A Cognitive Map of People's Online Risk Perceptions and Attitudes: An Empirical Study

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Abstract

This research studied online risk perceptions under the well known psychometric paradigm. We developed a taxonomy of risks appropriate for e-commerce along with variables to characterize risks and understand risk perceptions. A pilot study with 153 subjects was used to collect data on which factor analysis was conducted to identify online risk dimensions and produce a factor space diagram. This diagram represents a "cognitive map" of people's online risk perceptions and attitudes. Results suggested that subjects distinguish risks using four dimensions: direness of consequences, ability to control or avoid risks, observability/immediacy of risk consequences, and unfamiliarity of risks. A larger study is underway based on the results of the pilot study.

The findings of this research study help researchers to understand and predict people's reaction to risks posed by online hazards. In addition, this study attempted to transfer a proven and popular methodology of risk perception research, the psychometric paradigm, to a new domain, e-commerce. Moreover, this study added empirical data regarding online risk perceptions to the existing body of the relevant academic research.

1. Introduction

Electronic commerce has created significant benefits, but has also increased the likelihood or negative consequences of some risks that already exist in the offline environment and created some risks that are completely new. Understanding people's perceptions of and attitudes towards online risks is therefore, important for e-commerce.

People mentally organize information, attitudes, and images about an environment into so-called "cognitive maps." A cognitive map captures quantified representations of people's risk attitudes and perceptions. Although cognitive maps vary from person to person, a common cognitive map for the entire targeted population may be uncovered by utilizing a sample that represents the target audience. The problem is that no cognitive maps of online consumers' attitudes and perceptions related to online risks have yet been captured. As a consequence, it is difficult to understand and predict people's reactions to risk posed by online hazards. Therefore, this research initiative studied online risk perceptions and attempted to uncover a cognitive map of online consumers' online risk perceptions and attitudes. The proposed cognitive map aids researchers in understanding and predicting consumers' responses to risks posed by online hazards. This research utilized a well-known technique used in risk perception studies – the psychometric paradigm.

The goal of this research was accomplished by composing a master list of online hazards, measuring perceived risk associated with these hazards, composing a master list of online risk characteristics, determining online risk dimensions, and revealing a position of each online hazard in the factor space.

2. Literature Review

Historically, risk perception was studied using either a "revealed preference" method or an "expressed preference" method. Starr [40] proposed an approach for studying risk perceptions using the "revealed preference" method. Under the revealed preference approach, one assumes that observed behavior (e.g., choices among risky options made by people) reflect people's preferences. Starr assumed that an equilibrium between risks and benefits has been reached overtime by trial and error method. As a result, one can use historical data to define acceptable levels of risks associated with new hazards as acceptable levels of risks associated with hazards that have similar benefits to society. Fischoff et al. [10] noted that Starr's approach is suitable when dealing with public behavior and not attitudes. However, this advantage is tainted

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with numerous shortcomings. First of all, Starr believed that past behavior is indicative of future behavior. Secondly, this approach is unable to differentiate between acceptable levels of risk and other levels that might be more beneficial to society. Third, Starr's approach implies that information is fully available to people and, more importantly, it can be optimally used. Finally, the quantitative part of Starr's approach is very sensitive to the manner in which risk and benefits are computed from historical data. In contrast, the psychometric paradigm utilizes the "expressed preference" method, the approach that employs direct questioning of people regarding their attitudes towards risks and benefits associated with various activities. The psychometric paradigm captures values that reflect present attitudes rather than past preferences. In addition, there is a high level of correlation between attitudes captured in surveys and behavior [10].

