** | .247** | -.220** | -.083 | .045 | -.065 | -.103 | -.103 |
| Age | .006 | -.089 | -.016 | .027 | -.067 | -.085 | .084 | -.006 | .020 | -.014 |
| Education | .044 | -.048 | .060 | .009 | .260** | .105 | .307** | .234** | .333** | .103 |
| Income | .132 | .078 | .041 | .034 | .107 | .078 | -.010 | -.100 | .009 | .024 |
| Total R Square | .115 | .087 | .170 | .117 | .329 | .214 | .197 | .114 | .227 | .064 |

* Significant at < 0.05

** Significant at < 0.01

The multiple regression analysis showed that the independent variables (Attitude and Demographics) explain 11.5% (R Square = 0.115) of the variance in buying furniture online. Of the TRI dimensions, the results indicate Innovativeness to be significantly related to buying furniture online with a coefficient of (0.207), which means that there is a positive relationship between Innovativeness and buying furniture online; the higher the level of

Innovativeness, the higher the level of buying furniture online. Of the demographics, gender was significantly related to buying furniture online with a coefficient of (.184). Given the fact that males were coded “0” and females were coded “1” in coding the data in SPSS, the positive coefficient indicates that females buy furniture more than males. Gender was also the only demographic factor that was significantly related to the intention to buy furniture online with a coefficient of (0.183).

As for clothing, attitude and demographics explain 17% (R square= 0.170) of buying clothes online. Insecurity was significantly related with a coefficient of (-0.225). This indicates that the lower the level of insecurity, the higher the level of buying clothes online. Gender also was significant with a coefficient of (0.319), which means that women buy clothes online more than men. Optimism was significantly related to the intention to buy clothes online with a coefficient of (0.216), which indicates a positive relationship between the two variables. In a manner similar to buying clothes online, Insecurity and Gender were also significantly related to the intention to buy clothes online with coefficients of (-0.246) and (0.247), respectively.

Attitude and demographics explain almost 33% (R square= 0.329) of the variance in buying electronics online. Of the attitude, Innovativeness was positively related with a coefficient of (0.220), and Insecurity was negatively related with a coefficient of (-0.218). Of the demographics, gender was negatively significant (-0.220), which means that males buy electronics more than females. Also, Education was significant with a coefficient of (0.260), which means that the higher the level of education, the higher the level of buying electronics online. With R square of (0.214), Innovativeness and Insecurity were the only factors significantly related to the intention to buy electronics online with coefficients of (0.212) and (-0.235), respectively.

As for buying books online, attitude and demographics explain almost 20% of the variance in buying books online ($R^2 = 0.197$) with Innovativeness being the most significantly related factor of the TRI. Its coefficient was (0.283), which indicates a positive relationship between the two variables. Not surprisingly, Education was the most significantly related factor for the variables “Buying books currently” and “Intention to buy books online”, and this was positively related to both of the dependent variables with coefficients of (0.307) and (0.234), respectively.

Similar to buying books online, Innovativeness and Education were the most significantly related factors to buying airline tickets online. Innovativeness and Education were both positively related to buying airline tickets online with coefficients of (0.236) and (0.333), respectively.

2.6 Comparing respondents to the online survey versus respondents to the paper survey

As mentioned in the methodology section, data were collected through paper copies as well as through online copies. Given the fact that respondents using the internet might be more knowledgeable about internet practices, and might have developed habits of online shopping and buying, we considered that it was relevant to determine whether belonging to one or the other group of respondents would have a significant impact on Saudi’s online buying. Therefore, this last part of the data analysis was run in order to ascertain if there were any significant differences between the people who responded to the online version of the survey and the people who responded to the paper version of the survey in terms of the impact of their demographics characteristics and their attitudes toward technology on online buying. The table below summarizes the characteristics of the two groups:

Table 20: Characteristics of online respondents and paper respondents

| | Online respondents/n= 84 | | Paper respondents/n= 71 | |
|-------------------------|---------------------------------|------------|--------------------------------|------------|
| | Frequency | Percentage | Frequency | Percentage |
| <i>Gender</i> | | | | |
| Male | 46 | 42.9 | 31 | 43.7 |
| Female | 38 | 57.1 | 40 | 56.3 |
| Total | 84 | 100% | 71 | 100% |
| <i>Age</i> | | | | |
| 18 to 24 | 22 | 26.2 | 12 | 17.4 |
| 25 to 35 | 51 | 60.7 | 32 | 46.4 |
| 36 to 45 | 9 | 10.7 | 18 | 26.1 |
| 46 to 55 | 2 | 2.4 | 7 | 10.1 |
| Total | 84 | 100% | 69 | 100% |
| <i>Education</i> | | | | |
| High school | 12 | 14.3 | 20 | 28.2 |
| College | 8 | 9.5 | 11 | 15.5 |
| Undergraduate | 40 | 47.6 | 34 | 47.9 |
| Graduate | 24 | 28.6 | 6 | 8.5 |
| Total | 84 | 100% | 71 | 100% |
| <i>Income (SR)</i> | | | | |
| 1000 to 10,000 | 43 | 51.8 | 37 | 53.6 |
| 10,000 to 20,000 | 29 | 34.9 | 29 | 42 |
| 20,000 to 30,000 | 11 | 13.3 | 3 | 4.3 |
| Total | 83 | 100% | 69 | 100% |

In order to compare online respondents and paper respondents, a dummy variable was created (named “Datacoll”, with a coding of “0” for paper respondents and a coding of “1” for online respondents). In a manner similar to the previous regression analysis conducted on the whole sample of respondents, we ran regression analysis for the hypotheses 5, 6, and 7 in order to uncover whether belonging to one of the two groups would significantly impact online buying. As for the differences between the two groups in terms of their demographics and their impact on online buying, the table below shows the results of the regression analysis.

