

THE IMPACT OF CULTURAL DIMENSIONS ON THE PERCEIVED RISK OF ONLINE SHOPPING

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ABSTRACT. This article analyzes the influence of cultural factors on the perceived risks of buying online. To this end, we conducted a survey on a sample of Francophone African students, through an online questionnaire. In order to test the developed research model, we opted for structural equation modeling (SEM), using the Smart PLS 2.0 software. Data analysis has highlighted the importance of power distance in perceiving the risks of online buying and, on the other hand, the fact that online buying risk perception is less important in cultures where uncertainty avoidance is high. Based on these research results, marketers could adapt their marketing approaches at a local, regional or international level.

Key words: *online marketing, perceived risk, cultural values, mental accounting, privacy, financial risk*

JEL classification : M31; M10; L81

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Introduction and Review of Literature

Although online sales have experienced strong growth worldwide, their potential is still insufficiently exploited (Al-Materneh, 2016; Cases, 2002). According to Internet Live Stats, in June 2016, 49.2% of the world's population was using the Internet, while only 24.3% was buying from online stores. With regard to the online retail, statistics are not very conclusive, but all sources indicate an underutilization of its potential. Despite the many benefits of e-commerce over the traditional commerce, barriers to online shopping are preventing its growth (Zheng et al., 2012). Consumer exposure to new online sales methods and information overload on the Internet is leading to increased uncertainty for both new and experienced users (Al Kailani and Kumar, 2011, Zheng et al., 2012).

In an international context, knowing the cultural dimensions becomes a major asset (Al Kailani and Kumar, 2011). For example, Samiee (2001) argues that culture is the most important factor influencing international marketing on the Internet. This research is in line with previous work on the impact of cultural dimensions on online shopping behavior while proposing a new concept for the relationship between culture and perceived risk. The objective of the study presented here is therefore to understand the influence of cultural dimensions on the perceived risk of online shopping. This research is grounded in Hofstede's model of cultural values (1984) and in the theory of consumer risk.

Culture and the online buying behavior

According to De Mooij and Hofstede (2002), the idea that the homogenization of economic systems can lead to consumer homogeneity has not been validated by empirical studies and the effectiveness of marketing activities is determined by their adaptation to cultural values. The influence of culture on the consumer behavior and marketing practice has received varying attention over time, with renewed interest in the subject in recent years.

Throughout literature, we can identify the relationships between cultural differences and the perception of emotions, the processing of information, the categorization of stimuli, self-perception, the perception of others, the perception of the environment and aesthetic preferences,

motivations, learning, memory, attitude, influence of the reference group (Kastanakis and Voyer, 2014; De Mooij and Hofstede, 2011; De Mooij and Hofstede, 2010; Aaker and Sengupta, 2000; Han and Shavitt, 1989). Authors who have addressed the topic of cultural influences on consumer behavior discuss about the dimensions through which culture is conceptualized and operationalized. De Mooij and Hofstede (2002) show that from a fuzzy concept, culture has become a more concrete concept that can be quantified and correlated with different aspects of consumption.

The operationalization of the concept is possible thanks to the scales proposed by various authors, the Hofstede model (2001) being the most used analytical framework in marketing. This model is preferred by researchers because of the availability of scores for a large number of countries, for all its dimensions. This famous metric has been accepted and applied at both country and individual levels in cross-cultural studies (Yoo et al., 2011).

Zhu and Thatcher (2010) note that the expansion of e-commerce largely depends on the socio-cultural environment of the countries. As Van Slyke et al. (2010) point out that even if in e-commerce the behavior of the user is a global phenomenon, the acceptance level of online shopping is different from one country to another. These researchers confirm that national culture influences the intention to buy on the Internet. Moreover, according to Omar et al. (2011), to understand the online purchasing decision-making process it is important to put more emphasis on one's background (such as culture) than on the decision-making itself.

