Research Article

Information Perceived Quality: An Analysis of the Perceived Risks Related to E-Health Information Search

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Abstract

The accessibility of health information on the Internet has allowed to be informed more easily without a waiting period of consultation with a doctor and thus avoid the expensive costs that result. This practice, although beneficial, represents certain risk related to the quality of the online information. Thus, this research attempts to provide some insights into the characteristics of the perceived information quality as a risk-reducing factor related to e-health information search. An empirical study was conducted among 250 Internet users and showed that the involved facets of the perceived risk related to e-health information search are the psychological risk and time risk. It showed, moreover, that the information perceived quality has a negative impact on the perceived risk and a positive impact on the intentions to repeat e-health information search. It showed, finally, that perceived risk has a negative impact on the intentions to repeat e-health information search.

Keywords: Perceived risk (PR), Information perceived quality (IPQ), E-health information search.

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Introduction

Using the Internet tool to search for information related to health has become a trivial matter with the huge number of web sites dealing with health. People who wish to learn about their health conditions are no longer obliged to go to the doctor's. In fact, doctors are no longer the only source of information which is now available to the public with a few clicks (Romeyer, 2012).

The current enthusiasm for this practice is primarily accounted for by cost considerations, the unavailability of medical staff, and the quick access to health information. However, this easy access to information raises a serious problem as to the credibility of the data, the impact on individual behavior, decision making and the different types of treatments (Goetzinger *et al.*, 2007). Besides, the risk inherent to a misinterpretation of the collected information is particularly important when the purpose of this practice is to replace medical advice, to confirm or to deny a medical diagnosis.

These findings led us to focus on the perceived quality of the information related to health as an element that reduces the risks inherent to a framework of e-health information search. More precisely, this consists, first, in considering the role played by the quality of online health information in reducing risk perceptions. Second, in identifying the main components of the perceived risk of the behavior related to online health information search. And third, in studying the role of the perceived quality of information in reducing risks and in developing intentions that are favorable to this type of behavior.

We will hereafter start with a presentation of the conceptual framework of the research. We will then present the research methodology and the results of the empirical study. We will conclude with a discussion of the main findings, contributions, limitations and future research tracks.

Conceptual background

Perceived Risk

The introduction of the concept of perceived risk in the field of consumer behavior has emerged with the works of Bauer (1960). The latter stipulates that consumer behavior is an example of a risk-taking behavior, a behavior to reduce risk (Ben Naoui, 2014), and an important explanatory factor in the decision-making process (Lehu, 2004).

A review of the literature related to the different definitions of the concept of perceived risk allowed us to notice that there is some divergence concerning the set of its different facets and components and its different types. However, researchers agree on integrating the notions of loss, uncertainty and the potential consequences of this loss in their definitions of perceived risk. Volle (1995), for instance, has defined perceived risk as "the perception of uncertainty related to the negative effects that are potentially associated with an alternative choice". According to Dholakia (1997), it is the set of subjective expectations of a potential loss associated with a variation of choice. It is a set of perceptions of uncertainty and unfavorable consequences associated with engagement in a given activity (Grazioli and Wang, 2001). Besides, and based on the assumption stating that any purchase decision involves the perception of a risk or an uncertainty (Barach, 1969), risk has been associated with anxiety by many researchers such as Cox (1967), Jacoby and Kaplan (1972), and Menvielle *et al.* (2010).

The integration of consequences, whether negative and / or positive, in the definitions and conceptualizations of perceived risk raises a number of questions. Indeed, some researchers only acknowledge the negative consequences in their conceptualizations of risk (Gabott, 1991; Volle, 1995; Dholakia, 1997; Grazioli and Wang, 2001; Ouzaka, 2001), others opt for both at the same time (Mayer *et al.*, 1995; Kim and Prabhakar,

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2000; Jarvenpaa *et al.*, 2000; Gefen *et al*, 2003b; Lendrevie *et al.*, 2003; Lehu, 2004).