Table 21: Differences between paper respondents and online respondents in terms of their demographics

| R Square | .092 | |
|------------------|----------------------------------|---------------------|
| | Coefficients of Variables | Significance |
| Gender | -.060 | .472 |
| Age | -.126 | .066 |
| Education | .179 | .037* |
| Income | .034 | .715 |
| Datacoll | .135 | .117 |

** Significant at <0.01; *Significant at < 0.05

The results of the analysis show that, overall, there is no significant difference between the online and paper respondents in terms of their demographics and their impact on online buying. However, results showed that Education has a significant impact on online buying with a coefficient of (0.179).

A regression analysis was also run to ascertain the differences between online and paper respondents in terms of the impact of their attitude toward technology on their online buying behaviour. The table below summarizes the results.

Table 22: Differences between paper respondents and online respondents in terms of their attitude toward technology

| R Square | .223 | |
|-----------------------|----------------------------------|---------------------|
| | Coefficients of Variables | Significance |
| Optimism | .083 | .328 |
| Innovativeness | .319 | .000** |
| Discomfort | -.119 | .130 |
| Insecurity | -.158 | .045* |
| Datacoll | .162 | .031* |

**Significant at <0.01 ; *Significant at < 0.05

The results show that overall online and paper respondents have significant differences in terms of their attitude toward technology and its impact on online buying with a coefficient of (0.162) at the 0.05 significance level. Innovativeness was found to be the most significant factor with a coefficient of (0.319), in other words, online respondents are

more innovative toward technology than paper respondents. This was followed by Insecurity (-0.158), which means that online respondents have a lower level of insecurity than paper respondents.

Finally, a regression analysis was run containing both sets of variables (demographics and the TRI) and the Datacoll variable. The table below summarizes the results of the analysis.

Table 23: Differences between paper respondents and online respondents in terms of their demographics and attitude toward technology

| R Square | .242 | |
|-----------------------|----------------------------------|---------------------|
| | Coefficients of Variables | Significance |
| Optimism | .074 | .416 |
| Innovativeness | .320 | .000** |
| Discomfort | -.146 | .073 |
| Insecurity | -.165 | .043* |
| Gender | .068 | .406 |
| Age | -.040 | .644 |
| Education | .131 | .109 |
| Income | .001 | .990 |
| Datacoll | .098 | .233 |

**Significant at <0.01

*Significant at < 0.05

The results show that the groups of respondents' variable Datacoll do not have a significant impact (0.233). Two of the TRI dimensions are significant, Innovativeness followed by Insecurity. On the other hand, none of the demographic factors are significant. In summary, belonging to the group of paper respondents or to the group of online respondents has a significant effect on online buying only when one considers the impact of the TRI dimensions on the dependent variable.

3. Discussion

The results of the regression analysis indicated that the Technology Readiness Index (TRI) is able to predict the adoption of online buying in Saudi Arabia with Innovativeness being the most significantly related factor followed by Insecurity. One way to explain the results could be by examining the cultural dimensions of Saudi Arabia. Saudi people scored above average on the Innovativeness dimension (mean score = 3.385, on a scale of 1 to 5). According to Hofstede (1984), the Saudi culture is a collectivist society (scored low on the Individualism dimension at 25). In collectivist societies, people are strongly integrated and tend to socially communicate and engage in hobbies together (Wee & Ramachandra, 2000); this is contrary to the fact that the adoption of a new technology would separate an individual from other individuals. This applies to the technology of buying online which is mainly performed individually without the company of other individuals. It is important to keep in mind that Hofstede's study was conducted almost three decades ago in 1984, and therefore the society might have changed to a noticeable extent since then. Moreover, most of respondents in the sample were students and we could hypothesize that younger people would currently score higher on the Individualism dimension than they would have scored back in 1984.

The Saudi society also scored very high on the Uncertainty Avoidance (UA) dimension (UA) with a value of 80 (Hofstede, 1984). The high UA score could explain the high score on the Insecurity dimension. Societies with a high level of UA tend to restrict any new or unknown situations by means of regulations and rules due to the fear of experiencing new situations. As such, in the online shopping environment, people risk paying money for products that they cannot touch, see or experience, which may result in dissatisfaction with

the product after buying it; people also expose themselves to the risk of theft of their financial information (such as their credit card number) or personal information (Forsythe et al., 2006). The risk associated with buying products online might lead some Saudi people to consider buying online as insecure and to avoid doing so due to the high Uncertainty Avoidance in the Saudi society. In a similar manner, Saudi people indicated a low intention to buy furniture and cars online in the future, which can be explained by the high prices and risks associated with buying such products which leads them to simply avoid buying these products. Additionally, in Saudi Arabia, there is an absence of clear e-commerce statutes regulations and rules (Al-Solbi & Mayhew, 2005; Agamdi, 2008), which might also result in fraud as the perpetrators do not fear any punishment. Accordingly, in high UA societies such as Saudi Arabia, people might tend to restrict buying online and to consider it to be insecure due to the associated risks.

The results also revealed a significant positive relationship between level of education and adoption of online buying. This confirms the studies by (Li et al., 1999; Liao and Cheung, 2003; Porter & Donthu, 2006). One interpretation of this finding could be that highly educated people perceive a greater ability to learn new skills and acquire knowledge than lower educated people (Rogers, 1995). Purchasing online requires following a sequence of processes: establishing an internet connection, browsing the e-shop, and paying online. All of these processes require an ability to deal with high-tech products that require a previous level of knowledge pertaining to computers and an ability to learn new things.

