WHICH “KIND” OF TRUST FOR BUYING ONLINE? AN INTERCULTURAL STUDY

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Abstract

Although there has been rapid growth in the use of the Internet around the world, many issues remain for the development of the online transactions. Many studies have shown that one of the inhibiting factors of online transactions is the lack of confidence in the seller. But, as the Internet itself is an open technology and not a familiar environment, online customers face another problem that results from the vulnerabilities of the Internet upon which e-commerce is based, and raises doubts about another type of trust: technological trust. Confidence in e-commerce request that the technical system and the partner are trustworthy.

This study analyses the effect of online trust on online buying intention. More specifically, it investigates the impact of the two types of trust, online vendor trust and technological trust on intention to buy online. Moreover, we have compared this effect for Tunisians and French and to try to explain the differences, if any, according to Hofstede’s cultural dimensions.

The study establishes the online trust as an important independent variable influencing intention to engage in online purchase transactions. The results suggest that for the French, only technological trust has an effect on intentions to buy online, even when they have previously buy online. For the Tunisians, Technological trust, vendor trust and previous online purchase influence intention to buy online. However, the results suggest that technological trust has the largest effect. The results also show that some of Hofstede’s dimensions of national culture may explain the differences between French and Tunisians.

Keywords: Online buying, Technological trust, Vendor trust, National culture.
1 INTRODUCTION

The Internet provides great advantages to online customers, facilitating choice through many virtual stores and make immediate online purchases. These advantages can also raise threats about security or privacy: Customers do not want unauthorized parties to appropriate their credit card numbers and other personal data. Many are reluctant to provide sensitive personal information to Web sites because they do not trust E-commerce security. Despite the rate of development of online transactions, consumers remain hesitant to adopt online buying (Wang et Emurian, 2005). Lack of trust is identified as one of the greatest barriers for the announced development of Internet transactions (McKnight et al. 2004). Thus, it is essential to understand how trust is created and how it evolves in the E-Commerce context throughout a customer’s purchase experience with an Internet store. However, the outlook for business-to-consumer E-commerce depends not only on consumer acceptance of Internet technologies as viable transaction means, but on consumer recognition of Web retailers as reliable merchants. The current research focuses on the impact of trust on the online buying intention. More specifically, the major focal point of the paper is to explore the relationship between trust and intention to buy online. Particularly, it considers Tunisian and French perceptions concerning technological and online vendor trust and how this relates to online buying intent. As trust is based on perceptions that depend on the values and beliefs, trust is than, culture-dependent. Another objective of the study is to examine whether the effect of the type of trust differs across French and Tunisian cultures. Specifically we try to know if the five Hofstede’s dimensions of national culture explain variance in the effect of the two types of online trust (technological and vendor) on online buying intention. This research raises three major questions:

- Which kind of trust influences more online buying intention?
- Is there any difference between the effects of technological and vendor trust on online buying intention for the French and the Tunisians?
- How cultural dimensions explain these differences?

2 CONCEPTUEL FRAMWORK

2.1 Trust in online transactions

Trust is an important element, which influences largely the behaviour in number of activities. Fukuyama (1995) asserts that the prosperous countries are the ones whose business connections base themselves on trust, as Germany, Japan or the United States. The importance of the trust in the quality of the relation between buyers and salesman was the object of numerous works in numerous fields. Trust is defined as a willingness to rely on an exchange partner in whom one has confidence (Moorman et al. 1993). It is also the confidence in the exchange partner’s reliability and integrity (Moorgan and Hunt, 1994). In E-commerce literature, trust has been defined as a set of beliefs toward an online seller (Gefen et al., 2003; McKnight et al, 2002). One believes that the other is honest, competent, benevolent and predictable in a given situation (McKnight et al. 2002).

For online transactions, trust becomes all the more important because consumers have to share personnel information and to deal often with unfamiliar online buyers. The virtual nature of the transaction, the spatial and temporal distance between the online buyer and online retailers generate uncertainty in the transaction that become risky (Kim et al. 2004 ; Pavlou, 2003). Studies on user trust in electronic commerce are well established. Several studies addressed privacy and trust in online transactions field (Milne and Boze, 1999; McKnight et al. 2002; 2004; 2005, Dinev and Hart, 2006). To date, research on trust has addressed primarily the trust in the sense of trusting beliefs on the other party (competence, benevolence, and integrity) (Mayer et al. 1995). The online transaction is different from offline transaction, because it implies a buyer, a seller and a technological interface. The trustor is consumer who is buying online, the trustee is the e-merchant. However, when buying online, the
The consumer has two kinds of concerns: concerns about the online seller and concerns about the technology itself, which become an object of trust (Odom et al. 2002; Wang and Emurian, 2005). Consequently, the online transaction’s trust is composed of technological trust and online vendor’s trust.