In addition to the limitations mentioned above, several researchers, including Jacoby and Kaplan (1972), have criticized the classical risk division into two parts, and discussed the multidimensional nature of perceived overall risk. Hence, several types (or dimensions) of risk have been identified. The main among these are the following:

- Performance risk: It is related to a potential loss of the functional characteristics of the product (Brunel, 2002), a failure of the purchased item (Brunel, 2002; Laroche *et al.*, 2004), and the difficulty of judging the quality of the product (Bezes, 2012).
- Financial risk: It is a financial loss following the purchase of a product (Laroche *et al.*, 2004) that can be generated by a sense of loss of earnings caused by a cheaper selling price elsewhere (Bezes, 2012).
- Psychological risk: It is the loss of one's image of oneself or of one's principles (Murray and Schlacter, 1980; Laroche *et al.*, 2004) caused by the purchase of a product (Bezes, 2012).
- Time risk: It is a waste of time associated with the purchase decision (Lendrevie *et al.*, 2003; Laroche *et al.*, 2004.), with the failure of a purchased product (Bezes 2012, Roselius 1971 cited in Brunel, 2002).
- Social risk: It is a loss of self-esteem caused by the reaction of one's immediate environment (Murray and Schlacter, 1980; Laroche *et al.*, 2004; Bezes, 2012).
- Physical risk: It is the physical damage caused by a purchase act (Brunel, 2002; Bezes 2012).

We mention, however, that other types of risk have been identified in an electronic environment, namely the risk associated with the digital environment dealt with in the works of Ratnasingham and Pavlou (2003); Verhagen *et al.* (2004; 2006), and the information risk in the works of Laroche *et al.* (2004); Bart *et al.* (2005); Pennanen (2009).

Relying on the conceptualization of Stone and Gronhaug (1993); Laroche *et al.*, (2004), perceived risk is considered as a subjective expectation of loss that is composed of financial risk, performance risk, time risk, social risk and psychological risk. However, in a context of an online health information search, the financial risk is neither appropriate nor relevant. Besides, this facet of risk is very important in the case of online shopping (Bobitt and Dabholkar, 2001). Consequently, perceived risk is composed of the following dimensions:

- Psychological risk: It is the loss of the image one has of oneself or of one's principles (Murray & Schlacter, 1980; Laroche *et al.*, 2004) due to e-health information search.
- Time risk: It is a waste of time associated with e-health information search.
- Social risk: It is a loss of self-esteem caused by the reaction of the immediate environment (Murray and Schlacter, 1980; Laroche *et al.*, 2004; Bezes, 2012).
- Performance risk: A functional risk related to e-health information search.

Information Perceived Quality

In order to ensure the success of their businesses, professionals are compelled to minimize the various risks by adopting appropriate strategies to reassure and keep their current customers and to win new potential customers. As a matter of fact, the literature has stressed a panel of risk-reducing strategies. One of these strategies consists in building an environment of trust and loyalty, in working on reputation, image and brand awareness, and on labeling the product by legal organizations.

Researchers most frequently cite the classification of the different types of risk reducers identified by Mangold *et al.* (1987). They made a distinction between personal reducers, such as advice from a salesperson, an expert, friends, family members, or mere word-of-mouth, and impersonal reducers like commercial advertisements. In addition to these two categories and based on the works of Cases (2001), Mitchell and McGoldrick (1996);

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Menvielle *et al.* (2012) referred to a different type of reducers, involving previous experience and testing.

To reduce the perceived risks related to any situation in general, or to a purchase act in particular, consumers rely on the search for information that is provided by the various risk reducers mentioned above and which are based, in the sense of Gronhaug *et al.* (2001, cited in Brunel, 2002) on "objective, subjective and experiential knowledge". As a matter of fact, perceived risk has been likened to an "activating factor" of information search (Brunel, 2002), notably in the works of Cox (1967); Urban *et al.* (1989); Bearden and Shimp (1982); Dowling and Staelim (1994). Similarly, the search for information has been considered as a strategy to reduce perceived risk (Brunel, 2002).

