A Study of the Factors that Influence the Acceptance of e-Commerce in Developing Countries: A Comparative Survey between Iran and United Arab Emirates

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ABSTRACT

National culture is an important factor in any study of global information system attitudes, recent studies [1,2] also indicate that gender and previous behavior may also play roles in attitude towards technology. Thus, with the advent of the Internet and the importance of electronic commerce and the previous studies indicating the relevance of the dimensions of culture, gender and previous experience to information technology, it becomes imperative to also understand the role of these dimensions to electronic commerce. This paper examined each of these by using electronic commerce as the common technology. This paper provides significant data on identifying the areas and issues important to the success of e-commerce, and shows the impact of culture, gender and previous behavior upon those issues. To determine if there are differences in attitude about technology in general and e-commerce in particular, among the independent variables of culture groups, genders and those having experienced an e-commerce activity, 136 people from Iran and the United Arab Emirates were given surveys allowing them to express their opinions on several important issues. These issues included national control, privacy cost, property rights, access rights, internet infrastructure and consumer preferences. The findings resulted in support for two of the hypothesis. Further, it was clear that culture groups differ in attitudes about national control, property rights, access rights, and internet infrastructure. More importantly, this paper found no statistically significant differences among culture groups or gender in attitudes about privacy cost and consumer preferences.

Keywords: E-Commerce, Information Technology, Developing Countries, Attitude, Culture, Iran, United Arab Emirates.

1. INTRODUCTION

E-commerce is an outcome of Information and Communications Technology (ICT) revolution in economic fields or the most visible way of contribution of ICT to economic growth. ICT, as a tool of socio-economic development, is a significant issue for developing countries. During the past decade, ICTs have become part of many developing countries’ development plan and poverty reduction strategies. Governments have formulated ICT strategies or ‘master plan’ and set objectives to ensure the effective deployment and use of ICTs in their country, for the benefit of their citizens and enterprises. According to the United Nations Conference on Trade and Development Information Economy Report in 2010, the ICT sector represents a significant part of the world economy. In some developing countries, it accounts for more than 10 percent of business sector value added [3]. A common definition
of e-commerce is to provide trade processes through data interchange, transaction of goods and services via computer networks such as the Internet [4].

The primary purposes of this study were to examine e-commerce across national borders to uncover relationships among certain factors and attitudes about e-commerce. This paper isolated and identified issues and areas important to the implementation of e-commerce that may be influenced by national culture. Another purpose was to understand the relationships of gender and prior experience on those factors. The independent variables were the two nations involved in the study, gender and previous experience. The dependent variables were attitudes about various aspects of technology use.

2. LITERATURE REVIEW

2.1. Background

E-commerce arguably has a potential to add a higher value to businesses and consumers in developing countries than in developed countries [5]. Previous studies [6,7] relate the challenges posed by various national differences, including culture, on elements of Internet use and commercialization. For example, electronic mail has been studied in Japan and in the US, and shown to have different levels of use and importance due in part to language and to national cultural differences. Although national culture is an important factor in any study of global information system attitudes, recent studies [1,2,8] also indicate that gender and previous behaviour may also play roles in attitude towards technology.

2.2. E-Commerce In Developing Countries

E-commerce is an objective consequence of ICT enjoying such advantages as globalization of commerce, elimination of time and space limits, increase in purchase rate, easy access to information, significant reduction of transaction costs and reduction of duration of transaction. Electronic commerce presents developing countries an opportunity that can potentially enhance economic growth and development [9]. The adoption of e-commerce in developing countries differs greatly from developed countries. Developing countries often lack the necessary financial, legal, and physical infrastructures for the development of e-commerce. In addition, developing countries often have different cultures and business philosophies, which limit the applicability and transferability of the e-commerce models designed by Western countries. However, some developing countries have initiated strategies to achieve an appropriate level of e-commerce development [10].

2.3. E-Commerce In Iran & Uae

According to Internet World Stats, there was a sharp growth of Internet users 13180% in Iran. This is from 250,000 users in 2000 to about 33 million users in June 30, 2010, this shows the largest amount of Internet users (52.5 percent) in the Middle-East. No doubts that the United Arab Emirates and Dubai in particular, enjoys many advantages for Internet and e-commerce growth and development. Some of these advantages were during the opening of the Internet city. Dubai Internet City is expected to attract $400 millions in investment. With the cost of two and half billion dollars ($2.5 billion), Dubai Technology and Ideas Oasis is under the process to be the largest enterprise for investors and specialized people in the electronic industry [10].

