National Culture and on-line Trust: a Study of Internet Egyptian Users

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Abstract

This research-in-progress investigates cultural issues in e-commerce trust. An experiential survey was conducted with three hundred and seventy Egyptian Internet users, exploring two book-seller web sites. Structure equation modeling analysis suggested that, for the target sample, perceived reputation and perceived familiarity with an Internet store have significant effect on building trust for that store. The paper discusses the importance of these two factors within the Egyptian culture.

1   Introduction

As the use of the E-Commerce continues to expand rapidly, researchers are becoming increasingly interested in identifying factors which lead to more positive evaluations towards on-line stores.

Various studies have stressed on the fact that consumers' lack of trust is a major barriers to the adoption of E-Commerce (Kalakota and Whinston, 1996). In the meantime, there has been a growing body of literature investigating factors affecting consumers' trust (Peterson, Balasubramanian and Bronnenberg, 1997; Egger and Abrazhe vich, 2001; Jarvenpaa, Tractinsky and Vitale, 2000). Meanwhile, some researchers argued that trust is culturally sensitive, claiming that people from different cultures have different perception of trust (Jarvenpaa and Tractinsky, 2000). While most of these researches

looked at cross-cultural comparison between non-western and western cultures, and they rarely considered the Arabic- Speaker's culture.

Egypt is an interesting case to study in this context, as an example of an Arabic country; it represents a cultural group that has typically been ignored in previous studies of consumer behaviour in e-commerce. Furthermore Egypt is now leading the Arab world in terms of internet use, and companies will increasingly want to make use of this opportunity to sell their goods online. However, little is currently known about the factors that affect online purchasing within this culture.

This research takes an intra-cultural approach, investigating the ways Egyptian users perceive E-Commerce web sites. It looks to identify the factors that affect the on-line trust and purchase decision for this cultural group. The research is aiming to investigate if these two factors are affected by the *Uncertainty Avoidance* characteristic of the Egyptian culture (Hofstede, 1994).

The following section of this paper demonstrates the research's methodology and the research administration process. Section three highlights data analysis technique employed in this research which is the Structure Equation Modeling (SEM). In the same section, results extracted from MxGui software, is demonstrated. Conclusion and discussion are given in section four.

2   Method

2.1   Research Hypotheses

Since little is known about Egyptian web users, the research starts with a hypothesis raising stage to look at the general use of the Internet for the Egyptians, in addition to factors affecting their online trust. The hypotheses raising stage included series of semi-structured interviews (El Said and Hone, 2001), an electronic survey (El Said, 2001), and two card sorting sessions (El Said and Hone, 2003).

The analysis of data collected from the hypotheses raising studies suggested that perceived reputation and perceived familiarity with the E-Commerce store can be the deciding factors in whether to trust and buy from an Ecommerce site. Analysis suggests that the key factor which distinguishes the sites from one another is their familiarity or fame as internet retailers. This finding fits

with previous research which emphasizes the role of store reputation in Internet purchase decisions across a number of cultures (Jarvenpaa and Tractinsky, 2000). It also supports other researches that highlighted the effect of familiarity with Internet store on consumer behavior (Gefen, 2000). The hypothetical model of the research is illustrated in figure1.

Figure1: Hypothetical research model

2.2 Experiment Design

This research employs an *experiential survey method* (Grabner-Kräuter and Kaluscha, 2003); where participants are asked to navigate to a specified E-Commerce site(s) and had to perform several predefined tasks and afterwards report on their impressions by filling out a questionnaire. According to Grabner-Kräuter and Kaluscha (2003), the experiential survey method was used by the majority of empirical research in on-line trust, as it provides access to a real-world Web sites, representing the use of a *live* environment.

Two sites were selected, the Amazon (www.amazon.com) site and the E-Kotob (www.e-kotob.com), an Egyptian book-seller site. Both sites were ranked differently according to familiarity, fame and willingness to buy in the card sorting study conducted in the hypothesis raising stage of this research.

During the experiential session, participants were first given the demographic part of the questionnaire to fill. Second, participant were asked to login to Amazon.com and search for a book with the title "Workers on the Nile". After that, they were asked to fill the site evaluation part of the questionnaire for the Amazon site. Participants were then asked to search for the same book on the site E-Kotob.com, and to fill the site evaluation part of the questionnaire for the E-Kotob site. In both cases, participants were given the time to investigate the features of the sites and the purchase method.

2.3 Instrument Design

Items measuring all construct in the survey were taken from literature, where they were quoted to be reliable and valid to measure constructs of the phenomena that they intend to represent. None of these items were modified by changing the wording of the item. Items measuring perceived familiarity and items measuring trust were both taken from Gefen (2000). Items that measure perceived reputation, attitude and willingness to buy were taken from Jarvenpa and Tractinsky (2000). While, the uncertainty avoidance construct was measured using the four Hofstede's (1994) items for assessing uncertainty avoidance.