In the context of e-marketing, many research works showed that these two concepts are closely related. Indeed, researchers have focused their attention on stressing the important role of the quality of online information in reducing perceived risks (examples comprise the works of Nicaulou and McKnight, 2006; Flanagin, 2007; Adjei *et al.*, 2010; Hallem *et al.*, 2013; etc.). The matter specifically amounts to identifying the criteria of information integrity and the credibility of its sources. According to Boritz (2004), for example, the quality of the perceived information is judged on its accuracy, timeliness, and completeness. In addition to these criteria, Bovee (2004) added the criteria of accessibility, clarity and comprehensibility.

In our research work, the perceived quality of the information will be considered as "a comprehensive judgment, an attitude or a reaction to the superiority of the sought information" (Ben Naoui and Zaiem, 2015). It will be assessed on two main aspects as identified by Maltz (2000), namely the relevance of the information (which refers to the timeliness, accuracy and completeness of information) and the clarity of the information (which refers to the accessibility and comprehensibility of information) (Ben Naoui and Zaiem, 2015).

The Research Hypothesis

Relying on the works of Nicaulou and McKnight (2006); Flanagin (2007); Adjei *et al.* (2010); Hallem *et al.* (2013), which showed that the perceived quality of online information has a significant and negative effect on perceived risk, we state the first research hypothesis **H.1** which stipulates that "The perceived quality of online information has a negative and significant impact on the perceived risk related to e-health information search ". The sub-hypotheses which emerged from this hypothesis state that the perceived quality of online information has a negative and significant impact on each type of perceived risk identified in a framework of e-health information search:

H.1(1): "The perceived quality of online information has a negative and significant impact on the time risk related to e-health information search ".

H.1(2): "The perceived quality of online information has a negative and significant impact on the psychological risk related to e-health information search ".

H.1(3): "The perceived quality of online information has a negative and significant impact on the social risk related to e-health information search ".

H.1(4): "The perceived quality of online information has a negative and significant impact on the performance risk related to e-health information search ".

Previous research works have largely emphasized the important role of the perceived quality of online information in the development of favorable intentions, attitudes and behaviors (Nicaulou and McKnight, 2006). Indeed, Lee *et al.* (2009) studied the effect of the information seekers' motivations on e-health information quality. Their empirical results have identified the motivations to search e-health information and have confirmed that there is a significant relationship among the information perceived quality, the satisfaction and the intention to repeat searches for e-health information. Besides,

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Yaşin and Özen (2011) showed that the perceived benefits, the perceived quality and the reliability of e-health information affect the intention to repeat e-health information search.

Hence, the second hypothesis of this study will be worded as follows: **H.2** "The perceived quality of online information has a positive and significant impact on the intention to repeat e-health information search".