Existing IS research typically views perceived risk as part of other constructs, effects of other elements on perceived risk, or effects of perceived risk on other elements and activities. For example, Belanger and Carter [1], Cheung and Lee [3], Corritore et al. [4], and Jarvenpaa and Tractinsky [18] studied perceived risk as part of a trust construct. Featherman and Pavlou [5] and Kanungo and Jain [19] studied perceived risk in the context of a technology acceptance model. Teo and Young [41] studied perceived risk as part of the consumer decision model. Featherman and Wells [7] and Featherman, Valacich, and Wells [6] studied the impact of artificiality on perceived risk. Ha [14] studied the effect of consumer information processing on consumers' perception of risks during the pre-purchase stage. Kim and Prabhakar [21] studied the role of trust and risk in e-banking. McKnight et al. [27] studied the impact of trust and distrust on perceived risk. Miyazaki and Fernandez [28] studied perceived risk related to privacy and security and its effect on the shopping activity. Salam et al. [31] studied factors that reduce risk perceptions. Verhagen and Tan [44] studied effects of trust and risk on purchasing activity in a C2C environment. Our research, however, studied risk per se, using the psychometric approach.

A large number of studies have used the psychometric approach in studying risk perceptions across various risky domains such as health, finance, naturally occurring hazards, technology etc. Examples of studies include Fischhoff et al. [10], Slovic et al. [36, 37, 38], von Winterfeldt et al. [46], Gardner et al [11], Slovic [35], Savage [32], Sparks and Shepherd [39], McDaniels, et al [26], Fife-Schaw and Rowe [8], Marris et al. [24, 25], Sjoberg [34], Towsend et al [42], Siegrist et al [33] and Willis et al. [45]. These studies suggested that the psychometric paradigm is an effective approach to studying perceived risk. In addition, these research initiatives studied risk per se. However, these studies were limited to offline risks that are very different from online risks. Our research also utilized the psychometric approach to study risk perceptions per se. However, our study is conducted in the context of online risks.

Studies conduced by Fischhoff et al. [10] and Slovic et al. [36, 37] were used as a model for this research with regard to evaluations of perceived risk of hazards, acceptability of their current risk level, characterization of their risk based on risk dimensions, and construction of a factor space diagram. Fischhoff et al. [10] evaluated 30 technologies and activities in terms of their perceived benefit to society, perceived risk, acceptability of their current risk level, and characterizing their risk based on a set of nine risk characteristics. Due to the fact that technology has gone through tremendous changes since Fischhoff et al. [10] conducted their study, the results of their study became obsolete. However, the methodology utilized by Fischhoff et al. [10] has been proven to be effective in risk perception studies as per numerous subsequent research initiatives. When evaluating technologies and activities with regard to their perceived risk and benefit to society, the participants were instructed to consider the risk of dying that may result from each technology or activity and to think of all possible benefits that are associated with each technology or activity. Then the participants assigned numerical values to each technology or activity that represented the risk and benefit levels, with 10 being the least risky and the least beneficial technology or activity. When evaluating technologies and activities with regard to acceptability of their current risk level, the participants were instructed to indicate a risk adjustment factor. The participants specified the number of times each technology or activity could be riskier, safer, or whether its current risk level is acceptable without any adjustments in its risk level. Finally, when evaluating technologies and activities with regard to their position on nine risk dimensions, the participants were instructed to rate each technology or activity using nine 7-point Likert scales. The

nine dimensions included: voluntariness of risk, immediacy of effect, knowledge about risk to exposed individuals, knowledge about risk to science, control over risk, newness, chronic-catastrophic effect, common-dread effect, and severity of consequences. Fischhoff et al. [10] used means to describe perceived benefit and risk data, calculate levels of acceptable risk, describe risk adjustment factors, and perform a factor analysis on participants' ratings of each technology or activity on a set of nine risk characteristics. Similar approach was adopted in studies conducted by Slovic et al. [36, 37].

