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# ASSESSING PERCEIVED RISK OF CONSUMERS IN INTERNET AIRLINE RESERVATIONS SERVICES

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## ABSTRACT

This research investigates the premise that the use of Internet airline reservation systems is perceived to be riskier than traditional airline reservation systems. Unlike previous studies on perceived risk that typically focused on the relationship of perceived risk and information search, this study examines the dynamics of perceived risk throughout the various stages of the consumer buying process. A survey of 159 respondents reveals that perceived risk for both traditional and Internet airline reservation services follows a systematic pattern throughout the consumer buying process. Perceived risk for both traditional and Internet airline reservation systems falls during information search but recovers and rapidly increases as consumers approach the moment of purchase. When viewed as a dynamic process, perceived risk for Internet airline reservation services shows more radical changes in risk levels than the traditional service. Another major finding of this study is the discovery of a risk premium for Internet airline reservation services that permeates all stages of the consumer buying process.

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## INTRODUCTION

Online airline ticket sales reached approximately \$14.2 billion in 2002 (Foss, 2003). Travel business on the Internet accounts for about 15% of overall travel sales; about one-half of that is spent on airline ticket sales. Although Internet-based airline reservation services has been one of the fastest growing Internet services, researchers have suggested that even faster growth is precluded because of barriers such as perceived risk (Cases, 2002; Forsythe & Shi, 2003; Jarvenpaa & Todd, 1997; Liebermann & Stashevsky, 2002; Lim, 2003; Tan, 1999; Vijayarathy & Jones, 2000). By examining barriers such as perceived risk in the context of one of the fastest growing Internet services, researchers may determine whether there is a need to develop expensive mitigation strategies that lower perceived risk and spur growth.

This research reports on a survey of consumers that compares and contrasts their awareness of perceived risk when making airline reservations over the Internet as opposed to making reservations traditionally. Specifically, the study addresses the following key questions:

1. Do consumers experience a higher level of perceived risk when they shop over the Internet than when they shop traditionally? At what stages of the consumer buying process do differences occur?
2. Does perceived risk follow a systematic pattern as the Internet customer progresses through the consumer buying process? Do traditional shoppers experience similar fluctuations in perceived risk?
3. If an Internet risk premium exists, does it also follow the same pattern?

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## THEORETICAL FOUNDATIONS

### Perceived Risk and the Consumer Buying Process

Consumer perceptions of risk have been widely dealt with in the past literature and have been shown to shape all purchase decisions to varying degrees, and thereby influence consumer behavior (e.g., Bauer, 1960; Bettman, 1973; Chaudhuri, 1997; Cox, 1967; Cunningham, 1967; Mitchell, 1992; 1999). A purchase decision involves risk when the consequences connected with the decision are uncertain and some results are more desirable than others (Kogan & Wallach, 1964; 1967; Pollatsck & Tversky, 1970; Rapoport & Wallsten, 1972; MacCrimmon & Wehrung, 1986). A situation where the only possible result is a sure loss of some magnitude is not risk, since there is no variance among the possible results. Kogan and Wallach (1964) describe the concept of risk as having two dimensions: (a) the chance aspect where the focus is on probability, and (b) the danger aspect where the emphasis is on severity of negative consequence. Although many refinements to the definition of risk have been proposed, including expected value theory (Cunningham, 1967) and expected utility theory (Bonoma & Johnston, 1979; Currim & Sarin, 1983; Hauser & Urban, 1979), risk remains a subjectively determined expectation of loss by the consumer (Stone & Winter, 1987); thus the term, perceived risk.

It is theorized that when perceived risk falls below an individual's acceptance value, it has little effect on intended behavior and is essentially ignored (Greatorex & Mitchell 1993). On the other hand, an extremely high level of perceived risk can cause a consumer to postpone or avoid a purchase entirely. The extent of the exposure depends on the importance or magnitude of the goal, the seriousness of the penalty for not attaining the goal, and the amount of means committed to achieving the goal (Cox, 1967; Dowling & Staelin, 1994). Perceived risk is usually measured as a multidimensional construct: physical loss, financial loss, psychological loss, time loss, performance risk, and social risk (Roselius, 1971, Jacoby & Kaplan, 1972).

Generally, perceived risk is conceptualized as a typical influence that is addressed during the early stages of the consumer buying process (e.g., Cox, 1967; Dowling & Staelin, 1994; Murray, 1991; Murray and Schlacter, 1990; Zeithaml & Bitner, 2003). The consumer buying process is often described as a five-stage linear process (Blackwell, Miniard & Engel, 2003; Hawkins, Coney, Best & Hawkins, 2003): stage one -- need recognition, stage two -- information search, stage three -- alternatives evaluation, stage four -- purchase decision, and stage five -- post-purchase behavior. In the need recognition stage, consumers first perceive risk when they recognize the need for a product or service. In the presence of uncomfortable levels of perceived risk, consumers apply risk reduction strategies during the second

and third stages, such as reliance on personal recommendations (Cunningham, 1967; Midgley, 1983; Perry & Hamm, 1969), seeking additional information about a product or service (Beatty & Smith, 1987; Cox, 1967; Lutz & Reilly, 1973), a preference for national brands (Bauer, 1960; Locander & Herman, 1979; Lutz & Reilly, 1973), and the security of warranties (Bettman, 1973; Cox, 1967; Dowling & Staelin, 1994). It is generally assumed that these practices are sufficient for mitigating risk, and risk is seldom studied beyond the information search stage.