The findings also show that demographic factors like (Gender and Level of education) correlate with attitude toward technology. The existence of correlation between gender and attitude toward technology was partially supported with males being more

optimistic and innovative than females, which confirms the studies by (Elliot & Hall, 2005 and Tsikriktsis, 2004) that state that males have higher levels of self-confidence and are more eager to use new technologies than females. The findings also revealed a partial correlation between the level of education and attitude toward technology with highly educated people being more optimistic than lower educated people. The results did not support the existence of correlation between the other demographics (Age and level of income) and attitude toward technology. This could be explained by the fact that there was not much variance in the sample. The sample was biased toward young people (the ages of 18 to 35 comprising 53.3% of all the respondents) and was also biased toward average income people (incomes ranging from 1,000 SR to 10,000 SR comprising 52, 3% of all the respondents).

The findings regarding the relationship between the TR and demographics on one hand and the products bought online and intended to be bought online on the other hand show that there exists a negative relationship between the levels of Insecurity on the one hand and buying and the intention to buy clothes and electronics online on the other hand. This means that the lower the level of feeling of Insecurity, the higher the level of buying clothes and electronics online. The negative relationship between Insecurity and buying clothes online makes sense as buying clothes would require a low level of insecurity in terms of meeting the customers' expectations regarding, for instance, the quality, size and material of the products. The high prices of electronics and possibly clothes also would require a low level of insecurity. On the other hand, Gender was positively related to buying clothes online, which means that females buy clothes online more than males. This makes sense as usually women are more interested in buying clothing (Slyke et al., 2002). Males, on the other hand, were found to be more interested than women in buying or in having the

intention to buy electronics online, which confirms the study by Slyke et al. (2002) that found that men are more interested in buying electronics, both hardware and software than females. Not surprisingly, highly educated people were found to buy or to intend to buy books online more than lower educated people. This could be explained by the fact that highly educated people read more books or need books that are not available in the local market. In conclusion, Innovativeness and Insecurity (of the attitude dimensions), and Gender and Level of education (of the demographics) were the factors that were most related to the products bought online or intended to be bought online.

4. Recommendations

The results of the study showed that attitude does matter when explaining the level of online buying in Saudi Arabia with Innovativeness and Insecurity being the most important factors. Thus, these two dimensions should be addressed as they are linked to the other barriers to online buying that exist in Saudi Arabia such as the lack of e-commerce regulations and rules and the high cost of internet services.

In order to increase the level of online buying in Saudi Arabia, it is recommended that first the currently existing barriers should be removed. Problems associated with obtaining an internet connection and its cost should be considered and resolved, so that even people who have a low income can have access to the internet. Furthermore, campaigns can be launched about how to use online services and about how to promote the internet and the benefits of its related services. More importantly, a clear uniform address system should be established so that people can have their products conveniently delivered to their home without having the trouble of describing their addresses in detail. Additionally, work needs

to be done on improving the security of online shopping transactions such as securing personal and financial information so that people do not fear about violations of their privacy or about the security of their personal and financial information. As such, e-commerce regulations and rules should be legislated to ensure that organizations respect the privacy of their customers as well as to ensure the rights of all the involved parties. Establishing clear e-commerce regulations would decrease the high level of insecurity associated with shopping online.

Promotions and campaigns should then be undertaken by the Ministry of Commerce or by the companies that aim to target Saudi customers to inform the people that the concerns and problems related to buying online are being addressed with a view to reducing the level of feelings of insecurity. This would contribute to more positive attitude. The Ministry of Commerce or the companies involved should also conduct campaigns about the many advantages and benefits of shopping online and about the ease of using such technologies in order for people to develop more positive attitudes; this is especially with regard to the Discomfort and Innovativeness dimensions.

Organizations should also make efforts to offer their products and services according to people's needs. Results showed that people tend to buy certain products online such as airline tickets, electronics and clothes. Of all the online shoppers surveyed, around 40% reported buying these products online. Thus, companies can benefit from this tendency by targeting the Saudi population with these products. Exclusive online promotions such as lower prices or the availability of wider collections can also be considered in order to attract the attention of people and draw them towards experiencing online shopping. Organizations should also develop privacy policies and related regulations about compliance, returns and

delivery policies in order to raise the customers' level of awareness and give them confidence about the protection of their rights and personal information. Finally, technology is having an increasing role to play in many lives and in many countries, but the results highlight that culture can still play a large role in explaining consumers' behaviour and their intentions to buy. Therefore, companies should develop specific marketing strategies for targeting potential online consumers by taking into their culture consideration.

V. Conclusion

Various studies have revealed environmental and architectural reasons underlying the level of online buying in Saudi Arabia. However, until now, there has been no examination of the influence of attitude on Saudi's adoption of online buying. This study is one of the few studies that have been conducted in developing countries and it is the first in an Arab country. This study aimed to uncover if there exists a relationship between the level of online buying adoption in Saudi Arabia on the one hand and Saudi people's attitude toward technology and their demographics on the other hand. The study was based on a survey conducted in Saudi Arabia using the TRI, which was adapted from Parasuraman (2000) and its four dimensions: Innovativeness, Optimism, Discomfort and Insecurity. Regression analyses were run to analyze the data collected and test the research hypotheses. The findings of the study revealed that attitudes toward technology have an influence on the adoption of online buying in Saudi Arabia, and that this influence has a great impact than demographics on online shopping behaviour. Particularly among the attitude variables, Innovativeness was found to be the most significant factor; this was followed by Insecurity. Of the demographic factors, education was found to be the most significant factor explaining the adoption of online shopping. Based on these findings, this study offers a number of recommendations to the Saudi government and to e-retailers that might be important for expanding the adoption of online shopping in Saudi Arabia. The results also suggest that cultural dimensions can be linked to the many explanations of the levels of the TRI and of consumers' intentions and behaviour. Finally, the results revealed that belonging to one of the two groups of respondents (those who responded to the online survey and those who

responded to the paper survey) has an impact on buying online only in terms of an individual's level of education, innovativeness and insecurity.