- **The vendor trust:** The lack of confidence in the online seller remains one of the most inhibiting factors of online transactions (Gefen, 2002; Hoffman et al. 1999; Kim et al. 2004). Vendor trust can be viewed as a set of specific beliefs which include integrity, benevolence and ability of the online vendor. Confidence creates a positive attitude towards online retailers that reduces the fear of opportunism and it mitigates concerns about disclosure of personal information (Pavlou, 2003).

- **The technological trust:** In electronic commerce, the interaction with the seller is performed through a technology interface. Confidence is then built both through the attributes of the interface as well as through the relationship with the seller (Gefen et al. 2003). And even if the consumer trusts online merchant, some risks still present because of the “hacker” attacks launched against several of the best-known Internet firms.

This view of two distinct but non-separable facets of trust in e-commerce, is consistent with the generic model of trust proposed by Tan and Thoen (2001), which also conjectures two targets of trust, party trust (trust in another party) and control trust (trust in the control mechanisms).

### 2.2 Trust and national culture

Define culture is complex. It is also a multilevel construct that could be considered at regional, national and organizational level. In our framework, we use the national culture level. According to Hofstede (1991), relationships between people in a society are affected by the values that form part of the collective programming of people's minds in that society. Given our focus on comparing two populations that have different values, national culture provides the most common explanation for nation-level differences in individual work behaviours, attitudes, and values (Parboteeah and Cullen, 2003, p.137). National culture is likely to moderate the impact of online trust on online buying intention because people from each culture have their own perception of confidence.

Hofstede identified five dimensions of culture: power distance, individualism versus collectivism, uncertainty avoidance, masculinity versus femininity and Confucian dynamism (Hofstede and Bond, 1984). Power distance indicates the extent to which a society expects and accepts the fact that power is distributed unequally, individualism indicates the extent to which interests of individual outweigh the interests of the group. The emphasis is on individual rights, freedoms and achievements. The uncertainty avoidance refers to the extent to which people feel threatened by ambiguous situations; and tolerate uncertainty, masculinity refers to the extent to which communities value caring for others, quality of life and people, while Confucian dynamism shows the long term or short term orientation of individuals and time perspective and emphasis on tradition, vs. demand for immediate results.

Despite its limitations, Hofstede’s framework of cultural dimensions is mostly cited and adopted in many cross-cultural studies. It has become widely applied in IS research. It’s presently established that cultural difference have a greater impact IT diffusion.

### 2.3 Theoretical model

The model suggests that two dependant variables are of interest and influence intention for online buying: technological trust and online vendor trust. We also consider than previous online purchase may have an influence on the buying intention. It can be consider as a control variable. Figure 1 represents the research model for the study. The model suggests that the technological trust and vendor trust, an online buyer has will influence his online buying intention.
Purchase intention: The dependant variable in our model is the online buying intention. We choose to measure the computer’s online buying intention because of the risks associated to such good and the importance of trust. Second, the construct is refers to the use of Internet in general rather than specific websites in particular (Gefen et al. 2003, Jarvenpaa et al. 1999, Pavlou and Gefen, 2004, Dinev and Hart, 2006).

Online trust: Online trust is an important intermediary variable that influences behavioural intention for buying online.

Effect of interpersonal trust: A high level of confidence in the online seller is associated with a high level of intention to use. Many studies have shown that confidence directly influences the intention to buy online (Gefen et al., 2003; Pavlou, 2003) and indirectly through the perceived risk, the perceived usefulness and perceived ease of use (Pavlou, 2003). We can hypothesize: H1: Online vendor trust influences positively intention to buy online.

Effect of technological trust: The fact that consumers think there is legal protection for the consumer will influence the intention to buy online. Hence, we hypothesize H2: Technological trust positively influences intention to buy online.

Previous purchase

3 RESEARCH METHODOLOGY

This section describes the research methodology employed to test the hypothesized model presented in figure 1. The data gathering is first described, followed by the measures developed in research instrument used for data collection.