Perceived risk, trust and online buying

Recent research on the perceived risk in e-commerce highlights several dimensions that influence the intention to purchase online (Zheng et al., 2012). Understanding the causes of the under utilization of the potential of the Internet must take into account the notion of perceived risk. Perceived risk has been conceptualized from the theory of decision and the theory of value. The concept of perceived value has its foundations in the theory of perspective, developed by Kahneman

and Tversky in 1979, which replaced the utility function formulated by Von Neuman and Morgenstern in 1953, with the value function (Gupta and Kim, 2010). Through the theory of value, the authors sought to explain, from the perspective of maximizing value, the human behaviors adopted under conditions of uncertainty. In addition, in their theory, Kahneman and Tversky formulated the idea that people place greater importance on outcomes that are certain than on outcomes they consider to be only likely. This effect, known as the certainty effect, provokes consumer aversion, which determines their inclination to opt for rather small gains, at the expense of higher but probable gains. Starting from the perspective theory, approaching it in a critical way because it assumes only a one-dimensional evaluation of the results of the decision, Thaler (1985) formulated the theory of mental accounting. To explain consumer behavior, Thaler proposes to consider the losses and benefits perceived by taking a decision in relation to a reference point, not an absolute level. Moreover - and this is important for this study - Thaler shows that the loss function is more abrupt than the profit function, which implies that a consumer first of all considers the losses he will suffer when making the decision to the detriment of profits.

From the dimensions of perceived value, Barden (2013) believes that the meta-principles for consumer behavior are tangibility, the moment when the consequences of the decision manifest (immediately or later) and certainty. Increasing the perceived value involves either maximizing the certainty of the outcome of the decision, or minimizing the likelihood of a loss or risk of loss by the decision made by consumers.

Risk is a component of the perceived sacrifices in perceived value models (Gupta and Kim, 2010, Heinonen, 2004). The increase of perceived benefits, doubled the attenuation of the perception of sacrifices, and implicitly by risk perception, increases the probability of adopting the decision of purchase. Risk is the perception of uncertainty in relation to the potential negative consequences associated with a choice, the perception of the consumer that he will suffer losses as a result of the purchase or consumption of a good or a service (Volle, 1995). The notion of loss characterizes a situation in which an individual obtains a result below a point of reference, which comes from several sources: personal experience, social reference, target value, the best possible result or the

greatest regret about other alternatives (Yates and Stone, cited by Volle, 1995). Consumers perceive online shopping as riskier than offline shopping (Korgaonkar and Moschis; Donthu and Garcia, in Hassan et al., 2006, Lee and Tan, in Hsieh and Tsao, 2014, Zheng et al. 2012) because the Internet is an open, complex environment and the technology is beyond the control of the user (Rose, Khoo and Straub, in Kim et al., 2005). The perception of the risks of online purchases is generated by the Internet features, among which we can mention: i) the impossibility of touching and trying the products before the purchase; ii) problems arising from the security of the purchase; iii) confidentiality issues; iv) impersonal nature of the Internet. The perceived risks of online purchases are based on the following categories of factors: (i) consumer characteristics; (ii) the characteristics of the products and services; (iii) the characteristics of the buying situation; iv) the type of online store (Korgaonkar and Karson, 2007; Mitchel, 1999). On the other hand the perceived risk has an impact on consumer confidence (Comegys et al., 2009) which in turn plays a major role in the online purchasing process. According to Jarvenpaa et al. (1999) trust allows consumers to make transactions with merchants who are not part of their immediate network. They add that it reduces the perception of risk and facilitates the transaction. Based on literature review, Al-Matarneh (2016) and Zheng et al. (2012) have developed a summary of the dimensions for consumers perceived risk when buying online (Table 1).

Table 1. The dimensions of perceived risk in online buying

The dimensions of perceived risk in online buying	The definition and the authors who approached the subject
The risk of quality	It refers to the possibility that purchased products do not conform to the characteristics or performance expected by consumers buying in online stores. In some studies, we talk about "product risk" (Wani and Malik, 2012), while in other studies we talk about "performance risk" (Zheng, 2012).
Financial risk	It refers to the perceived likelihood of consumers losing money paid for products and other fees to enter into their possession, such as shipping costs. In some studies it is called "economic risk" (Zhang and Tan, 2012), while other studies use the term "monetary risk".