Although the impact of perceived risk on the consumer buying process for services is less studied than for products, the effect of perceived risk is believed to have a greater effect on the consumer for services (Guseman, 1981; Murray, 1991; Murray & Schlacter, 1990). Services are generally intangible, non-standardized, usually sold without guarantees, and often need to be experienced before they can be assessed (Parasuraman, Zeithaml & Berry, 1985; Zeithaml & Bitner, 2003). Consumers find themselves trying to evaluate virtually indistinguishable service alternatives and providers. These characteristics make services more difficult to evaluate than goods. As a result, service purchasers rely less on brand loyalty (Mitra, Reiss & Capella, 1999) and more heavily upon personal information sources and recommendations during the pre-purchase interval (Murray, 1991; Murray and Schlacter, 1990).

Like most services, airline services are intangible, somewhat standardized, heavily dependent upon human performance, and often sold with limited guarantees. While consumers may anticipate an airline experience because of prior experience, each airline experience varies and carries risk. Although airline reservation usage is amongst the heaviest of all Internet product and service categories, there is no research evidence that evaluates the role of perceived risk in the consumer buying process.

### **Perceived Risk and E-Commerce**

The majority of research on perceived risk is focused on traditional purchasing situations. However, Internet shopping is much different than shopping in stores. Internet shopping technologies are essentially self-service technologies that offer the benefits of round-the-clock convenience, ubiquitous availability, time and money savings, and a reduction in the anxiety caused by judgmental service representatives (Bitner, 2001; Meuter, Ostrom, Roundtree & Bitner, 2000). Of course, there are disadvantages to Internet shopping such as system complications, computer phobia, and loss of pleasure and social interaction (George, 1987). As a self-service technology, Internet airline reservation places a significant burden and responsibility on the consumer. The consumer is responsible for searching multiple carriers for fares, comparing prices, and proper booking. Mistakes

are the sole blame of the consumer who has very limited recourse for correcting errors. Of course, similar concerns are applicable to a wide range of Internet services and shopping situations, and are not limited to airline reservations.

Although Internet airline reservations have not been studied specifically, Internet shopping has been studied generally. Researchers (Vijayarathy & Jones, 2000) found perceived risk to be a significant factor affecting Internet consumer behavior. Liebermann and Stashevsky (2002) and Fosythe and Shi (2003) provide evidence to support a relationship between perceived risk and frequency of use. Fosythe and Shi contend that perceived risk is likely to have the greatest impact on infrequent Internet shoppers, which precludes the conversion of Internet browsers into Internet shoppers.

These researchers (Vijayarathy & Jones, 2000; Liebermann & Stashevsky, 2002; Fosythe & Shi, 2003) present a substantial argument for including perceived risk as a factor influencing Internet shopping behavior and usage. This raises the question of whether perceived risk has an influence beyond information search. The present authors suggest further exploration of the influence of perceived risk at all stages of the consumer buying process.

### **Research Model and Research Questions**

The authors suggest, based on the literature review, that two major factors influence perceived risk: shopping method (i.e., traditional versus Internet) and consumer buying stage (i.e., problem recognition, information search, evaluation of alternatives, purchase and post-purchase). The first factor, shopping method, encapsulates all properties related to the design of the shopping method, including physical characteristics and the business models underlying the application. The second factor is the relationship between perceived risk and consumer buying stages, which is unexplored at the latter stages in the extant literature. Based on this research model, the following questions are pursued in this study:

#### ***Question 1: Does an Internet perceived risk premium exist at each consumer buying stage for airline reservation services?***

Question 1 is based on the supposition that Internet airline reservation services are perceived to be riskier than traditional airline reservation services. The Internet perceived risk premium is measured as the difference in perceived risk between the two shopping methods: Internet and traditional. It reflects the incremental risk to the consumer of using Internet airline reservation services over traditional services.

While question one tests for an Internet risk premium at each and every stage of the consumer buying process, question two investigates whether the

premium holds constant across stages. The second question is based on the belief that perceived risk is not fixed and varies throughout the consumer buying process. If perceived risk holds constant, it displays a horizontal line. However, if perceived risk varies, it displays a systematic pattern that shows that the level of perceived risk varies by stage of the consumer buying process. The second question examines Internet airline reservation services and traditional services respectively, as well as the Internet risk premium.