3.1 Data

To test the hypotheses and explore cultural differences between French and Tunisians sample, an online survey approach was used to collect data from Internet user in France and in Tunisia. The participants were recruited through email invitations. The online survey generated a total of 417 valid responses (388 responses from France and 429 responses from Tunisia). The two samples are quite equivalent which minimize the effect of socio-demographics differences and to attribute the differences between the two populations to the cultural differences (Schaffer and Riordan, 2003).

3.2 Measures and instrument construction

Four constructs are measured in this study: online intention buying (intention), previous buying, technological trust and online vendor trust (vendor trust). All constructs were measured using multiple items. Respondents were asked to indicate their perceptions regarding items on 5-points Likert scales (strongly agree, agree, neutral, disagree and strongly disagree). Scale items were taken from previously validated measures in IS literature. The dependant variable of the study, the online buying intention, was measured by using a scale adapted from Moon and Kim (2001) four items measure of
IS use intention. The scale was tested previously in France and in Tunisia (Zaoui et al., 2005). The scale presented a good reliability ($\alpha = 0.87$). Previous online purchase was measure by a single question: Have you ever purchased a product on the Internet? To measure the technological trust we adopt the McKnight et al. (2004) scale of 4 items on insurance structure of the Internet. The original scale presents an $\alpha$ equal to 0.95. The scales used to measure the three dimensions’ vendor trust (benevolence, integrity and competence) are those of McKnight et al. (2002). The scale of this benevolence has an $\alpha$ of 0.91, 0.92 for integrity and 0.95 for competence. All items were based on the literature and have been already empirically tested.

As cultural dimensions vary over time, we collected data to compute actual scores for our two samples. We used The VSM94 (Values Survey Module), a recent and short version of the questionnaire used by Hofstede in his first study. It includes four questions for each of the five dimensions. All content questions are scored on five-point scales (1-2-3-4-5). Index scores are derived from the mean scores on the questions for national or regional samples of respondents.

### 4 DATA ANALYSIS

This research follows Schaffer and Riordan’s (2003) suggestion of best practices in cross-cultural studies.

#### 4.1 Cultural dimensions

We started the data analysis by computing the scores of national cultural dimensions for the two studied populations according to VSM94 method presented below.

- **PDI** = $-35m(03) + 35m(06) + 25m(14) - 20m(17) - 20$; in which m(03) is the mean score for question 03, etc.
- **IDV** = $-50m(01) + 30m(02) + 20m(04) - 25m(08) + 130$
- **MAS** = $+60m(05) - 20m(07) + 20m(15) - 70m(20) + 100$
- **UAI** = $+25m(13) + 20m(16) - 50m(18) - 15m(19) + 120$
- **LTO** = $-20m(10) + 20m(12) + 40$

Theses indices are used to explain differences if any, of the effect of the two types of trust on the online buying intention for French and Tunisians. Table 1 presents the Cultural dimensions scores for Tunisian and French sample.

<table>
<thead>
<tr>
<th>Dimension culturelle</th>
<th>2007 Tunisia</th>
<th>2007 France</th>
<th>1991 Arab countries</th>
<th>1991 France</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power distance (PDI)</td>
<td>71</td>
<td>66</td>
<td>80</td>
<td>68</td>
</tr>
<tr>
<td>Individualism versus collectivism (IDV)</td>
<td>33</td>
<td>14</td>
<td>38</td>
<td>71</td>
</tr>
<tr>
<td>Masculinity versus femininity (MAS)</td>
<td>76</td>
<td>110</td>
<td>23</td>
<td>43</td>
</tr>
<tr>
<td>Uncertainty avoidance (UAI)</td>
<td>60</td>
<td>29</td>
<td>68</td>
<td>86</td>
</tr>
<tr>
<td>Time perspective (LTO)</td>
<td>29</td>
<td>30</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Table 1 Cultural dimensions for Tunisian and French samples*

- Power distance: Power distance is lower for the French than for the Tunisians. High power distance index may imply the acceptance of interpersonal inequality and hierarchy.
- Individualism versus collectivism: Unexpectedly, Tunisians seem to be more individualist than French. Hofstede (1980) places Arab countries among the lowest on this dimension. Hofstede (1991) established that countries with high score on PDI, score low on the IDV. This exception
was also noticed with France and Belgium which combine medium power distance with strong individualism.

- Masculinity versus feminity: As expected, Tunisians present higher feminity than French.
- Uncertainty avoidance: The Tunisians present a high score in uncertainty avoidance than French. Tunisians are threatened by ambiguity and experience greater anxiety. They prefer clear rules of behaviour. French are less concerned about taking risks.
- Time orientation: The two samples present the same level of time orientation.