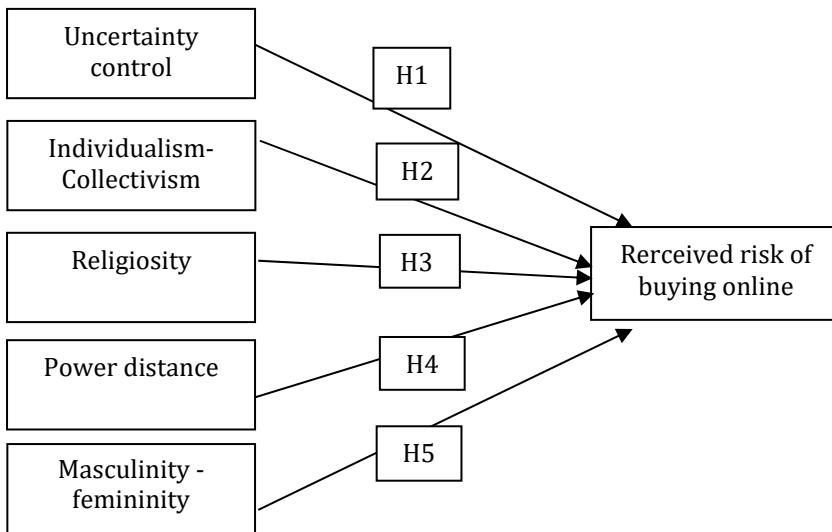
The risk of loss of privacy and confidentiality	It refers to the perception of insecurity about personal information and the use of the credit card. It is also called "security risk" and "privacy or privacy security" (Wani and Malik, 2012). It also refers to the potential collection and use of personal data with cookies and web bugs.
Social risk	It represents the potential deterioration of the consumer image possible non-acceptance or marginalization by the reference (Zheng et al., 2012); Zheng et al. (2012) call it "the risk of social norms". Zheng et al. (2012) refers to the potential loss of status in group due to the purchase of the product or service.
The psychological risk	It is the potential loss of self-esteem resulting from the frustration experienced when the consumer perceives that he has not fulfilled the purpose for which he purchased the product.
The risk of supply	It includes two dimensions: the delivery risk and the risk of loss of time, and refers to the probability of not receiving the product within the agreed timeframe or wasting time due to defects or loss of product (Zheng et al., 2012; Javadi et al. 2012). Zheng et al. (2012) also refers to the risk of loss of time due to the search for information on the defective product or because it is not delivered to the consumer within the agreed time.
The risk of losing health	It refers to potential negative effects on the health of consumers (Zhang, Tan, 2012). Some studies use the term "physiological risk" (Wani, Malik, 2012) and other studies use the term "physical risk" (Zheng et al., 2012).
The risk of the source	It is given by the credibility and reliability of the website.
The after-sales risk	It refers to the abrupt termination or the difficult relationship between the distributor and the consumer when unexpected problems occur at the product level and in the absence of a warranty.

(Source: adaptation after Al-Matarneh, 2016, p. 64; Zheng et al., 2012, p. 258)

Material and Method(s)

Conceptual model and research hypotheses

This research aims to study the influence of cultural factors on perceived risks in relation to online shopping. The explanatory model, proposed in Figure 1, presents the different concepts and research hypotheses retained.



Source: authors' construct

Figure 1. The impact of cultural dimensions on online shopping

The relationship between uncertainty control and the perceived risk of buying online

The tolerance for uncertainty and the notion of consumer perceived risk are closely related (Park et al., 2012). The work of Schimmack et al. (2002) has shown that people from Eastern cultures (where the avoidance of uncertainty is high) in order to ensure their well-being, tend to avoid risks by reducing anxiety. Instead, individuals from Western cultures will rather promote well-being by seeking to maximize pleasure. The work of Al Kailani and Kumar (2011) confirms that in cultures where the avoidance of uncertainty is high, the perceived risk of buying online is important and negatively affects the purchase intention. Also, in cultures where the perception of risk is strong, the impact on online shopping is negative. In cultures with low uncertainty avoidance individuals are more flexible and adapt more easily to new situations, their risk-taking is considered an ordinary act