Previous research works have shown that perceived risk has a negative influence on the intentions, attitudes and behaviors of Internet users (Jarvenpaa *et al.*, 2000; Pavlou, 2003; Nicoulau and McKnight, 2006; Chang and Chen, 2008; Hallem *et al.*, 2013). This will allow us to state our third hypothesis **H.3:** "Perceived risk has a negative and significant impact on the intention to repeat e-health information search".
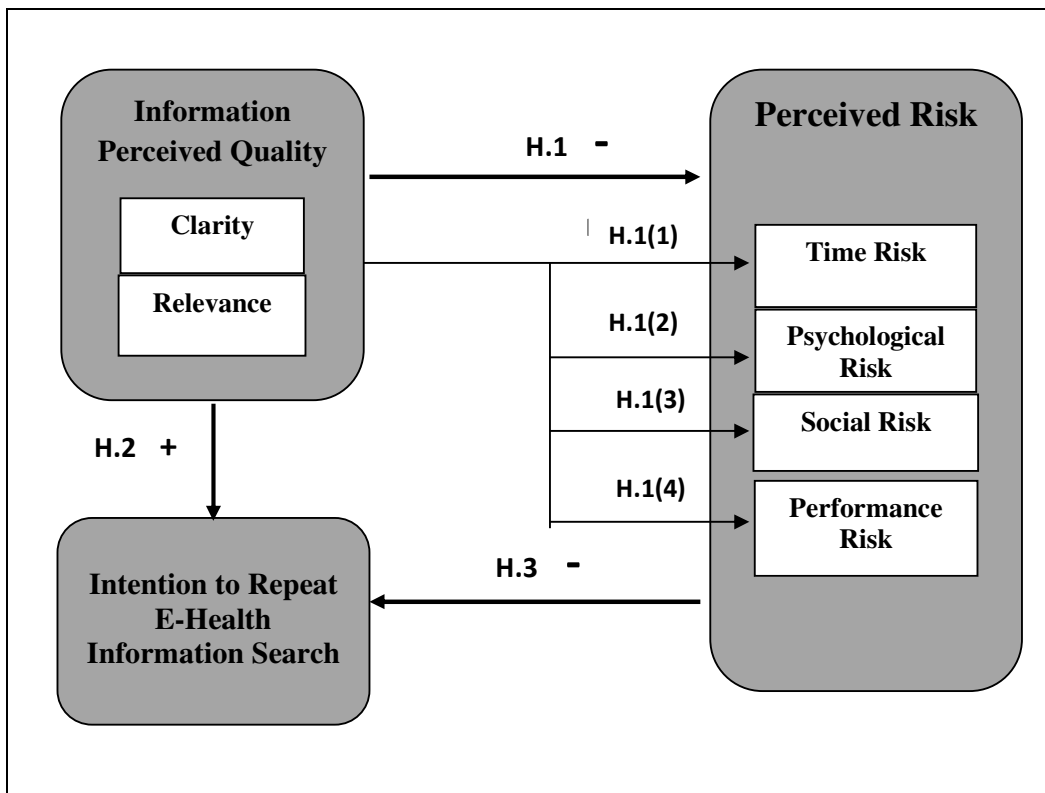

Figure 1: Conceptual framework

Methodology

We conducted an online survey. In the message sent to the participants, we kindly required health professionals not to participate.

The online survey has three main parts. The first part includes questions about the gender, the age, the level of education and profession of the respondent and its past experiences with e-health information search. It also includes questions about the

main reasons and motivations for respondents to learn about their health and well-being on the Internet, about the different types of the searched information and diseases, and, finally, about the different sources of the consulted information.

The second part is dedicated to the measure of the perceived risk related to e-health information search. Hence, we adapted the conceptualization of Stone and Gronhaug (1993); Laroche *et al.*, (2004) in

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the context of an online health information search. The third part includes questions about information perceived quality and intentions to repeat e-health information search. We used the two-dimensional scale of Maltz (2000) as a measure of the information perceived quality. We equally measured the intention to repeat the online search for health information by the scale of Rundle-Thiele (2005, cited in Goetzinger *et al.*, 2007).

We finally collected 250 filled-in questionnaires from Internet users seeking information about their health status and/or well-being, or from people who are already suffering from a disease and who want to learn and gather additional information other than what their doctors told them (see Appendix 2, table 4).

Empirical Study

In order to validate the measurement scales, we used, first, an exploratory factor analysis (EFA), and then, a confirmatory factor analysis (CFA) through the structural equations method (SEM). To estimate the variables, we used the maximum likelihood method (ML) that requires the respect of the multi-normality. However, this condition has not been verified in our case. Consequently and in order to correct this problem, we used solutions recommended by Akrout (2010).

The reliability at an exploratory level was checked with the Cronbach's Alpha index. The reliability at a confirmatory level was verified with the Rhô of Jöreskog index. Their values should be superior to the 0.6 threshold set by Bagozzi and Yi (1988, cited in Akrout, 2010). And in order to verify the convergent and discriminant validity, we used the Fornell and Larker (1981) approach. Indeed, the values of convergent validity indices should be superior to the 0.5 threshold advocated by Roussel *et al.* (2002), and finally values of extracted variances should be higher than the square of the correlation between the dimensions of the concept.