The survey was designed in English language and was translated and back translated into Arabic language to ensure questions comprehensibility. The Arabic questionnaire was first pilot tested among a small group of people who were not in the final sample.

2.4   Sample

This study employed a non-probability convenience sampling technique. Participants were employed on voluntarily-basis; no financial compensation was given for participants. Internet Egyptian Internet buyers and non-Internet buyers comprised the population from which the sample was drawn. All participants access the Internet frequently and have at least two years of Internet usage experience.   This ensured familiarity with the Internet environment and provided the experiment with reliable results. Researchers targeted professionals who are working in various field, and studying after-noon part time master or diploma degree in various disciplines in four post graduate Institutes located in Cairo.

3 Data Analysis and Results

3.1 General Sample Description

The questionnaire was carried out among 370 young Egyptian professionals in Cairo known to be Internet users. Males represent 63% of participants, wile females were only 37%. Age ranges from 20 to 19. Almost the half (45%) rate their Internet proficiency as "Professional", while 48% rate it as "Intermediate. 36% of the participants are using the Internet for more than 6 years, while 49% are using it for 2 to 5 years.

While, the highest majority of participants showed high technological familiarity and high internet usage, they also expressed high Internet shopping risk attitude. 73% never shop on line, while most of the 48% who shopped on line did that rarely. 81% agree or strongly agree that there is too much uncertainty associated with shopping on the Internet. Furthermore, 83% agree or strongly agree that compared with other ways, buying from the Internet would be more risky. This comes to no surprise as previous literature suggest that e-commerce in Egypt is still in its infancy, and is beset by legal, regulatory, and cultural hurdles (El Nawawy and Ismail, 1999).

The sample showed high uncertainty avoidance with an index of 64.05, which is very near to Hofstede's uncertainty avoidance index (68) for Arab countries, confirming by this Hofstede's categorization of Arab countries of being high in this cultural variable. In a later stage of the research, the sample is divided into three (high, medium and low) cultural group based on the uncertainty avoidance index. The hypothetical model is then compared against these three groups to investigate the effect of uncertainty avoidance cultural variable on the model. Results from this cultural analysis are still in the interpretation phase and not reported in this paper.

3.2 Structure Equation Modeling (SEM)

SEM is a statistical approach for testing hypotheses about relations among observed and latent variables. It models the relationships among multiple independent and dependent constructs simultaneously. SEM is practically useful when one dependent variable becomes an independent variable in

subsequent dependence relationship, which is the case of the trust and attitude in the current research.

Other statistical techniques such as linear regression approach, allowing only a single relationship between dependent and independent variables can not test all relationships associated with the current research in a single statistical test. Therefore, the use of SEM would be preferred over linear regression in the current research. In the past few years, the IS field has seen a substantial increase in the number of submissions and publications using structural equation modeling (SEM) techniques. Part of the reason may be the increase in software packages to perform such statistics (e.g., LISREL, EQS, AMOS, MxGui, and PLS). This research starts an exploration of the hypotheses model using MxGui Software, while PLS software is used in later stage for more comprehensive model analysis. Results from the PLS analysis is still in the interpretation phase and not reported in this paper.

3.3   Model Analysis

MxGui uses covariance matrix to calculate the goodness to fit for the structure model. It starts with an initial model and engages in a series of model re-specifications, each time hoping to improve the model. For model fitting, three sets of goodness-of-fit statistics will be used:
· Chi-square (Chi Sq²): This measure is used to test the closeness of fit between the unrestricted covariance matrix and the restricted covariance matrix. The smaller the value of the ChiSq and the higher the probability associated with ChiSq the closer the fit between the hypothesized model and the perfect fit
· Root Mean Square Error of Approximation (RMSEA): This is one of the first indices to measure a fit. For a good to fit model the RMSEA is recommended to be less than .05
· Akaike's Information Criterion (AIC): AIC is used to address the issue of parsimony in the assessment of model fit. For a good to fit model the RM SEA is recommended to be less than1

In the current research, using MxGui software, the null model, which includes all variables without any relationship between them, was drawn firstly. Relationships were drawn after that using the drawing tool of the software, indicating hypothesized relationships between all variables, which construct the initial model. The three sets of goodness-of- fit statistics (Chi Sq², RMSEA, AIC) were checked for the initial model against the recommended numbers. As they did not match the required numbers for a model to be good-to- fit, simplifications were done to the initial model (modified models), by deleting

the weakest relationship between variable, in order to ensure better goodness-of- fit statistics. The final model was reached when goodness-of- fit statistics were met. The relationships between variables that are indicated in the final model will be the ones to consider as proved hypotheses in the research.

For Amazon site, the test of the structural model demonstrates good fit with the following values.

· ML ChiSq = 1.617   · Probability=0.806
· RMSEA=0.000
· AIC= -6.383

While for E-Kotob site, the test of the structural model demonstrates good fit with the following values.

. ML ChiSq = 0.001   . Probability=0.978
. RMSEA=0.000
. AIC= -1.999

This can be considered as goodness-to-fit measure for the model since RMSEA value < .05 - .08, the AIC value is < 1, and the associated probability is significant. Table 1 summarizes the path estimates for relationships for both sites.