(Balambo, 2013). According to Al Kailani and Kumar (2011), in cultures with strong uncertainty control, individuals try to rely on strict laws and regulations as well as on safety and security measures to reduce uncertainty. These authors have demonstrated that individuals from cultures where uncertainty control is important, will experience high levels of risk when buying online. They tend to leave less room for chance (Hofstede, 1984). Kim and Kim (2010) point out that some cultures where uncertainty avoidance is high will promote the safety of their environment with more fearful attitudes to avoid ambiguous and risky situations. They have a conservative attitude towards risk (Park et al., 2012). Moreover, in countries with low tolerance for uncertainty, online purchases are often underdeveloped (Lim et al., 2004). This leads us to try to understand the relationship between the perceived risk in online shopping and the tolerance for uncertainty among French-speaking African students, hence the first hypothesis.

H1: Individuals from cultures where uncertainty avoidance is high perceive more risks in buying online than others.

The relationship between individualism and the perceived risk of online buying

According to De Mooij (2004), the dimension of individualism vs. collectivism affects the consumer's need for risk reduction. This effect has been proved in studies related to online purchasing (Jarvenpaa et al., 1999; Kim, 2005). The work of Lim et al. (2004) has demonstrated that the aspects of individualism and collectivism influence the online shopping behavior. According to these authors, countries with an individualist culture are more likely to consume online than countries with a more collectivist culture. Park et al. (2012) highlight the relationship between perceived risk, trust and cultural differences (individualist or collectivist): individualistic cultures (such as the US) are more likely to trust Internet merchants than the more collectivist cultures (such as Korea). In addition, according to Stafford et al. (2004), consumers from an individualistic culture would use the Internet for e-commerce more than those who come from a more collectivist culture. Furthermore, Brosdahl and Almousa (2013) studied the impact of the individualistic

culture on the online buying perceived social risk. They show that this risk is low among individualistic societies. This allows us to formulate the second hypothesis.

H2: Individuals from an individualistic culture perceive less risks when buying online compared to those coming from a collectivist culture.

The relationship between religiosity and the perceived risk of online buying

Religiosity is a cultural component that has often been taken into consideration by various researchers (Bănică, 2011; Mokhlis, 2009; Moore et al., 2001). Its influence has already been demonstrated in several aspects of the purchasing behavior of individuals (Levin, 1979). Moreover, empirical studies often suggest the integration of this dimension in consumer research (Mokhlis, 2009). Religion is perceived as a true conservator of memory, that is, more than a set of principles or values (Bănică, 2011). For individuals from cultures with low religiosity, abstract representations are not accepted, on the contrary they promote rationality and reason in decision-making (Moore et al., 2001). For Siala et al. (2004) religion influences the decision-making process in consumer buying. Similarly, according to Yang et al. (2009), religiosity influences the consumers' perception of the online shopping sites. Religion can therefore act as a device to relieve anxiety (Balambo, 2013) and influence the perceived risk of new technologies. For example, a study by Braman et al. (2009) showed that the perception of risk in relationship with technology is more pronounced with conservative people with high religiosity. Bănică (2011) states that technological innovations will always present new challenges for religion. Religion is one of the cultural barriers to the adoption of e-commerce (Aleid et al., 2009) in particular because of the impact of the religious and moral ideology on the perceived risk of e-commerce. It would therefore be appropriate to study the impact of the religiosity dimension on the perceived risk of online shopping. This makes it possible to formulate the third hypothesis.

H3: Individuals with high religiosity perceive more risks to buying online than others.