Reliability and validity of the perceived risk measurement scale

The results of an exploratory factor analysis (EFA) with principal components analysis (varimax rotation), conducted on the perceived risk measurement scale, led us to conclude that the scale of perceived risk has a four-dimensional factorial structure. The Cronbach's alpha index superior to 0.8 (Evrard *et al.*, 2003) and show a good internal consistency of the scale.

Table 1: The EFA results of the perceived risk measurement scale

Items		Quality of representation	Factor loadings			
			Time Risk (RT)	Social Risk (RS)	Psychological Risk (RP)	Performance Risk (RPer)
RT1		0,704	0.807			
RT2		0,835	0.907			
RT3		0,664	0.795			
RS1		0,911		0.951		
RS2		0,906		0.949		
RP1		0,779			0.869	
RP2		0,851			0.903	
RP3		0,753			0.846	
RPer1		0.790				0.836
RPer2		0.739				0.826
RPer3		0.838				0.907
(λ)			2.384	2.202	1.817	1.918
Percentage of variance extracted			29.806	27.522	22.707	21.613

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Reliability (Cronbach's Alpha)	0.815	0.897	0.871	0.857
KMO = 0,683 ; Test of sphericity of Bartlett = 0,000				

In addition to the EFA, we conducted a CFA to verify the quality of fit of the measurement model of perceived risk and to check its good reliability and validity. The results of a first CFA showed that the contributions of the social risk and the performance risk have no significant effect on the perceived risk (CR = 1.576, p = 0.117, SMC = 0.003 and CR = 1.769, p = 0.137, SMC = 0.005). Therefore, the perceived risk involved in e-health information search is a two-dimensional concept consisting of the psychological risk (the potential loss of the image of oneself or of one's principles (Murray and Schlacter, 1980; Laroche *et al.*, 2004) due to e-health information search) and the time risk (a waste of time associated with e-health information search).

A second CFA was achieved without these dimensions. Results show that the data normality hypothesis was not tested (the Mardia index = 15.053> 3). To overcome this problem, we started by eliminating observations with the highest Mahalanobis distances. As we reached no satisfying results, we turned to the procedure of Bollen Stine Bootstrap by comparing the difference between the probability of chi-square model without bootstrap and the one with bootstrap which was insignificant.

In addition and in order to check the stability of the data, we compared the values of the parameters reached through the ML method to those reached with the bootstrap method (N = 250). The difference between the average of factor weights calculated by bootstrap and that of factor weights calculated without bootstrap was slight (below 0.01). Thus, the results interpreted are the ones provided by the ML method.

The measurement model of the perceived risk presents satisfactory fit indices, as shown in Table 2. In addition, the scale is reliable with values of the Rhô of Jöreskog equal to 0.823 for the time risk and equal to 0.873 for the psychological risk. The Rhô values of the convergent validity are equal to 0.610 for the time risk and equal to 0.698 for the psychological risk. And finally, the values of extracted variances are higher than the square of the correlation (0.356) between the two dimensions. This confirms the discriminating validity of the measurement scale of perceived risk.

Table 2: The perceived risk model fit indices

Chi-Square	GFI	AGFI	RMR	RMSEA	NFI	CFI	TLI
1.877	0.979	0.946	0.052	0.063	0.976	0.989	0.979

Reliability and validity of the information perceived quality measurement scale

To check the psychometric properties of the measurement scale of information perceived quality, we followed the same approach used previously. The EFA results, summarized in tables 4, show a two-dimensional structure of the scale with acceptable values of the Cronbach's Alpha.

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Table 3: The EFA results of the information perceived quality measurement scale.

Items	Quality of representation	Factor loadings	
		Information relevance	Information clarity
PI1	0,657	0,785	
PI2	0,556	0,733	
PI3	0,591	0,750	
CI1	0,666		0,813
CI2	0,640		0,759
CI3	0,620		0,754
(λ)		1,893	1,838
Percentage of variance extracted		31,548	30,635
Reliability (Cronbach's Alpha)		0,766	0,712
KMO = 0,766 ; Test of sphericity of Bartlett = 0,000			

In addition to the EFA, we conducted a CFA to verify the quality of fit of the measurement model of information perceived quality and to check its good reliability and validity. The CFA results reveal a violation of the data normality assumption (the Mardia index is superior to 3). To make up for this problem, we followed the same approach used previously.