Path	Amazon	E-Kotob
Reputation → Trust	.54	.51
Reputation → Attitude	not confirmed	not confirmed
Reputation → Willingness to Buy	not confirmed	not confirmed
Familiarity → Trust	.38	.37
Familiarity → Attitude	not confirmed	not confirmed
Familiarity → Willingness to Buy	not confirmed	not confirmed
Trust → Attitude	.40	.69
Attitude → Willingness to Buy	.47	.38
Trust → Willingness to Buy	.31	.56

Table1: Path Estimates for both sites

In order to build a general consensus about Egyptian attitude towards E-Commerce sites in general, the model of the two sites were combined into a single model, the integration of both site's model was done based on only including paths supported in both sites, and excluding any path that was found unsupported in any of the two sites.

Accordingly, the Hypothetical research model could be updated as illustrated in figure 2, where arrows with bold lines represents the confirmed hypotheses, while dashed lines represents the non-confirmed one.
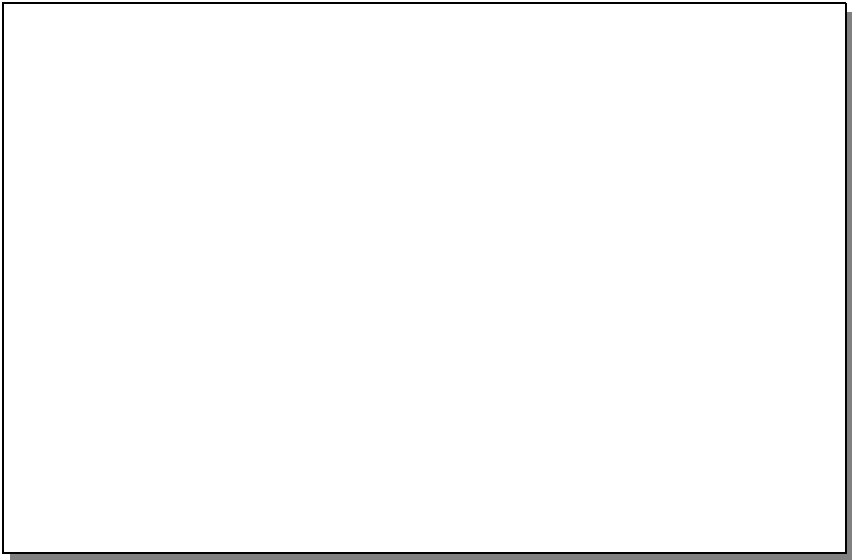

Figure2: Tested Research Model

4   Conclusion and Future Work

According to the preliminary analysis for data, some of the research hypotheses were proved while others were not. Results suggest that perceived reputation has a significant positive effect on trust (path estimate for Amazon and E-Kotob= .54 and 51 respectively); While perceived familiarity has less, but still considered, effect on trust (path estimate for Amazon and E-Kotob= .38 and 37 respectively). This confirms the research hypothesis concerning the positive effect of Internet store's perceived reputation and perceived familiarity on building on-line trust. On the other hand, contradicting with what the research hypothesised both, perceived familiarity and perceived reputation do not have any effect on neither attitude nor willingness to buy.

Confirming with other studies (e.g. Jarvenpa etal, 2000; Gefen, 2000), the

higher the level of trust, the greater the positive attitude and the willingness to buy (path estimate for Amazon and E-Kotob= .40, 69 and .31, .56 respectively). Further more, attitude has a positive direct effect on willingness to buy (path estimate for Amazon and E-Kotob= .47 and 38 respectively).

This could suggest that, considering the research target group, Egyptian Internet consumers with high perceived reputation and high perceived familiarity with an Internet store tend to have a high level of trust toward that store. Furthermore, Egyptian Internet consumers with high trust on an Internet store, tend to have a positive attitude toward that store, and show willingness to buy from the store. Additionally, the positive attitude towards an Internet store strengthens the willingness to buy, of this target group, from that store.

While the previous conclusions tend to describe how Egyptians perceive E-Commerce in general, the next phase of this research is looking on how culture affects this perception. Egypt is characterized by Hofstede (1994) as a high uncertainty avoidance culture. Members of such a culture are expected to have a low tolerance for uncertainty. Engaging in E-Commerce purchase might be seen as an example of an activity with an uncertain outcome. The outcome can become less uncertain when consumers are familiar with the E-Commerce store, or when the store is one with a good reputation. Although, the effect of store reputation also appears to be important in low uncertainty avoidance cultures such as the US and Australia (Jarvenpaa et al, 2000); Nevertheless it is possible that the effect of store reputation may prove to be relatively more important in high uncertainty avoidance cultures. The future work of this research divided the same sample into three uncertainty avoidance groups; the hypothetical model is compared, using PLS structure equation modeling tool, against these three cultural groups to investigate the effect of uncertainty avoidance cultural variable on the model.

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