The relationship between power distance and the perceived risk of online buying

Power distance within a culture represents the gap between the different hierarchical levels of a society and the degree of inequality among the population of a country (Hofstede, 2001). According to Kale and Barnes (1992), this dimension has an impact on the opportunistic behavior of individuals. On the other hand, Rothaermel et al. (2006), state that power distance impacts on the attractiveness of companies active on the web. Bajaj and Leonard (2004) add that in cultures with a high power distance, the individual will always have difficulty making purchases on the Internet. These cultures are inclined to more interpersonal and verbal communication and require more communication time, which is a barrier to buying online. In the case of online purchases, the perception of risk would therefore depend on the importance of the hierarchical distance, hence the fourth hypothesis.

H4: Individuals from cultures promoting high power distance perceive more risks to buying online than others.

The relationship between masculinity and the perceived risk of online buying

The masculinity dimension (vs. femininity) postulates that male cultures place more emphasis on tasks, assertiveness and performance, while women's cultures place more emphasis on the quality of life, support for others, the protection of the environment and discretion (Hofstede, 1988). Masculinity has a positive impact on innovation (Steenkamp et al., 1999). In masculine cultures, importance is given to prestige and status, success, pleasure and power (De Mooij, 2004). A more masculine society has a predominance of male buyers and is often more involved in e-commerce (Stafford et al. 2004). The masculinity vs. femininity dimension impacts on the consumers need for risk reduction (De Mooij, 2004). These findings are consistent with gender studies. Women perceive a higher level of risk towards online shopping than men (Garbarino and

Strahilevitz, 2004) and gender influences the consumer perception on the online shopping sites (Yang et al., 2009). Finally, other studies have shown that loyalty is rather stronger among women's cultures (Crotts and Erdman, 2000). It would be therefore appropriate to study the impact of the masculinity dimension (vs. femininity) on the perceived risk of online shopping. This makes it possible to formulate the fifth hypothesis.

H5: Individuals from masculine cultures perceive less risks to online shopping than those from feminine cultures.

Research Methodology

As shown in Figure 1, our research model incorporates five constructs that may have an impact on the perceived risk of online buying: uncertainty control, individualism / collectivism, religiosity, power distance, and masculinity / femininity. They are based on the work of:

- Hofstede (in Balambo, 2013) for measuring individualism vs. collectivism, high power distance vs. low power distance, femininity vs. masculinity, and high uncertainty control vs. low uncertainty control.
- Allport and Ross (in Schneider et al., 2011) for measuring religiosity.
- Hassan et al., (2006) for measuring the perceived risk of online buying.

Data collection involved French-speaking African university students. Previous studies on e-commerce have often used students as the basis of their samples (Comegys et al., 2009). In addition to this, we chose an Internet survey administration (through an online questionnaire). This approach makes it possible to reach a broad target of students that are geographically dispersed and that have varied frequencies of Internet usage. Finally, the online questionnaire has the advantage of being self-administered and its interactive aspect promotes the immediacy of responses. To disseminate the questionnaire, we used the list of African scholarship holders of the "EUGEN IONESCU" program (Agence Universitaire Francophone). In total we have received 137 student responses, of which 57% are female and 53% are studying in the Master programme (in various specialties). In addition, 52% of these respondents come from North of Africa.

Results and Discussions

To test the hypotheses of our research, we opted for structural equation modeling since our model contains latent variables. We also chose the PLS method because it can be applied to a small sample (Fornell and Lacker, 1981). The software used for data analysis is Smart PLS 2.0. Comparing the averages of the variables presented in the descriptive analysis (Table 2), we find that the most important risk is that relative to the product's performance (with an average of 5.25). Overall, respondents agree that it is difficult to determine product characteristics such as quality, size, color and design simply by looking at photos on the Web and not being able to feel and / or try the product before buying it online. In addition, they often fear that the product delivered does not exactly match that displayed on the screen of the computer. A second major risk is that of the source and reliability of companies that are online (with an average of 5.00). Then comes the financial risk which is in third position with an average of 4.57. The social (2.36), physical (2.66) and psychological (2.95) risks, however, are perceived as being less important. Regarding the cultural dimensions, we find that religion is the most important dimension (with an average of 5.08) compared to i) individualism (3.91), ii) weak power distance (3.29), iii) masculinity (4.21), and iv) uncertainty control (4.22).