Research limitations

The sample was largely biased toward people who were aged between 18 and 35, who had completed an undergraduate level of education and who had an income of 1,000 to 10,000 SR, which may not be representative of the general population of consumers in Saudi Arabia. Therefore, in order to increase the validity and the generalizability of the findings of the study, future studies should attempt to include respondents from all groups within the Saudi population. Additionally, the study only covered the eastern region of Saudi Arabia, so future studies might attempt to cover all Saudi regions. Finally, the survey did not include questions about current barriers against the adoption of online buying in Saudi Arabia. Thus, future studies might include questions about these barriers in order to ascertain whether they explain some of the scores of the inhibitors of the Attitude dimensions and of online buying behaviour as well as tracking any perceived improvements and its impact on consumer attitude and online shopping adoption.

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VII. Appendix

Appendix 1: The Technology Readiness Index (Parasuraman, 2000).

Optimism

- OPT1 Technology gives people more control over their daily lives.*
- OPT2 Products and services that use the newest technologies are much more convenient to use.*
- OPT3 You like the idea of doing business via computers because you are not limited to regular business hours.*
- OPT4 You prefer to use the most advanced technology available.*
- OPT5 You like computer programs that allow you to tailor things to fit your own needs.*
- OPT6 Technology makes you more efficient in your occupation.*
- OPT7 You find new technologies to be mentally stimulating.*
- OPT8 Technology gives you more freedom of mobility.
- OPT9 Learning about technology can be as rewarding as the technology itself.
- OPT10 You feel confident that machines will follow through with what you instructed them to do.
 - Computers are easier to deal with than people performing the same service.*
 - You find you are doing more things now with advanced technology than a couple of years ago.*
 - You like the idea of doing business by computer because there is no person to pressure you.*
 - People can solve problems more effectively than computers. [reverse scored]
 - Society should not depend heavily on technology to solve its problems. [reverse scored]
 - People often become too dependent on technology to do things for them. [reverse scored]
 - The benefits of new technologies are often grossly overstated. [reverse scored]
 - People tell you that you are too optimistic about technology. [reverse scored]
 - You find that technology designed to make life easier usually has disappointing results. [reverse scored]
 - You want to see the benefits of technology demonstrated before you buy it. [reverse scored]

Innovativeness

- INN1 Other people come to you for advice on new technologies.*
- INN2 It seems your friends are learning more about the newest technologies than you are. [reverse scored]*
- INN3 In general, you are among the first in your circle of friends to acquire new technology when it appears.*
- INN4 You can usually figure out new high-tech products and services without help from others.*
- INN5 You keep up with the latest technological developments in your areas of interest.
- INN6 You enjoy the challenge of figuring out high-tech gadgets.
- INN7 You find you have fewer problems than other people in making technology work for you.
 - You have avoided trying new high-tech things because of the time it takes to learn them. [reverse scored]*
 - You are always open to learning about new and different technologies.
 - There is no sense trying out new high-tech products when what you have already is working fine. [reverse scored]

Discomfort

- DIS1 Technical support lines are not helpful because they don't explain things in terms you understand.*
- DIS2 Sometimes, you think that technology systems are not designed for use by ordinary people.*
- DIS3 There is no such thing as a manual for a high-tech product or service that's written in plain language.*
- DIS4 When you get technical support from a provider of a high-tech product or service, you sometimes feel as if you are being taken advantage of by someone who knows more than you do.*
- DIS5 If you buy a high-tech product or service, you prefer to have the basic model over one with a lot of extra features.
- DIS6 It is embarrassing when you have trouble with a high-tech gadget while people are watching.
- DIS7 There should be caution in replacing important people-tasks with technology because new technology can breakdown or get disconnected.
- DIS8 Many new technologies have health or safety risks that are not discovered until after people have used them.
- DIS9 New technology makes it too easy for governments and companies to spy on people.
- DIS10 Technology always seems to fail at the worst possible time.
- New technology is often too complicated to be useful.*
 - You get overwhelmed with how much you need to know to use the latest technology.*
 - With new technology, you too often risk paying a lot of money for something that is not worth much.*
 - It is helpful to have a new high-tech product or service explained to you by a knowledgeable person.
 - You find it limiting to use high-tech products that are designed to be overly simple. [reverse scored]
 - It is not really critical to have a detailed manual for a high-tech product or service. [reverse scored]
 - You like to try out all the special features available in a new high-tech product to see what they can do. [reverse scored]
 - People miss out on the benefits of technology when they delay a purchase for something better to come out. [reverse scored]
 - You feel you are usually in control of new technologies. [reverse scored]
 - When you have a problem with technology, you prefer to solve the problem on your own rather than call for help. [reverse scored]
 - The hassles of getting new technology to work for you usually makes it not worthwhile.