Lim [23], Nyshadham and Ugbaja [29], and Vaidyanathan and Devaraj [43] also studied risk per se. Lim [23] identified sources of perceived risk in a B2C environment. However, the author incorporated existing dimensions widely discussed in the past research initiatives into their study. Our research offered a new perspective on online risk perceptions. In addition, the scope of Lim's analysis of consumers' reactions to various online activities is limited. Nyshadham and Ugbaja [29] utilized psychometric techniques to explore consumers' organization of novel online risks in memory. The authors use similarity/dissimilarity of risk hazards to uncover the risk dimensions underlying risk judgments.. Our research also assumed that online risk dimensions are either unknown to subjects or that subjects may not have a well-developed schemata so as to respond to questions about risk characteristics. Vaidyanathan and Devaraj [43] examined risks in an online B2B environment. However, a B2B environment is very different from online shopping (B2C or C2C environments). Hence, risks in a B2B environment are different from risks in an online shopping environment. Our research investigated risk perceptions in the context of an online shopping environment.

Bhatnagar et al. [2] and Gefen et al. [12] stated that the majority of the current published literature views online risk as one-dimensional construct. However, Bhatnagar et al [2] believed that risk is a multidimensional construct. Our research also attempted to identify online risk dimensions from a multidimensional psychometric perspective.

3. Research Questions

There were two research questions addressed in this study: (a) What dimensions affect people's online risk perceptions? and (b) What is the perceived risk for each online hazard? The first research question was answered after a factor analysis was conducted on the study participants' ratings of each online hazard, using various risk characteristics scales. The results of the factor analysis identified online risk dimensions. The second research sub-question was answered after means were computed on the study participants' ratings of various online hazards in terms of their risk to consumers' well-being, focusing on financial and moral losses.

4. Methodology

Following the psychometric methodology, the study consisted of the following phases: (a) identification of online hazards, (b) definition of risk characteristics and scales, (c) ratings and determination of the perceived risk for each online hazard, (d) ratings of online hazards using scales of risk characteristics, (e) identification of e-commerce-related risk dimensions, (f) construction of the factor space diagram, which is interpreted as the cognitive map. It is important to define key terms used to describe the methodology such as hazards, risk, risk characteristics, and risk dimensions. Hazards are "threats to humans and what they value" [36]. Risk is a possibility of loss or injury that leads either directly to negative outcomes or contributes to factors that lead to the negative outcomes. Risk characteristics are attributes that identify and describe risk. Risk dimension is a set of parameters that together describe a notion of risk. In the context of this research, each risk dimension consists of one or more risk characteristics.

4.1. Online Hazards

Online hazards were identified by examining three phases of online shopping experience (pre-purchase, purchase, and post-purchase) and identifying hazards present in each phase. Based on an extensive review of existing work in IS and authors' judgment, an initial set of 40 hazards was identified. As a result of the validation process, this set was reduced to 21 online hazards (Table 1).

Table 1. Online Hazards

No	Hazard/Activity
H_1	Hidden charges/fees
H_2	Inability to establish contact with customer service

H_3	Theft of a customer's login information
H_4	Activities are being monitored on the internet
H_5	Returning products purchased online
H_6	Dealing with fake/inauthentic web site
H_7	Dealing with unknown vendor
H_8	Delayed delivery
H_9	Delivery of incorrect quantity of ordered products
H_{10}	False information published online or misrepresentation
H_{11}	Identity theft
H_{12}	Inability to physically touch, sense, or see products
H_{13}	Inability to reverse a transaction once the order has been placed
H_{14}	Misunderstanding due to the absence of human communications
H_{15}	Non-delivery of purchased products
H_{16}	Receipt of a defective product
H_{17}	Receipt of a wrong product
H_{18}	System/technology failure while transaction is being completed
H_{19}	Unauthorized use of consumers' personal data such as name, address, browsing habits, etc.
H_{20}	Unauthorized use of credit/debit cards
H_{21}	Uncertainty whether a consumer gets online bargain

4.2. Risk Characteristics and Scales

An initial list of 24 risk characteristics relevant to online risks was identified based on an extensive review of existing work in IS and authors' judgment. As a result of the validation process, this set has been reduced to 14 risk characteristics (Table 2). The most commonly used scales in related studies were a 5-point or a 7-point Likert scale. Therefore, it is appropriate to use a 7-point Likert scale for each risk characteristic in this study.