Table 2. Descriptive statistics

Constructs / variables		Average	Ecart type	Min	Max
Risks	Financial	4.57	1.44	1	7
	Performance	5.25	1.54	1	7
	Time related	4.01	1.52	1	7
	Social	2.36	1.48	1	7
	Psychological	2.95	1.49	1	7
	Physical	2.66	1.35	1	7
	Source related	5.00	1.51	1	7
Individualism/Collectivism		3.91	0.85	1	7
Power Distance high/low		3.29	0.83	1	7
Masculinity femininity		4.21	0.66	1	7
Uncertainty control high/low		4.22	0.66	1	7
Religiosity		5.08	1.57	1	7

Source: authors' research results

Reliability and validity

Table 3 shows that all the latent variables have a composite reliability (Chin, 1998) greater than 0.6. This confirms the internal consistency reliability of our measurement model. The convergent validity of the measurements tests the correlations of the measurements with their respective construct. Items with correlations less than 0.5 must be removed. Discriminant validity indicates to what extent each construct is both unique and different from the others, using as a criterion the correlations between each pair of constructs. The variance shared by different constructs (squared correlation) must be less than the average variance extracted from each by its measures. A construct must share more variance with its measures than it shares with other constructs in the same model. Table 3 presents the inter-correlations between the constructs of our research model. The diagonal of the matrix represents the average variance for each construct. Fornell and Larcker (1981) suggest using the average variance extracted, ie the variance shared between a construct and its measures. In our model the discriminant validity has been verified (greater than 0.5).