Insecurity

- INS4 You do not feel confident doing business with a place that can only be reached online.*
- INS5 Any business transaction you do electronically should be confirmed later with something in writing.*
- INS6 Whenever something gets automated, you need to check carefully that the machine or computer is not making mistakes.
- INS7 The human touch is very important when doing business with a company.
- INS8 When you call a business, you prefer to talk to a person rather than a machine.
- INS9 If you provide information to a machine or over the Internet, you can never be sure it really gets to the right place.*
- Revolutionary new technology is usually a lot safer than critics lead people to believe. [reverse scored]
 - A machine or computer is going to be a lot more reliable in doing a task than a person. [reverse scored]
 - It can be risky to switch to a revolutionary new technology too quickly.
 - If you purchased something from a machine using a credit card, you would usually NOT require a receipt. [reverse scored]
 - If you buy products that are too high-tech, you may get stuck without replacement parts or service.
 - Technological innovations always seem to hurt a lot of people by making their skills obsolete.

NOTE: Labels are shown only for items retained in the final Technology Readiness Index (TRI); bulleted items were included in the NTRS but eliminated during the scale-refinement process. Items with an asterisk at the end were included in the preliminary TR scale developed from the Sallie Mae study. The TRI is copyrighted by Rockbridge Associates and the author; its use requires written permission from the author.

Appendix 2: Recruitment letter for the data collection.

The Impact of Attitudes toward Internet Technology and Demographics on Saudi Consumers' use of Online Shopping.

You are invited to participate in a research dedicated to the internet technology and online shopping on the Saudi market.

Your participation would entail answering a questionnaire that will last about 15-20 minutes. The content of the interview will be kept confidential and be used for research purposes only.

Through this survey, I'm interested to learn more about consumers' attitude toward internet technology and their shopping behavior. There will be no right or wrong answers; you will just have to express your opinions.

Your participation in this research is voluntary, and will be highly appreciated.

I would like to thank you again for your participation. It will help me to better understand your attitude toward internet technology and your use of online shopping.

Appendix 3: Consent form for data collection.

Informed Consent Form

Title of the study: **The Impact of Attitudes toward Technology and Demographics on Saudi Consumers' use of Online Shopping.**

Invitation to Participate: I am invited to participate in the abovementioned research study.

Purpose of the study: The purpose of the study is to gain a better understanding of the link between attitudes toward technology and the use of online shopping in Saudi Arabia.

Voluntary participation: My participation will consist essentially of taking part in a survey (about 15-20 minutes) during which I will answer questions related to the use of technology based products and services, and attitude toward internet technology. I am under no obligation to participate and if I choose to participate, I can withdraw from the study at any time and/or refuse to answer any questions, without suffering any negative consequences.

Benefits: My participation in this study will contribute to deepening the understanding of what influences Saudi Arabia consumers to shop online and specifically the attitude toward internet technology.

Confidentiality and anonymity: The information I will share will remain strictly confidential. The contents will be used only for the purpose of this research. Anonymity will be protected as identifying personal information will never be asked for at any time during the study.

Data conservation: Collected data will be kept secure using secure binders and password protected files in the researcher's office at the University of Ottawa, for ten years.

Acceptance: By completing and returning the questionnaire to the researcher, I attest that I agree to participate in the proposed research project.

This project was approved by the Research Ethics Board of the University of Ottawa. If I have any questions regarding the ethical conduct of this study, I may contact the Protocol Officer for Ethics in Research.

I am invited to keep this letter of information for my records.

| | | | | | |
|---|--|--|--|--|--|
| I am going to purchase technological products in the next six months. | | | | | |
|---|--|--|--|--|--|

5) Please indicate how much you agree or disagree with the following statements about online shopping:

| | Strongly disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|-------------------|----------|---------|-------|----------------|
| Online shopping improves my shopping productivity | | | | | |
| Online shopping enhances my effectiveness in shopping | | | | | |
| Online shopping improves my shopping ability | | | | | |
| Online shopping is clear and understandable | | | | | |
| Online shopping does not require a lot of mental effort | | | | | |
| Online shopping is easy to use | | | | | |
| Online shopping is fun on its own sake | | | | | |
| Online shopping makes me feel good | | | | | |
| Online shopping is boring | | | | | |
| Online shopping is exciting | | | | | |
| Online shopping is enjoyable | | | | | |

6) Please indicate your intention to buy online the following products/services:

| | No intention to buy | Intention to buy in the next 6 months | Intention to buy in the next 12 months |
|-----------------------------|---------------------|---------------------------------------|--|
| Furnitures | | | |
| Books | | | |
| Clothing/Accessories/ Shoes | | | |
| Air tickets | | | |
| Electronics | | | |
| Cars | | | |

7) For the following statements, please check the box that corresponds to your answer:

| | Strongly disagree | Disagree | Neutral | Agree | Strongly Agree |
|--|-------------------|----------|---------|-------|----------------|
| Technology gives people more control over their daily lives. | | | | | |
| Products and services that use the newest technologies are much more convenient to use. | | | | | |
| You like the idea of doing business via computers because you are not limited to regular business hours. | | | | | |
| You prefer to use the most advanced technology available. | | | | | |
| You like computer programs that allow you to tailor things to fit your own needs. | | | | | |
| Technology makes you more efficient in your occupation. | | | | | |
| You find new technologies to be mentally stimulating. | | | | | |
| Computers are easier to deal with than people performing the same service. | | | | | |
| You find you are doing more things now with advanced technology than a couple of years ago. | | | | | |
| You like the idea of doing business by computer because there is no person to pressure you. | | | | | |