### 4.2 Regression

The second step of the analysis is to explore the relationship between the two types of online trust and the online buying intention. We also control the effect of previous online buying. To assess this relationship we use a regression analysis. We test the null hypothesis $H_0$ which states that a regression coefficient is Zero. The alternative hypothesis $H_1$ states that a regression coefficient differs from zero.

Before performing the regression analysis, we completed a principle components factor analysis (PCA) with Promax rotation to assess the factorial validity of the two samples. The results show a clean pattern of loadings and acceptable reliability of the fours scales in both samples.

As intention to buy online can be influenced by the previous online purchase we decide to use the stepwise method which is a combination of forward and backward methods. The principle is that independent variables are added to the equation one by one if they present a maximum significance or a minimum F-value. The first variable added is the technological trust because it has the largest correlation with the dependant variable. A regression analysis is performed with only this variable. The two other variables (online vendor trust and previous purchase) were excluded because they don’t meet the criterion for entry.

- **France**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R square</th>
<th>Adjusted R square</th>
<th>Std error of the estimation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.318</td>
<td>0.101</td>
<td>0.099</td>
<td>0.94939031</td>
</tr>
</tbody>
</table>

*Table 2: Model summary*

The analysis of variance (see table 4) shows that the significance level, the p-value, is 0.000. Applying $\alpha$ of 0.05 leads to rejection of the null hypothesis that all regression coefficients are zero. In other words, at least one regression coefficient, and the R2 as well, significantly differs from zero.

<table>
<thead>
<tr>
<th>ANOVA $^b$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

$^a$: Predictors (constant), Technological trust
Table 3: Result of the F-test

The estimated regression equation (see table 5), shows that the regression coefficient is positive. This is means that technological trust, influences positively the intention to buy online. Beta coefficient shows the importance of this kind of trust (0.318). The t-value (6.585) and the p-value (0.000) show that we can reject the null hypothesis for the independent variable and the intercept for \( \alpha = 0.05 \).

<table>
<thead>
<tr>
<th>Coefficients(^a)</th>
<th>Unstandardized coefficients</th>
<th>Standardized coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-8.5E-017</td>
<td>0.048</td>
<td>0.318</td>
<td>6.585</td>
</tr>
<tr>
<td>Technological trust</td>
<td>0.318</td>
<td>0.048</td>
<td>0.318</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.000</td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) Dependant variable: Online buying intention

Table 4: regression coefficients

- **Tunisia**

We follow the same method for the Tunisians. The first variable added is the technological trust, as it is the minimum F-value level. The second variable that meet the criterion for entry and that have the second strongest partial correlation is the online vendor trust. The third variable added is the previous online purchase. What is interesting in the stepwise method is that when variables are added, the variables already in the equation are also assessed base on the criterion for elimination.

The Model summary (see table 6) shows that there is a relationship between Online buying intention and the independent variables (vendor trust, technological trust and previous online buying), \((R = 0.323)\), even if the relation is not large \((R^2 = 0.10)\).

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R square</th>
<th>Adjusted R square</th>
<th>Std error of the estimation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0.323</td>
<td>0.104</td>
<td>0.098</td>
<td>0.94968994</td>
</tr>
</tbody>
</table>

Table 5 Model Summary

The F-test (see table 7) shows also that the null hypothesis is rejected \((\alpha = 0.05)\).

<table>
<thead>
<tr>
<th>ANOVA(^b)</th>
<th>Model</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 (^a)</td>
<td>Regression</td>
<td>44.688</td>
<td>3</td>
<td>14.896</td>
<td>16.516</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>383.312</td>
<td>425</td>
<td>0.902</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>428.000</td>
<td>428</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) Predictors (constant), Vendor trust, Technological trust, Previous online purchase

\(^b\) Dependant variable: Online buying intention

Table 6 Result of the F-test
The regression coefficients show that intention to buy online is only explained by the technological trust.