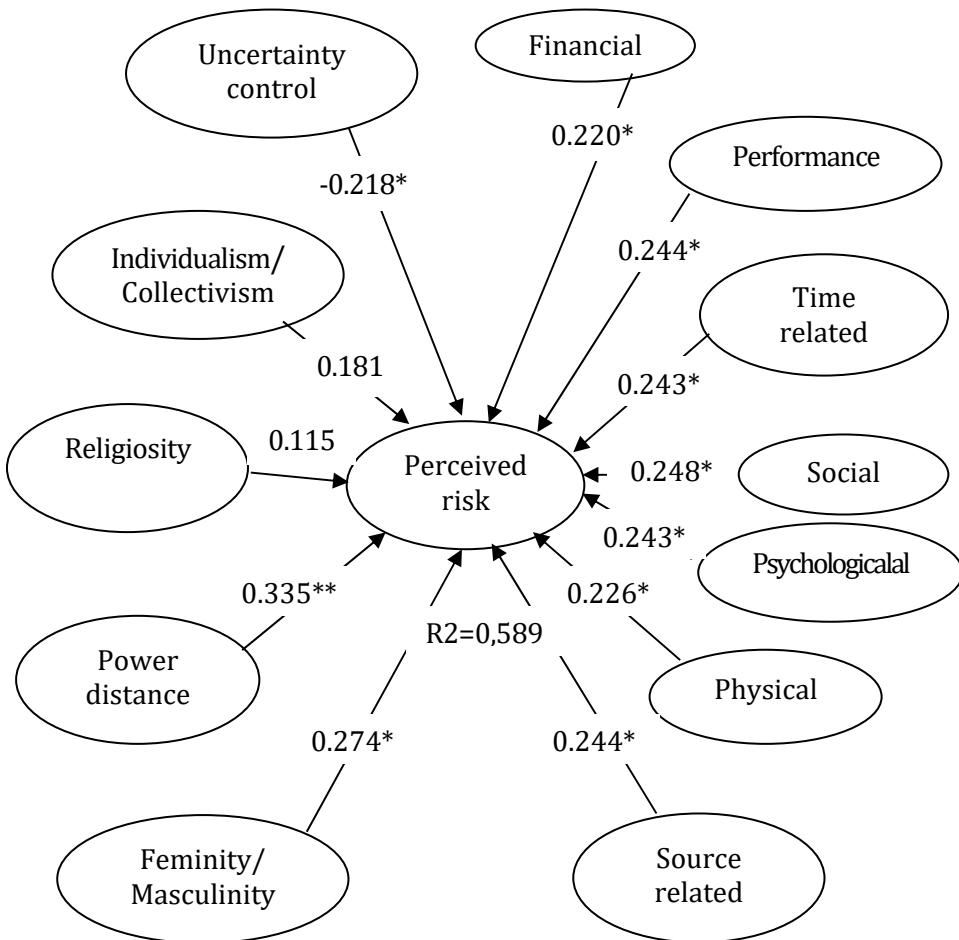
Table 3. Reliability and validity

Constructs	Composite reliability	1	2	3	4	5	6	7	8	9	10	11	12
1. Financial	.76	.72 ^a											
2. Performance	.91	.37	.89										
3. Time related	.86	.23	.48	.84									
4. Social	.94	.13	.03	.30	.92								
5. Psychological	.87	.37	.31	.40	.27	.84							
6. Physical	.83	.20	.27	.20	.40	.37	.79						
7. Source related	.90	.23	.54	.23	-.07	.22	.19	.87					
8. Individualism/ Collectivism	.66	.30	.24	.11	.18	.27	.12	.16	.58				
9. Power Distance	.79	.32	.17	.37	.33	.28	.13	.19	.34	.75			
10. Feminity/ Masculinity	.84	.30	.38	.30	.28	.30	.13	.18	.30	.48	.85		
11. Uncertainty control	.73	-.25	-.27	-.22	-.26	-.11	-.18	-.13	-.13	-.13	-.39	.70	
12. Religiosity	.94	.42	.28	.27	.09	.20	.27	.09	.10	.17	.27	-.41	.84

Note: a) Diagonal: $(\text{mean variance extracted})^{1/2} = (\sum \lambda_i^2 / n)^{1/2}$

Source: authors' research results

Figure 2 shows the results of our PLS analysis. The variance explained in connection with the perceived risk of buying online is 58.9%. This shows that our model can predict and explain the perceived risk. Regarding the degree of uncertainty control, we find that the impact on perceived risk is significant ($\gamma = -0.218$). The risk of buying online is therefore influenced by the cultural dimension of uncertainty. In addition, the correlation is negative. This allows us to deduce that students from cultures where uncertainty avoidance is high perceive less risks about online buying. This contradicts the work of Al Kailani and Kumar (2011). These students would therefore tend to leave more room for chance (Hofstede, 1984) with a less conservative attitude to the risk of buying online. There is a tendency for respondents from an individualistic culture to perceive less risks to online buying than those from a collectivist culture ($\gamma = 0.181$). It is essentially the financial risk that is affected. However, this hypothesis is not confirmed since the value of the coefficient is not significant. Hypothesis 2 is rejected. This is also the case for the dimension related to religion. The trend of a positive impact on the perceived risk ($\gamma = 0.115$), especially the financial risk, is again observed. Nevertheless, the value of the coefficient is not important enough for this relationship to be confirmed and any conclusion would, in this respect, be rather risky. Hypothesis 3 is therefore also rejected. Regarding power distance, we note that it is the cultural dimension that has the most influence on the perceived risk of buying online ($\gamma = 0.335$). The relationship is particularly important when we talk about social, financial, psychological and time-related risks. Hypothesis 4 is confirmed. People from cultures favoring power distance perceive more risks for online buying. Finally, for the 5th hypothesis, it turns out that the more we tend towards masculinity, the more we perceive risks related to online shopping. This could confirm that the dimension of masculinity vs femininity has an impact on the consumer need for risk reduction (De Mooij, 2004). However, our results contradict the research of Stafford et al. (2004), which state that a more masculine society would have a predominance of male buyers and is often more involved in electronic commerce.