8) For the following statements, please check the box that corresponds to your answer:

| | Strongly disagree | Disagree | Neutral | Agree | Strongly agree |
|--|-------------------|----------|---------|-------|----------------|
| Other people come to you for advice on new technologies. | | | | | |
| It seems your friends are learning more about the newest technologies than you are. | | | | | |
| In general, you are among the first in your circle of friends to acquire new technology when it appears. | | | | | |
| You can usually figure out new high-tech products and services without help from others. | | | | | |
| You find you have fewer problems than other people in making technology work for you | | | | | |
| You have avoided trying new high-tech things because of the time it takes to learn them. | | | | | |

9) For the following statements, please check the box that corresponds to your answer:

| | Strongly disagree | Disagree | Neutral | Agree | Strongly agree |
|--|-------------------|----------|---------|-------|----------------|
| Technical support lines are not helpful because they don't explain things in terms you understand. | | | | | |
| Sometimes, you think that technology systems are not designed for use by ordinary people. | | | | | |
| There is no such thing as a manual for a high-tech product or service that is written in plain language. | | | | | |
| When you get technical support from a provider of a high-tech product or service, you sometimes feel as if you are being taken advantage of by someone who knows more than you do. | | | | | |
| New technology makes it too easy for governments and companies to spy on people. | | | | | |
| New technology is often too complicated to be useful. | | | | | |
| You get overwhelmed with how much you need to know to use the latest technology. | | | | | |
| With new technology, you too often risk paying a lot of money for something that is not worth much. | | | | | |

10) For the following statements, please check the box that corresponds to your answer:

| | Strongly disagree | Disagree | Neutral | Agree | Strongly agree |
|--|-------------------|----------|---------|-------|----------------|
| You do not consider it safe giving out a credit card number over a computer. | | | | | |
| You do not consider it safe to do any kind of financial business online. | | | | | |
| You worry that information you send over the internet will be seen by other people. | | | | | |
| You do not feel confident doing business with a place that can only be reached online. | | | | | |
| Any business transaction you do electronically should be confirmed later with something in writing. | | | | | |
| Whenever something gets automated, you need to check carefully that the machine or computer is not making mistakes | | | | | |
| The human touch is very important when doing business with a company. | | | | | |
| If you provide information to a machine or over the internet, you can never be sure it really gets to the right place. | | | | | |

Appendix 5: Arabic version of the survey.

لقد وضعت هذه الدراسة لأغراض البحث من قبل طالب، للحصول على شهادة الماجستير.
و تعتبر نتائجها سرية للغاية إذ يهدف إلى اعتبارها وسيلة لجمع معلومات متعلقة بالشراء عبر الانترنت.
شكرا لكم مقدما على وقتكم و مدخلاتكم.

(١) هل تستخدم الانترنت لشراء منتجات:

نعم لا (الرجاء الانتقال مباشرة إلى السؤال رقم ٤)

(٢) ما هو معدل شرائك لمنتجات عبر الانترنت:

مرة في الأسبوع أكثر من مرة كل ثلاثة أشهر

أكثر من مرة في الشهر مرة كل ثلاثة أشهر

مرة في كل شهر أوقات أخرى : الرجاء ذكرها _____

(٣) ماذا تشتري عبر الانترنت؟ (يمكنكم وضع أكثر من علامة واحدة):

أثاث كتب

ملابس /إكسسوارات/أحذية تذاكر طيران

إلكترونيات أشياء أخرى: الرجاء ذكرها _____

٤) رجاءً حدد مدى اتفاقك مع الجمل التالية:

| أوافق تماماً | موافق | محايد | أرفض | أرفض بشدة | |
|--------------|-------|-------|------|-----------|--|
| | | | | | أنا مهتم بالتكنولوجيا عموماً |
| | | | | | التكنولوجيا مهمة بالنسبة لي |
| | | | | | إنني مهتم بالتكنولوجيا التي استعملها |
| | | | | | للتكنولوجيا صلة وثيقة بحياتي |
| | | | | | أنا عازم على شراء منتجات تقنية في الأشهر القادمة |

٥) الرجاء الإفادة بمدى موافقتك من عدمها على الآراء التالية و المتعلقة بالشراء عبر الإنترنت:

| أوافق تماماً | موافق | محايد | أرفض | أرفض بشدة | |
|--------------|-------|-------|------|-----------|--|
| | | | | | الشراء عبر الإنترنت يدعم إنتاجي الشرائية |
| | | | | | الشراء عبر الإنترنت يعزز من فعاليتي عند التسوق |
| | | | | | الشراء عبر الإنترنت يحسن من مقدرتي على الشراء |
| | | | | | الشراء عبر الإنترنت واضح و مفهوم |
| | | | | | الشراء عبر الإنترنت لا يتطلب جهداً ذهنياً كبيراً |
| | | | | | الشراء عبر الإنترنت سهل الممارسة |
| | | | | | الشراء عبر الإنترنت ممتع في حد ذاته |
| | | | | | الشراء عبر الإنترنت يريحني نفسياً |
| | | | | | الشراء عبر الإنترنت ممل |
| | | | | | الشراء عبر الإنترنت مشوّق |
| | | | | | الشراء عبر الإنترنت ممتع |

٦) الرجاء ذكر ما تنوي شراءه من المنتجات والخدمات التالية عبر الانترنت:

| أنوي الشراء في الـ ١٢ شهر القادمة | أنوي الشراء في الـ ٦ أشهر القادمة | لا أنوي الشراء | |
|--------------------------------------|--------------------------------------|----------------|---------------------------|
| | | | أثاث |
| | | | كتب |
| | | | ملابس / إكسسوارات / أحذية |
| | | | تذاكر طيران |
| | | | إلكترونيات |
| | | | سيارات |