More than two third of the citizens of the United Arab Emirates or 75.9% use the Internet regularly, according to Internet World Stats (2011). The top five countries of the list of nations of the Middle East in Internet penetration are as follows. First, Bahrain with 88%. UAE is the second, where 75.9% of residents use the Internet. Rank third is Qatar with 51.8%. Then Iran with the penetration of 43.2% connects to the World Wide Web.

3. RESEARCH MODEL AND HYPOTHESES

3.1. Research Model

This paper investigated the relationship among nations and attitudes towards e-commerce. The independent variables were the nations involved, national cultures, gender and previous Web purchase experience, while the dependent variables were the attitudes about e-commerce. Public Policy is a major aspect of e-commerce identified

This paper developed constructs of national control, privacy cost, property rights, access rights and the internet infrastructure. (see Figure 1.)

3.1.1. **Control And Privacy**

Privacy has been defined in three main ways. First, privacy is a "claim, entitlement or right" of a person to determine what personal information may be communicated to others. Secondly, privacy is defined in relation to the "control" of access to personal information. Finally, privacy is often understood with an individual's "rightful sphere of autonomy", the intimacies of life and one's thoughts or body. [12]

3.1.2. **Privacy Cost**

Nations enact laws to protect from the loss of privacy, and that the Internet has heightened the awareness of the potential privacy loss due to technology. Privacy can be protected by information control, property control and the use of anonymity of addresses in Internet communications. [12]

3.1.3. **Property Rights And Infrastructure**

Intellectual property IPR legislation applying to e-commerce includes the international Trade-Related Aspects of Intellectual Property (TR1PS) agreement. TRIPS provides international IP standards, and specifically provides copyright protection for computer programs as intellectual creations.

3.1.4. **Access Rights**

The World Wide Web Consortium (W3C) defines the Web as the "universe of network-accessible information". One of the W3C's primary goals is to make these benefits, including universal access, available to all people, whatever their hardware, software, network infrastructure, native language, culture, geography, location, or physical or mental ability” (www.w3.org/Consortium/Points).

3.1.5. **Consumer Preferences**

Consumer Preferences was defined in this paper as the propensity to prefer the store as the purchase location instead of the Internet. Consumers in nations where face-to-face agreements are considered important, such as the Middle East, may cause consumers to prefer stores over the Internet. These consumers may use the Web to obtain information, and conduct their transactions in the store.

3.2. **Research Hypotheses**

3.2.1. **Nation Culture**

The users in various nations have differing attitudes about aspects and issues related to information technology and electronic commerce, expressed in the hypothesis as:

\( H_1: \) Cultural groups will differ in attitude about e-commerce.

Attitudes may be statistically different yet essentially appear to relate the same opinion in differing degrees. Thus, this paper took an anthropological definition of culture since the focus was on the comparisons of values, beliefs and meanings conceptualized in expressed attitudes about e-commerce.

3.2.2. **Gender**

Genders might also differ in e-commerce attitudes.

\( H_2: \) Gender influences attitude about e-commerce.
Harris and Davison (2009) study computer anxiety and involvement with personal computers in six Pacific Rim nations, and note that gender may have an influence on technology attitudes and use. They report that males have a more positive attitude towards technology. [13]

3.2.3. Experience

The Technology Acceptance Model (TAM) postulate that behaviour is determined by the intention to perform that behaviour and that intention is influenced by attitude. Then, prior experience with e-commerce will affect attitudes towards other aspects of e-commerce.

**H3:** Experience influences attitude about e-commerce.

4. DATA ANALYSIS AND RESULTS

The respondents of this paper were 136 people in Iran and the United Arab Emirates. The data have been collected via online questionnaires. (www.surveyshare.com) The Cronbach’s Alpha was used to assess the reliability of scales, for Iran and UAE these were .812 and .768 that showed internal consistency. The characteristics of the sample groups are shown in Table 1.

To test the hypotheses, MANOVA was used since there was more than one dependent variable. MANOVA tests are interpreted by examining the significance level of the F-ratio. As the means of the treatment groups become similar, the F-ratio approaches 1. For this study, the acceptable significance for assuming a difference in treatment groups was < .05.