The violation of normal distribution did not have any effect on the results because the difference between the probabilities of the model's Chi-square without bootstrap and its probability with bootstrap was below 0.01. Besides, we interpret the results reached through the ML method because the difference between the estimated values of the parameters of the ML method to those of the bootstrap method was insignificant.

Reliability and validity of the intention to repeat E-health information search measurement scale

An EFA conducted on the scale of the intention to repeat E-health information search led us to conclude that the scale has a one-dimensional factor structure. The Cronbach's Alpha (0.980) reveals a good

The fit indices measuring the information perceived quality model are satisfactory (chi-square/dl = 3.536; GFI = 0.980, AGFI = 0.898; RMR = 0.023; RMSEA = 0.027; NFI = 0.977; CFI = 0.981; TLI = 0.944). We also checked the reliability at the confirmatory level with the Rhô of Jorekög index and the validity of each of the dimensions of information perceived quality using the approach of Fornell and Larker (1981).

The CFAs results confirm reliability at the exploratory and confirmatory level as well as convergent and discriminating validity. Indeed, the value of the Rhô of Jöreskog is equal to 0.766 for the information relevance and equal to 0.798 for the information clarity. The Rhô value of the convergent validity is equal to 0.629 for the information relevance and equal to 0.668 for the information clarity. And finally, the values of extracted variances are higher than the square of the correlation (0.464) between the two dimensions.

internal consistency of the scale. Besides, the CFAs results confirm the reliability, with a value of the Rhô of Jöreskog equal to 0.854, and the convergent validity with a value of the Rhô of the convergent validity equal to 0.695.

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Table 4: The EFA results of the intention to repeat E-health information search measurement scale.

Items	Quality of representation	Factor loadings
INTENT1	0,698	0,836
INTENT2	0,750	0,866
INTENT3	0,672	0,820
INTENT4	0,666	0,816
KMO = 0,802 ; Test of sphericity of Bartlett = 0,000		
(λ) = 2,787		
Percentage of variance extracted = 69,672		
Reliability (Cronbach's Alpha)= 0,853		

Reliability and validity of the global measurement model

In order to resolve issues related to the violation of data normality (the Mardia index exceeds 3) and to check the robustness of our model, we used the Bootstrap procedure (N = 250). As the differences between the values of the parameters estimated by the ML method and those of the bootstrapped samples were not significant, we relied on the results reached through the ML method.

The global measurement model presents satisfactory fit indices as shown in table 5. Indeed, the AGFI and NFI indices are slightly lower than 0.9. The GFI, TLI and CFI indices are above 0.9. The RMR and RMSEA indices have low values. Finally, the model meets the parsimony conditions with a Chi-square value of 1.610. We checked, also, the reliability at the confirmatory level and the convergent and discriminant validity using the approach of Fornell and Larker (1981) (see table 6 and 7).

Table 5: The global measurement model fit indices

Chi-Square	GFI	AGFI	RMR	RMSEA	NFI	CFI	TLI
1.610	0.918	0.885	0.048	0.043	0.896	0.957	0.915

Table 6: Reliability and convergent validity of the variables of the global measurement model

	Rhô de Jöreskog Pξ	Rhô de validité convergente (ρ_{vc})
Information Relevance	0.775	0.611
Information Clarity	0.713	0.654
Time Risk	0.721	0.652
Psychological Risk	0.743	0.664
Intention to repeat e-heatth information search	0.723	0.648

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Table 7: The discriminant validity of the measurement model

	1	2	3	4	5
1. Information Relevance.	**0.611**				
2. Information Clarity.	0.397	**0.654**			
3. Time Risk.	-0.116	-0.087	**0.652**		
4. Psychological Risk.	-0.044	-0.018	0.161	**0.664**	
5. Intention to repeat e-health information search.	0.302	0.185	-0.108	-0.053	**0.648**