٧) حدد الخانة التي تتوافق ورأيك في الجمل التالية:

| أوافق تماما | موافق | محايد | أرفض | أرفض بشدة | |
|----------------|-------|-------|------|--------------|--|
| | | | | | التكنولوجيا توفر للبشر التحكم أكثر في حياتهم اليومية |
| | | | | | أحدث المنتجات و الخدمات التكنولوجية، أكثر ملائمة للاستعمال |
| | | | | | أنت تفضل فكرة المتاجرة عبر الحواسيب، لأنك لست مرتبطين بساعات عمل محددة |
| | | | | | تفضل استخدام أحدث التكنولوجيا المتاحة. |
| | | | | | أنت تختار البرامج الحاسوبية التي تتيح لك ربط مهامك لتلبية متطلباتك الشخصية |
| | | | | | التكنولوجيا تجعلك أكثر نجاحاً في تأدية عمالك |
| | | | | | أنت تشعر بأن التكنولوجيات الحديثة محفزة ذهنياً |

| | | | | | |
|--|--|--|--|--|---|
| | | | | | التعامل مع أجهزة الكمبيوتر أسهل من التعامل مع أشخاص يؤدون نفس المهمة. |
| | | | | | أنت تجد الآن، بأنك تنتج أشياء أكثر باعتماد التكنولوجيا المتقدمة، مما كنت تنتج في السنوات الماضية. |
| | | | | | أنت تحبذ فكرة المتاجرة باعتماد الحاسوب ، لأنك لا تخضع لضغوط من الآخرين. |

٨) حدد الخانة التي تتوافق ورأيك في الجمل التالية:

| أوافق تماماً | موافق | محايد | أرفض | أرفض بشدة | |
|--------------|-------|-------|------|-----------|---|
| | | | | | يقصدك أشخاص آخرون لطلب نصحك بشأن التكنولوجيا الحديثة |
| | | | | | يبدو أن زملائك يحظون بمعلومات أكثر منك فيما يتعلق بالتكنولوجيات الحديثة |
| | | | | | إنك على العموم من السباقين بين أصدقائك لاقتناء التكنولوجيا الحديثة، كلما ظهرت |
| | | | | | يمكنك عادةً استكشاف المنتجات والخدمات ذات التكنولوجيا العالية من دون مساعدة الآخرين. |
| | | | | | أنت تجد أن لديك مشاكل أقل من غيرك عند استغلالك التكنولوجيا لعمل ما تريد. |
| | | | | | لقد تجنبنا محاولة استخدام المنتجات التكنولوجية الحديثة، نظراً لما تتطلبه من وقت لاستيعابها. |

٩) حدد الخانة التي تتوافق ورأيك في الجمل التالية:

| أوافق تماماً | موافق | محايد | أرفض | أرفض بشدة | |
|--------------|-------|-------|------|-----------|---|
| | | | | | قنوات الدعم الفني غير مفيدة لأنها لا توضح الأشياء بطريقة مفهومة |
| | | | | | انك تعتقد أحياناً أنّ أجهزة الحاسوب المتقدمة غير موضوعة ليستعملها أشخاص عاديون |
| | | | | | لا يوجد شيء أفضل من دليل المستخدم لخدمة أو لمنتج تكنولوجي متقدم، كتب بلغة واضحة |
| | | | | | عندما تحصل على الدعم الفني من مزود خدمات أو منتجات ذات تكنولوجيا متقدمة , تشعر أحياناً كأنك مستغل من قبل شخص يعرف أكثر منك. |

| | | | | | |
|--|--|--|--|--|--|
| | | | | | التكنولوجيا الحديثة تجعل من السهولة على الحكومات والشركات أن تتجسس على الناس. |
| | | | | | التكنولوجيا الحديثة عادة غير مفيدة، كونها معقدة للغاية. |
| | | | | | تشعر بالإرهاق لكثرة ما يجب أن تتعلمه لتكون قادراً على استخدام التكنولوجيا الحديثة. |
| | | | | | لأجل التكنولوجيا الحديثة، أنت عادة ما تغامر بدفع مبالغ كبيرة مقابل أشياء لا تستحق. |

١٠) حدد الخانة التي تتوافق ورأيك في الجمل التالية:

| أوافق تماماً | موافق | محايد | أرفض | أرفض بشدة | |
|--------------|-------|-------|------|-----------|--|
| | | | | | لا تعتبره من الأمن استخدام رقم بطاقتك الائتمانية عن طريق الكمبيوتر. |
| | | | | | لا تعتبره من الأمن القيام بأي نوع من الأعمال التجارية المالية عبر الانترنت. |
| | | | | | تقلق بأن المعلومات التي ترسلها عبر الانترنت سُترى من قبل أشخاص آخرين. |
| | | | | | أنت لا تشعر بالثقة عندما تتعامل مع موقع لا يمكن الاتصال به إلا عن طريق الانترنت. |
| | | | | | أي معاملة تجارية تقوم بعملها بطريقة الكترونية يجب أن تؤكد لاحقاً بمستند مكتوب. |
| | | | | | إن كل شيء يسجل ألياً يستوجب منك أن تراجع بكل حذر أن عمل الآلة أو الحاسوب سليم من الخطأ. |
| | | | | | التواصل الإنساني هام جداً عندما تتعامل تجارياً مع شركة. |
| | | | | | عندما تقدم معلومة لآلة أو عبر الانترنت، فإنك لن تكون واثقاً أنها قد بلغت مكانها المطلوب. |