4.3. Surveys

Similarly to the approach taken by Fischhoff et al. [10] and Slovic et al. [36, 37], multiple online surveys were used to collect data to prevent overwhelming of participants and minimize fatigue-related effects. Study participants were instructed to consider risk to their well-being focusing on financial and moral losses as a consequence of each previously identified online hazard when rating their perceived risk. A scale from 1 to 7 ranging from "Not risky" to "Very risky" was used. Study participants were also asked to rate the identified online hazards using the identified scales of risk characteristics. Similarly to research performed by Fischhoff et al. [10] and Slovic et al. [36, 37] we conducted factor analysis on combined result sets from multiple surveys to identify risk dimensions (factors).

Data was collected using a panel maintained by a leading market research firm in the US. Random samples of 476 and 474 US subjects above 18 years of age were drawn from the list of 2 million subjects maintained by the firm for the perceived risk and risk characteristics surveys respectively. A total of 80 responses were received for the perceived risk survey and 73 responses for the risk characteristics surveys.

Table 2. Risk Characteristics

No	Name	Description
C_1	Attention [34]	Whether a risk associated with a particular hazard/activity received too much or too little attention
C_2	Control [16], [17], [22], [30], [35], [36]	Whether a consumer affected by a particular hazard/activity can control the severity of consequences
C_3	Dread [13], [17], [22], [30], [34], [35], [36]	The extent to which consumers dread the negative consequences of a particular hazard/activity
C_4	Ease of reduction [35], [36]	The extent to which a risk associated with a particular hazard/activity can be reduced
C_5	Hard to understand [34]	Whether a risk associated with a particular hazard/activity is hard to understand for exposed consumers
C_6	Immediacy of effect [13], [22], [34], [35], [36]	Whether consequences of a particular hazard/activity have an immediate or delayed effects

C_7	Knowledge [16], [17], [22], [34], [35], [36]	The extent to which the risk is precisely known by people exposed to this risk
C_8	Magnitude of negative consequences [30], [34]	Whether a particular hazard/activity will lead to greater consequences
C_9	Newness [13], [17], [22], [30], [35], [36]	Whether a particular risk is new and novel or old and familiar
C_{10}	Observability [30], [35], [36]	The extent to which the damage is observable
C_{11}	Societal acceptability [30]	Whether a risk associated with a particular hazard/activity is acceptable by public
C_{12}	Unfair and immoral [34]	Whether a particular hazard/activity is unfair and immoral
C_{13}	Warning [34]	Whether a particular hazard/activity is a warning that more severe damage will occur
C_{14}	Willingness to pay [30]	Whether consumers are willing to pay for risk mitigation

4.4. Reliability and Validity

Reliability of the questionnaires was assessed with regard to internal consistency. Internal consistency of risk characteristics surveys has been established by examining item-to-total and inter-item correlations. For the sample size and statistical power requirements of 0.8, item-to-total correlations should exceed 0.5 and item-to-item correlations should exceed 0.3 [15]. The computed item-to-total and item-to-item correlations suggested that internal consistency is established.

Validity was established by testing for content validity. A panel consisting of four experts has been used to establish the content validity. The panel consisted of scientists whose research interests are in the risk perceptions and electronic commerce domains. The panel members responded to an inquiry posted in the ISWorld community.

Based on the feedback provided by the panel members, some hazards were rephrased to improve their clarity. In addition, hazards that are not directly related to online shopping have been excluded. Moreover, overlapping hazards were eliminated. With regard to risk characteristics, some of them were rephrased to improve their clarity. Also, risk characteristics that are quite relevant to e-commerce domain have been eliminated..