Causal Model and Hypothesis Tests

The causal model has a satisfactory fit quality (chi-square/dl = 1.610; GFI = 0.918; AGFI = 0.885; RMR = 0.048; RMSEA = 0.043; NFI = 0.896; CFI = 0.957; TLI = 0.915). To test and validate the research hypothesis, we used the Structural Equations Method. The results of the causal links between variables are summarized in Table 8. Structural links are significant at the 5% threshold, and the absolute values of the Student tests are above 1.96. This allowed us to validate the research hypothesis H.1, H.2, H.3, H.1(1) and H.1(2). The hypothess H.1(3) and H.1(4) are not validated because the contributions of social risk and performance risk have no

significant effect on perceived risk and therefore, they aren't considered as facets of perceived risk in the case of e-health information search.

Hence, the information perceived quality has a significant and negative impact on the perceived risk and a significant and positive impact on the intentions to repeat e-health information search. Moreover, perceived risk has a negative impact on the intentions to repeat e-health information search. Finally, the information perceived quality has a significant and negative impact on both facets of perceived risk as identified in a framework of e-health information search, i.e. time risk and psychological risk.

Table 8: The research hypothesis tests

Causal links		CR	P	Conclusion
Perceived risk	← Information perceived quality	-3.643	0.000*	H.1 is validated.
Intention	← Information perceived quality	3.985	0.000*	H.2 is validated.
Intention	← Perceived risk	-3.334	0.003*	H.3 is validated.
Time Risk	← Information perceived quality	-3.840	0.000*	H.1(1) is validated.
Psychological Risk	← Information perceived quality	-3.069	0.002*	H.1(2) is validated.

Results and Discussions

Throughout this research, we tried to answer three main objectives. First, we tried to identify the different facets of the overall perceived risk involved in a

framework of e-health information search. Second, we examined the role of information perceived quality in reducing different facets of risk as identified in a framework of e-health information search. Third, we assessed the impact of the information perceived quality and that of

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perceived risk on the intention to repeat e-health information search.

To reach these objectives, we conducted an empirical study using an online questionnaire. We targeted Internet users who are seeking information about their health status and/or well-being by inviting them on a social network and by sending e-mails relying on our address books and those of our friends and relatives.

Relying on the conceptualization of Gronhaug and Stone (1993); Laroche et al. (2004), we showed, through empirical results, that the overall perceived risk related to e-health information search consists of time risk and psychological risk. The former refers to a possible loss of time associated with an act of e-health information search. The latter is a potential loss of self-image caused by this act.

The empirical results revealed that the information perceived quality can reduce the levels of perceived risks related to e-health information search. It can precisely reduce the risks related to a loss of time and loss of self-esteem caused by e-health information search. As a matter of fact, previous literature has always associated risk reduction with search for information (Dowling and Staelim, 1994) and several studies proved that the quality of information online has a negative impact on perceived risks, as shown, for instance, in the works of Nicaulou and McKnight (2006); Flanagin (2007); Adjei et al. (2010); Hallem et al. (2013).

Moreover, it turned out that the intention to repeat e-health information search is accounted for positively by the perceived quality of information related to health and is explained negatively by perceived risk. Thus, a high level of information perceived quality favors the development of positive attitudes and behavior towards the use of the Internet tool in the search for information on health and/or well-being. These results converge with those in the literature, notably the works of Nicaulou and McKnight (2006). Similarly, a high level of perceived risk has a negative impact on the intentions, attitudes and behaviors of Internet users. These results are in agreement with the works of Pavlou (2003); Nicoulau and McKnight (2006); Chang and Chen (2008); Hallem et al. (2013).

Contributions, limitations and Future Research

The main theoretical contribution of our research is to identify the major components of perceived risk related to conducting online research to get health information. It is also the investigation of the role of perceived quality of information in reducing risk and developing intentions that are favorable to this type of behavior.