الجنس :

أنثى

ذكر

العمر :

٣٥-٢٥

٢٤-١٨

٥٥-٤٦

٤٥-٣٦

٥٦ أو أكثر

أعلى درجة علمية :

دبلوم

شهادة ثانوية

دراسات عليا (ماجستير, دكتوراه,

بكالوريوس

درجات أخرى: الرجاء ذكرها _____

الدخل العائلي الشهري :

٢٠,٠٠٠ - ١٠,٠٠٠ ريال سعودي

١٠,٠٠٠ - ١٠٠٠ ريال سعودي

٣٠,٠٠٠ ريال سعودي أو أكثر

٣٠,٠٠٠ - ٢٠,٠٠٠ ريال سعودي

تجربتك الشرائية: (رجاءً علم على التجربة التي تناسبك)

إنني اشترى عادة من السوق المحلية.

أسافر عادة لمدن أخرى لأتسوق بمراكزها التجارية الكبيرة.

إنني كثيرا ما أسافر للخارج للتسوق.

شكرا جزيلا لكم على تعاونكم معنا

Appendix 6: Statistical analysis tables.

Regression analysis of the dependent variable (SUBMUY) and the independent variables (demographics):

Variables Entered/Removed^b

| Model | Variables Entered | Variables Removed | Method |
|-------|--|-------------------|---------|
| 1 | INCOME, EDUC, GENDER, AGE ^a | | . Enter |

a. All requested variables entered.

b. Dependent Variable: SUMBUY

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .276 ^a | .076 | .051 | 1.30268 |

a. Predictors: (Constant), RAGE, REDUC1, RGender, RINCOME

Coefficients^a

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|-------|------------|-----------------------------|------------|---------------------------|--------|------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1.636 | .486 | | 3.365 | .001 |
| | RGender | -.175 | .227 | -.065 | -.775 | .440 |
| | REDUC1 | .280 | .109 | .212 | 2.562 | .011 |
| | RINCOME | .107 | .191 | .051 | .558 | .577 |
| | RAGE | -.282 | .153 | -.162 | -1.849 | .066 |

a. Dependent Variable: SUMBUY

Regression analysis of the dependent variable (SUBMUY) and the independent variables (attitude):

Variables Entered/Removed^b

| Model | Variables Entered | Variables Removed | Method |
|-------|-----------------------------------|-------------------|---------|
| 1 | INS, Opt, RDISC, INN ^a | | . Enter |

a. All requested variables entered.

b. Dependent Variable: SUMBUY

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .445 ^a | .198 | .177 | 1.20155 |

a. Predictors: (Constant), INS, Opt, RDISC, INN

ANOVA^b

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|-----|-------------|-------|-------------------|
| 1 | Regression | 53.143 | 4 | 13.286 | 9.202 | .000 ^a |
| | Residual | 215.116 | 149 | 1.444 | | |
| | Total | 268.260 | 153 | | | |

a. Predictors: (Constant), INS, Opt, RDISC, INN

b. Dependent Variable: SUMBUY

Coefficients^a

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|-------|------------|-----------------------------|------------|---------------------------|--------|------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1.111 | 1.031 | | 1.078 | .283 |
| | Opt | .209 | .184 | .097 | 1.134 | .259 |
| | INN | .541 | .143 | .327 | 3.795 | .000 |
| | RDISC | -.257 | .133 | -.151 | -1.939 | .054 |
| | INS | -.304 | .140 | -.171 | -2.175 | .031 |

a. Dependent Variable: SUMBUY

Regression analysis of the dependent variable (SUBMUY) and the independent variables (attitude toward technology and demographics):

Variables Entered/Removed^b

| Model | Variables Entered | Variables Removed | Method |
|-------|--|-------------------|---------|
| 1 | INS, Opt, RDISC, INN ^a | | . Enter |
| 2 | AGE, EDUC, GENDER, INCOME ^a | | . Enter |

a. All requested variables entered.

b. Dependent Variable: SUMBUY

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .276 ^a | .076 | .051 | 1.30268 |
| 2 | .484 ^b | .234 | .191 | 1.20282 |

a. Predictors: (Constant), RAGE, REDUC1, RGender, RINCOME

b. Predictors: (Constant), RAGE, REDUC1, RGender, RINCOME, RDISC, INN, INS, Opt

Coefficients^a

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|-------|------------|-----------------------------|------------|---------------------------|--------|------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1.636 | .486 | | 3.365 | .001 |
| | RGender | -.175 | .227 | -.065 | -.775 | .440 |
| | REDUC1 | .280 | .109 | .212 | 2.562 | .011 |
| | RINCOME | .107 | .191 | .051 | .558 | .577 |
| | RAGE | -.282 | .153 | -.162 | -1.849 | .066 |
| 2 | (Constant) | .961 | 1.158 | | .830 | .408 |
| | RGender | .178 | .221 | .066 | .805 | .422 |
| | REDUC1 | .202 | .104 | .154 | 1.946 | .054 |
| | RINCOME | .021 | .179 | .010 | .119 | .905 |
| | RAGE | -.112 | .145 | -.065 | -.776 | .439 |
| | Opt | .171 | .199 | .077 | .857 | .393 |
| | INN | .533 | .148 | .320 | 3.591 | .000 |
| | RDISC | -.287 | .136 | -.167 | -2.116 | .036 |
| | INS | -.302 | .143 | -.171 | -2.119 | .036 |

a. Dependent Variable: SUMBUY