<table>
<thead>
<tr>
<th>Model</th>
<th>Coefficients</th>
<th>Unstandardized coefficients</th>
<th>Standardized coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-0.419</td>
<td>0.152</td>
<td>0.157</td>
<td>-2.761</td>
<td>0.006</td>
</tr>
<tr>
<td>Technological trust</td>
<td>0.180</td>
<td>0.048</td>
<td>0.180</td>
<td>3.718</td>
<td>0.000</td>
</tr>
<tr>
<td>Vendor trust</td>
<td>0.157</td>
<td>0.048</td>
<td>0.157</td>
<td>3.248</td>
<td>0.001</td>
</tr>
<tr>
<td>Previous online purchase</td>
<td>0.271</td>
<td>0.094</td>
<td>0.137</td>
<td>2.896</td>
<td>0.004</td>
</tr>
</tbody>
</table>

* Dependent variable: Online buying intention

Table 7: regression coefficients

5 RESAERCH FINDING AND DISCUSSION

The focus of the study is to determine which type of trust, vendor trust or technological trust explains better online buying intents. In addition, we looked whether there is a difference between Tunisians and French regarding the type of trust that lead to intention to buy online.

5.1 Effect of online trust on online buying intention

As expected, online trust influences intention to buy online. However, results are quite different for French and Tunisians. The study found that while both technological trust and vendor trust were predictors of online buying intention for Tunisians, only the technological trust was found to be a determinant of intention to buy online for French. On the other hand, previous online buying influences the intention as well. Nonetheless, in both culture, technological trust is a primary determinant of online intention. H1 is supported for Tunisians, but rejected for French, while H2 is supported for the both samples. These results may suggest that technological trust is become more crucial in online transactions than vendor trust for both samples. However, the effect of online trust on intention is quite different among French and Tunisians.

5.2 Cultural differences

To explain the differences between the French and the Tunisian, we appealed to the Hofstede’s dimensions of culture. Doney and colleagues (1998) assume that each of the cultural dimensions can facilitate or inhibit the processes of trust development.

- Individualism versus collectivism

French sample is more collectivist than the Tunisian sample. French respondent are then, more disposed to trust online vendors than do Tunisians. Another explanation is in the fact that the French purchasers have more experience in online purchase than Tunisian do. As consumers tend to stick to what they know, they buy from the same online vendor toward which they develop

- Uncertainty avoidance

As the uncertainty avoidance refers to threats of uncertain or unknown situations, and as online buying, is driven by uncertainty, the Tunisians seem to have less confidence on online vendor than do the French. On the other hand, societies with less uncertainty avoidance tend to relay on predictability
to build trust. It’s also admitted that in high uncertainty avoidance culture, people feel equally uncomfortable without the structure of a system of rules (Hofstede, 1991). Law and rules represent a way to prevent uncertainty. The Tunisians are then looking, like the French, for what can reduce the uncertainty of the interface, but also they are aware for signs which ensure the confidence in the online vendor. According to Hofstede (1997), security is likely to prevail over other needs when uncertainty avoidance is strong.

- Masculinity versus feminity

Masculine cultures adopt more easily information technologies than feminine culture. What is surprising is that the Tunisian sample is supposed to be more feminine than French one. It’s supposed to be more permissive (1991).

6 CONCLUSION

Online buying is of major interest in today’s world. Developing consumer trust in Web retailers is critical for the continued growth of B2C e-commerce. The successful development of electronic commerce depends largely on the confidence that people put in the online vendor as well as the technology itself. Nevertheless, technological trust is a more prominent issue. This paper has presented the findings of a comparative study which indicate that there is difference between the perception of online trust and its effect on intention to buy online between French and Tunisian samples. Additionally, national culture appears to be important factor for delineating the type of trust (online vendor or technological) that correlates with the online buying intents. Finally, our emphasis on trust does not imply that this factor is the sole determinant of online buying intents. However, many other factors (attitude, innovativeness, complexity, etc.), are expected to influence intention.

Hence, the present research presents some limitations. First, the online buying intention rather than the actual buying behaviours were measured. Further, caution should be used in extending the results, because respondents were not randomly selected from the overall French or Tunisian internet users. Lastly, the model presented here accounts for only one third (0.32) of the total variance of online buying intention. More variables need to be identified in future research for a better understanding of online buying behaviour.

The findings have practical implications for both online vendors and governments. Even if online vendor has no absolute control over the Internet infrastructure, online vendors can affect trust in infrastructure by implementing and managing trustworthy e-commerce websites. Facilitating encrypted transactions, installing firewall, utilizing authentication mechanisms, and ensuring privacy seals and disclosures that can provide significant and credible signals, like certificates or seals of approval, to assure consumer that the site is reliable.

Governments involved with the development of E-commerce should be aware of the importance of the technological trust, and should launch public mass campaign to inform people of the safety measures and how to make safe online transactions. Governmental institutions can also support and coach online companies with training. Clear rules and laws can also encourage internet users to buy online because they feel secure and know that if any problem rises they can have legal remedy.
References