Identifying the aspects of the perceived risk associated with this practice is interesting as it will probably influence the actions and marketing strategies adopted by the designers of health websites and healthcare professionals working online. Indeed, professionals must give importance to the psychological and temporal aspects of risk in order to take the necessary measures to minimize uncertainties and reassure Internet users seeking health information online. Consequently, websites must be designed according to the logic of Internet users who feel anxious about the potential waste of time and loss of their images and principles resulting from e-health information search.

In this case, professionals must act on the technical aspects of the site as well as on its content. This amounts to developing tools and mechanisms to facilitate navigation on the site and to providing friendly access to information. As for the content of the site, it must be treated in a way to make it attractive, rich, varied, understandable and regularly updated. Thus, the dilemma is about how to provide balance between the completeness, accuracy and comprehensibility of the information on one side, and the timeliness, clarity and accessibility of this information, on the other hand.

Our research has some limitations related to the conceptualization of the perceived quality of information that has not taken

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into consideration the effect of the credibility of the source. Indeed, we measured the IPQ according to its relevance and clarity, while in reality, the credibility of the source of information is an important indicator of the relevance of this information. It would have been interesting to include this element in the overall judgment of the information quality.

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Appendix

Appendix 1: Measurement scale

Dimensions		Items
Information relevance	PI1	The online health information communicated important details about health.
	PI2	The online health information provided the data necessary to estimate my health status
	PI3	The online health information provided relevant information
Information Clarity	CI1	It is easy to follow the online health information
	CI2	The concepts and language used by the online health information made sense to me
	CI3	The online health information is presented clearly

5 likert-type scale

Dimensions		Items
Time Risk	RT1	The online health information search could lead to an inefficient use of my time.
	RT2	The online health information search could involve important time losses.
	RT3	Time devoted to the online health information search concerns me, because it could create even more time pressures on me that I don't.

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	RS1	I think I would be held in higher esteem by my friend if I searched for information about my health on the Internet.
Social Risk	RS2	I think I would be held in higher esteem by my family if I searched for information about my health on the Internet.
Psychological Risk	RP1	The thought that I used the Internet tool to search for information about my health gives me a feeling of unwanted anxiety.
	RP2	The thought that I used the Internet tool to search for information about my health makes me feel psychologically uncomfortable.
	RP3	The thought that I used the Internet tool to search for information about my health causes me to experience unnecessary tension.
Performance risk	RPer1	If I were to find out about my health in the next 12 months by using the Internet tool, I would become concerned that the information collected will not provide the level of benefits that I would expect.
	RPer2	As I am soon considering the search of online health information soon, I worry about whether it will really perform as it is supposed to.
	RPer3	The thought that I used the Internet tool to search for information about my health causes me to be concerned about how really reliable that information will be.
5 likert-type scale		

	Items
INTENT1	How likely are you to get more information from the online health information?
INTENT2	How likely are you to use the online health information for most of your needs?
INTENT3	How likely are you to choose the online health information the next time you have a similar health problem?
INTENT4	How likely are you to use the online health information for other health information you may require?
1: Very unlikely / 5: Very likely.	

Appendix 2

Table 4: Sample Description

Genre	Man = 43%
	Women = 57%
Age	Under 25 years old = 19%
	Between 26 and 35 years old =24%

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	Between 36 and 45 years old = 22%
	Between 46 and 60 years old = 19%
	More than 60 years old = 16%
Educational level	Primary = 25 % Secondary = 30% Superior = 45%
Familiarity with e-health information search (Bressolles, 2006)	Since less than 2 years = 41% Since more than 2 years = 59%
Reasons and motivation for e-health information search	Get information about the well-being. Get information about a serious disease and its treatments. Get information about a benign disease and its treatments. Get information about a rare disease and its treatments. To self-diagnose. Get additional information to those provided by the doctor.
Diseases types	Dental problems; Diabetes; Arterial pressure; Menopause ; Pregnancy and contraception ; Psychological and sexual problems; Education of children and adolescents ; baby-care ; Nutrition ; Beauty and well-being ; Cosmetic surgery ; Allergy and Asthma ; Cancer.
Sources of the consulted information.	Medical websites. Health websites developed by health professionals. Health magazines. The website of Public health organizations.