5. Data Analysis & Results

5.1. Demographics

Participants specified the number of their online purchases within the past 6 months, average amount spent per online purchase, types of goods purchased online, average number of hours spent on the Internet per day, gender, and age. The results indicated that the majority of participants made anywhere 1-8 online purchases within the past 6 months. About one third of participants spent on average $10-30 per online purchase, and about 1 out of 5 participants spent either $31-50 or $51-$100. The most common types of purchased product were a book, a CD, or a DVD, followed by electronics and travel. About half of participants also purchased other types of products that were not listed. Every 3rd participant spent 1-2 hours per day on the Internet. Slightly fewer participants spent 3-4 or 5-6 hours browsing the Internet daily. There were a slightly higher number of females than males among the participants. Finally, over half of participants were in the 22-50 age range.

5.2. Perceived risk

Perceived risk ratings are displayed in Table 3. The top five risky online hazards were (a) identity theft, (b) unauthorized use of credit or debit cards, (c) theft of a customer's login information, (d) unauthorized use of consumers' personal data, and (e) dealing with a fake or inauthentic web site. It is interesting to note that the majority of hazards were rated high with regard to their perceived risk.

Table 3. Perceived Risk Ratings

Hazards H_i	**Perceived Risk**	
	Mean	**SD**
Identity theft	6.6	0.8
Unauthorized use of credit/debit cards	6.6	0.9
Theft of a customer's login information	6.5	0.9

Unauthorized use of consumers' personal data such as name, address, browsing habits, etc.	6.3	1.1
Dealing with fake/inauthentic web site	6.2	1.3
False information published online or misrepresentation	6.0	1.2
Non-delivery of purchased products	6.0	1.3
Dealing with unknown vendor	5.8	1.3
Activities are being monitored on the internet	5.8	1.2
Hidden charges/fees	5.7	1.4
Inability to establish contact with customer service	5.6	1.4
Receipt of a defective product	5.6	1.3
Inability to reverse a transaction once the order has been placed	5.6	1.3
Returning products purchased online	5.6	1.4
System/technology failure while transaction is being completed	5.4	1.5
Misunderstanding due to the absence of human communications	5.3	1.4
Receipt of a defective product	5.3	1.5
Uncertainty whether a consumer gets online bargain	5.0	1.6
Delayed delivery	5.0	1.4
Delivery of incorrect quantity of ordered products	5.0	1.5
Inability to physically touch, sense, or see products	4.9	1.6

5.3. Risk Dimensions

Factor analysis was performed on the collected data. Two variables ("Willingness to pay" and "Knowledge") were eliminated from the analysis due to a low measure of sampling adequacy (MSA) and cross-loading. Four factors were extracted explaining 57.06% of variance.

The determinant was 0.109, which was greater than the necessary value of 0.00001. In addition, there were no highly correlated values (R>0.9). Therefore, it can be concluded that multicollinearity was not a concern in this analysis [9].

Visual examination of the correlations revealed that 74.36% of all correlations were significant at the 0.05 level. This fact positively contributed to the assessment of the factorability of the correlation matrix. The Bartlett's Test of Sphericity was statistically significant, which indicated the presence of sufficient correlations among variables. The Kaiser-Meyer-Olkin MSA was 0.744, which is within the acceptable range. Examination of MSA for each individual variable revealed that all variables had MSA greater than the acceptable minimum of 0.5 [15].

Examination of communalities revealed only 2 variables ("Immediacy of effect" and "Magnitude of negative consequences") with slightly smaller communalities (0.372 and 0.394, respectively). Communalities of other variables were sufficiently high, meaning that substantial portion of the variables' variances were accounted by the factors.