This paper proposed and tested three hypotheses, as shown in table 2 below.

Hypotheses H₁ and H₃ resulted in statistically significant differences among the groups under this study.

The study questions asked what the similarities and differences were in attitudes about e-commerce among culture groups. An ANOVA test of each dependent variable shows these. The finding for each factor is shown in Table 3.

It was interesting to note the similarities in the responses, as indicate by the significance values, especially within the factors of Privacy Cost and Consumer Preferences.

5. CONCLUSION

The survey of people in Iran and the UAE, revealed several interesting facts about respondents and the nature of e-commerce as perceived by the various culture groups, genders and e-commerce experience levels involved. Three hypotheses were formulated and tested. Based upon the significance of the F-ratio, it was determined that two of the hypotheses were supported. This study concluded that there was reasonable evidence to support the statement that culture and prior experience play a role in attitudes about electronic commerce. From the perspective of culture groups, it was clear that they differed in attitude about national control, property rights, access rights and Internet Infrastructure. However, and very important, culture played no role in influencing attitudes about privacy cost and consumer preference as defined in this paper. An explanation for the similarities and differences in the results of testing culture groups, is the manifestation of cultures in their differing ability to adapt to technology. Berger and Huntington (2002) distinguish between "strong" and "weak" cultures. Although they do not tag every nation, they note that Japan, China and India are strong in their abilities to absorb other cultures while maintaining their distinctive identities. They characterize some European nations, Germany in particular, as weak in that nation's apparent desire to readily adapt the American lifestyle and attitudes. [14]

This paper concluded that there was no reasonable evidence to support the statement that gender plays a role in attitudes about electronic commerce. From the perspective of ecommerce experience, it was concluded that Prior
experience influenced attitudes about national control, property rights, internet infrastructure and consumer preferences. Prior experience did not influence attitudes towards privacy cost and access rights.

6. REFERENCES


TABLES AND FIGURE

![Fig. 1: Research Model](image-url)
Table 2: The characteristics of the sample groups

<table>
<thead>
<tr>
<th>Item</th>
<th>IRAN</th>
<th></th>
<th>UAE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Count</td>
<td>Percent</td>
<td></td>
<td>Count</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>41</td>
<td>53%</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Female</td>
<td>36</td>
<td>47%</td>
<td></td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>77</td>
<td>100%</td>
<td></td>
<td>59</td>
</tr>
<tr>
<td>EC Experience</td>
<td>3</td>
<td>4%</td>
<td></td>
<td>20</td>
</tr>
</tbody>
</table>

Table 2: MANOVA for Culture Groups, Gender & Experience

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H_1$: Cultural groups will differ in attitude about e-commerce.</td>
<td>5.512</td>
<td>.005*</td>
</tr>
<tr>
<td>$H_2$: Gender influences attitude about e-commerce.</td>
<td>2.814</td>
<td>.089</td>
</tr>
<tr>
<td>$H_3$: Experience influences attitude about e-commerce.</td>
<td>5.902</td>
<td>.014*</td>
</tr>
</tbody>
</table>

- Indicates statistically significant differences.

Table 3: ANOVA for Culture Groups, Gender & Experience

<table>
<thead>
<tr>
<th>Factor</th>
<th>$H_1$ Culture Groups Sig.</th>
<th>$H_2$ Gender Sig.</th>
<th>$H_3$ Experience Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Control</td>
<td>.012*</td>
<td>.112</td>
<td>.000*</td>
</tr>
<tr>
<td>Privacy Cost</td>
<td>.157</td>
<td>.063</td>
<td>.079</td>
</tr>
<tr>
<td>Property Rights</td>
<td>.000*</td>
<td>.214</td>
<td>.024</td>
</tr>
<tr>
<td>Access Rights</td>
<td>.001*</td>
<td>.023*</td>
<td>.066</td>
</tr>
<tr>
<td>Internet Infrastructure</td>
<td>.030*</td>
<td>.058</td>
<td>.000</td>
</tr>
<tr>
<td>Consumer Preferences</td>
<td>.320</td>
<td>.084</td>
<td>.006*</td>
</tr>
</tbody>
</table>

- Indicates statistically significant differences.