*Notes: *Significant at 0.05 level*

****Significant at 0.01 level**

Source: authors' research results

Figure 2. Results of Structural Model Analysis (PLS)

Discussions and theoretical contributions

From a theoretical point of view, the present research demonstrates the influence of the cultural factors on the perceived risks of online buying. This research is based on Hofstede's model of cultural values (1984) and in the theory of consumer risk. In our research model we

have integrated five constructs that could have an impact on the perceived risk of buying online: uncertainty control, individualism / collectivism, religiosity, power distance and masculinity / femininity. We also took into account the influence of religiosity over the Internet and eight dimensions of online risk perception. Our findings show that cultural differences have to be taken into account in the early stages of planning of any global expansion project on the Internet.

Managerial contributions

Our results can have major managerial implications. Web marketers could better understand the different sources of risk perceived by the Internet user according to its culture and possibly better adapt their marketing approaches locally, regionally or internationally. Risk perception is an important factor in limiting the growth of online commerce, and reducing it requires, first of all, that marketers identify and understand its dimensions.

In the context of online shopping, Cases (2002) analyzes the relationship between the dimensions of perceived risk and the risk reduction strategies, taking into account the sources of information or sources of risk: i) the product; ii) the remote transaction; iii) the Internet; iv) the website. The author states several strategies to reduce the perception of risk when buying online, such as: the use of resources and tools for comparing offers, the search for complete information about the product, price and trading conditions, the possibility to change the product, the possibility to refund the amount spent, the existence of a local offline retailer, the security of payments, the reputation of the retailer, the possibility to contact the retailer remotely, the familiarization with the website, etc.

The importance of the dimensions of perceived risk differs from one culture to another, which is why marketers should choose risk reduction strategies that are appropriate to cultural values in each market. Store loyalty is a strategy to reduce the buying risk in collectivist cultures (Milner et al., 2004). Individuals belonging to individualistic and masculine cultures can be expected to seek additional information on product performance, on online retailers, and to evaluate products in traditional stores before they buy from online stores. Female consumers adopt loyalty to stores and brands as risk reducing strategies (Crotts and Erdman, 2000).

Some consumers prefer non-personal risk reduction strategies, while other consumers prefer personal strategies (Zheng et al., 2012). Non-personal strategies include providing detailed product information, using security solutions for payment, providing money-back guarantees, drawing on previous brand experience, and buying known brands. Personal risk reducing strategies include comments, consumer reviews, website loyalty, and the ability to communicate with the online vendor. Minimizing the risk of buying online also involves providing information to reduce uncertainty about the results of the online purchases (Zheng et al., 2012). The presentation of certain 3D images in the content of the site, details on the composition of the product and its size, and the presentation of product comparisons help reduce the perceived risks of online buying. It is recommended that sites contain clear guarantees for refunds and that they provide quality services to develop and support the positive experience of site visits. Developing customer retention strategies and tailoring customer-specific offerings are also specific components of relationship marketing that lead to risk perception reduction and increased confidence in online retailers and their websites.

Conclusions

Among the limitations of this research, we can mention the small sample size and the sample structure, composed exclusively of Francophone students who have benefited from a "Eugène Ionesco" scholarship offered by the AUF. Thus, 52% of the respondents live in countries of the Maghreb zone, so that could mean a relatively high homogeneity of the sample. Moreover, although previous studies on e-commerce have often used students as the basis for their samples and research, it would be appropriate to test our model on another non-student population too.

In addition, as noted above, the dimensions of online risk perception and perceived risk reduction strategies were analyzed against a variety of variables. Literature on the importance of risk reduction strategies based on the dominant cultural values of different markets is not well developed. For this reason, we propose, for future research, the analysis of correlations identified between online shopping risk reduction strategies and the cultural values of consumers.

The research model explores the causal relationships between five culture-related constructs and the perceived risk of online shopping. Data analysis highlights the importance of power distance. A culture that promotes power distance will have a particularly important impact on the social, financial and psychological risks when shopping online. On the other hand, we have been able to deduce that in cultures where uncertainty avoidance is high, the perception of risk when shopping online is less important. However, we have not been able to detect a significant relationship between individualism and perceived risk (it is the same for religiosity). Finally, we found that the masculinity aspect of a culture has a positive influence on the perceived risk of shopping online.

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