A varimax (orthogonal) rotation was applied. Four factors were extracted (Table 4). The first factor included unfair and immoral, societal acceptability, warning, dread, and magnitude of negative consequences variables. This factor was labeled Dread/direness. The second factor included control, ease of reduction, attention, and understanding of risk. This factor was labeled Control. The third factor included immediacy of effect and observability variables. This factor was labeled Effect. Finally, the fourth factor included only one variable, newness. This factor was labeled Unfamiliarity. As a result, it can be concluded that subjects distinguish risks using four dimensions: direness of consequences, ability to control or avoid risks, observability/immediacy of risk consequences, and unfamiliarity of risks.

Table 4. Factor Loadings (F1-Dread/direness, F2-Control, F3-Effect, F4-Newness)

Risk Char C_i	F1	F2	F3	F4
Unfair and immoral	.784			
Societal acceptability	-.761			
Warning	.713			
Dread	.703			
Magnitude of negative consequences	-.513			

Control		.795		
Ease of reduction		-.741		
Attention		.584		
Understanding of risk		.386		
Immediacy of effect			.788	
Observability			.662	
Newness				.959

Factor scores were computed using the regression method. Factor scores were used to compute a mean score of each factor on each hazard. The results are presented in Table 5.

Factor analysis results were validated by randomly dividing the dataset into two subsets and conducting factor analysis on each subset. The results based on the two subsets were very similar to the results obtained using the entire dataset.

Table 5. Factor Scores (F1-Dread/direness, F2-Control, F3-Effect, F4-Newness)

Hazard\Factor	F1	F2	F3	F4
Hidden charges/fees	4.7	0.3	7.4	6.4
Inability to establish contact with customer service	4.2	-0.1	7.1	6.2
Theft of a customer's login information	5.4	0.1	8.0	4.6
Activities are being monitored on the internet	4.4	-0.5	8.9	4.7
Returning products purchased online	4.3	0.0	7.5	6.1
Dealing with fake/inauthentic web site	4.9	0.3	8.4	4.8
Dealing with unknown vendor	3.8	0.5	7.8	5.4
Delayed delivery	3.5	-0.6	7.5	6.3
Delivery of incorrect quantity of ordered products	3.7	-0.2	7.4	6.1
False information published online/ misrepresentation	4.7	-0.4	8.2	5.0
Identity theft	5.0	0.8	8.1	5.4
Inability to physically touch, sense, or see products	2.1	0.3	7.8	5.9
Inability to reverse a transaction once the order has been placed	3.3	0.6	7.3	5.2
Misunderstanding due to the absence of human communications	3.2	0.9	7.2	5.8
Non-delivery of purchased products	4.1	0.7	7.6	6.0
Receipt of a defective product	3.9	0.9	7.3	5.9
Receipt of a wrong product	3.9	0.7	7.4	5.8
System/ technology failure while transaction is being completed	3.3	0.6	6.9	4.9
Unauthorized use of consumers' personal data such as name, address, browsing habits	4.7	0.7	8.1	5.1
Unauthorized use of credit/debit cards	4.8	0.7	8.1	5.7
Uncertainty whether a consumer gets online bargain	3.1	1.2	7.9	5.1

5.4. Factor Space Diagrams

A factor space diagram was created by plotting 21 online hazards in a space defined by first using two factors and next using three factors. Since the factor space diagram aggregates perceptions of subjects into a small-dimensional space, it can be considered as an "aggregate cognitive map" of online risks, Factor 1, Dread/Direness is plotted horizontally whereas Factor 2, Control is plotted vertically. These two factors were chosen because they explain the largest percentage of variance out of all four factors. High scores on Factor 1 represent hazards whose consequences are dreaded by

consumers, that are completely acceptable by public, that are unfair and immoral, that represent a warning that more severe damage definitely will occur in the future, and that do not lead to greater consequences. Low scores on Factor 1 are associated with hazards whose consequences are not dreaded by consumers, that are completely unacceptable by public, that are fair and moral, that do not represent a warning that more severe damage will occur in the future, and that lead to greater consequences. High scores on Factor 2 represent hazards whose severity of consequences is controllable by consumers, whose risk cannot be easily reduced, that receive too much attention in the society, and whose risk is very easy to understand for the exposed consumers. Low scores on Factor 2 are associated with hazards whose severity of consequences is not controllable by consumers, whose risk can be easily reduced, that receive too little attention in society, and whose risk is very hard to understand for the exposed consumers. The factor space diagram is presented in Figure 1.

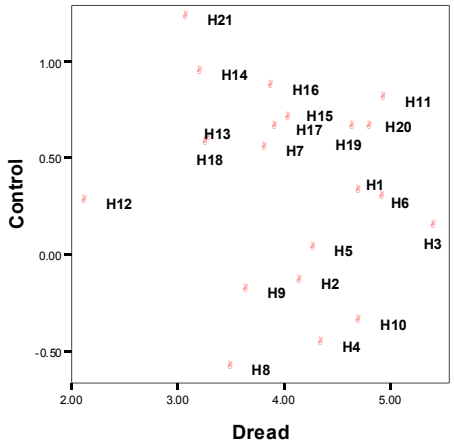

Figure 1. Factor Space Diagram for Factors 1 and 2 (Table 3 contains the labels for H_i)

Another factor space diagram was created by plotting 21 online hazards in a three-dimensional space defined by three factors: (a) Dread/Direness, (b) Control, and (c) Effect. These three factors were chosen because they explain the largest percentage of variance out of all four factors. High/low scores on Dread/direness and Control have the same interpretation meaning as in Fig. 1. High scores on Factor 3 represent hazards whose consequences have delayed effects and that cause damages that are not observable. Low scores on Factor 3 are associated with hazards whose consequences have immediate effects and that cause damages that are observable. The three-dimensional factor space diagram is presented in Figure 2.

It is interesting to note that hazards rated high on their perceived risk are located on the high end of the Dread factor, whereas most of hazards rated low on their perceived risk are located on the low end of the Dread factor. This phenomenon was also observed for the Effect factor. However, it was not observed for the Control or Newness factors.

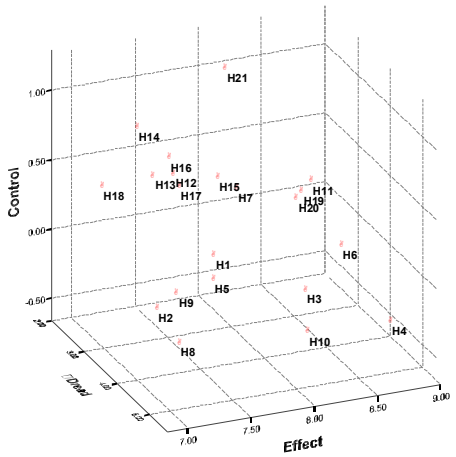

Figure 2. Factor Space Diagram for Factors 1, 2 and 3

6. Conclusion and Implications

This research uses the psychometric paradigm to study people's perceptions of and attitudes towards online risks. Based on the mean ratings, the top five risky online hazards as follows: (a) identity theft, (b) unauthorized use of credit or debit cards, (c) theft of a customer's login information, (d) unauthorized use of consumers' personal data, and (e) dealing with a fake or inauthentic web site. However, the standard errors are too large so they may not be statistically significant from others.

An interesting result is that subjects apparently use four dimensions predominantly in judging online risks: dread/direness of consequences, ability to control or avoid risks, observability/immediacy of risk consequences, and unfamiliarity of risks.

There are numerous implications of this exploratory research. The study using the

psychometric paradigm can be provide an input to a follow-up study whose purpose is to develop a scale for perceived online risks. Second, the cognitive map can be used as a powerful communication tool in discussing risk perception. Third, this study added empirical data regarding online risk perceptions to the existing body of the relevant academic research.

We are in the process of conducting further analysis. In addition, a large scale study which features new research incorporating "affect" based on recent research on the "affect heuristic" is planned.

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