***Question 2: Does a systematic pattern of perceived risk exist for traditional and Internet airline reservation services? Does the Internet risk premium follow a systematic pattern as well?***

The third question inspects the shape of the systematic patterns of perceived risk by identifying those stages of the consumer buying process that give rise to the differences in perceived risk; the focus is on identifying the stages that would bring about significant changes in risk perceptions. Question 3 examines the perceived risk for Internet airline reservation services, traditional airline reservation services, and the Internet risk premium for fluctuations between stages. If this question is answered in the affirmative for the Internet risk premium, then perceived risk fluctuates differently for Internet airline reservation services than for traditional airline services. The question is based on the supposition that the effect of the Internet on perceived risk is magnified, reflecting the possible occurrence of additional risk factors or greater risk emphases for Internet consumers that are not shared by consumers of traditional services.

***Question 3: Does perceived risk vary between adjacent stages for Internet airline reservation services, traditional airline reservation services, and the Internet risk premium?***

### **Research Design and Methods**

An initial survey instrument was developed that gave respondents definitions of the five stages of the consumer buying process. Initial pre-tests of that instrument were promising and led to further refinements. The final instrument (see Appendix A) collected data on perceived risk for Internet airline reservation services and traditional airline reservation services from undergraduate and graduate student respondents at a major metropolitan university. For each service, respondents were asked for levels of perceived risk at each stage. Respondents were asked to identify overall levels of risk and assess the severity of risk by stage for each service. In all cases, perceived risk was measured using a 7-point Likert scale. These data were used for evaluating the exploratory questions previously mentioned. Although there has been a concern regarding the use of students as surrogate

consumers, they were deemed appropriate for this study because they were actual, not surrogate, customers of the services selected: 72% of the respondents indicated that they had used traditional airline reservation services, 89% had used Internet airline reservation services, and 62% used both services. The large number of respondents that used both shopping methods suggests the respondent pool reflects a group that is informed about both alternatives.

The final instrument was completed by 159 volunteer undergraduate and graduate business school students at the same major urban university with a response rate of 99%. Care was taken not to include respondents who had completed the pretest. The respondents were nearly evenly split between genders (79 males, 80 females), the average age was 26 years, and there were 103 undergraduates and 56 graduates. Almost all respondents were employed at least halftime, 112 fulltime. The mean household income was \$62,000 and 97 respondents were single.

### DATA ANALYSIS AND RESULTS

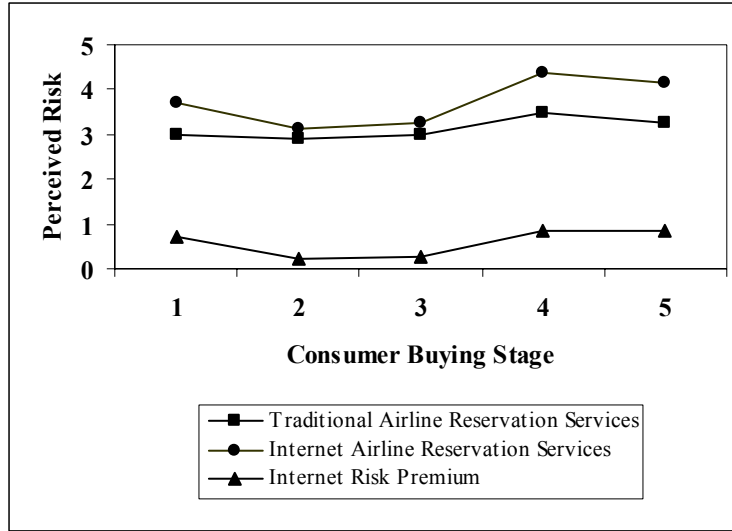
The descriptive statistics (see Figure 1) illustrate the patterns of responses received from the subjects. The plots show the average perceived risk by consumer buying stage for Internet airline reservation services and for traditional airline services. The differences between the Internet and traditional points are plotted as the Internet perceived risk premium. Visual inspection suggests that the Internet service is perceived to be riskier than the traditional service and that perceived risk fluctuates significantly throughout the consumer buying process. The results of the statistical analyses follow.

To address the first question, a paired-difference t-test was performed to determine if the averages of the Internet data were significantly different from the averages of the traditional data at each stage. Table 1 presents the results showing that the averages are significantly different ( $p < .001$  for stages one, four, and five;  $p < .01$  for stage three;  $p < .05$  for stage two). This statistical testing demonstrates the existence of an Internet perceived risk premium at each stage.

The second question investigates the pattern of perceived risk as the consumer progresses through the consumer buying stages. Two-way ANOVAs were performed to test the difference of averages between respondents and the difference of averages between stages for the Internet, the traditional, and the Internet risk premium data. Table 2 summarizes the results of the three ANOVAs. The ANOVAs results show a significant difference between respondents ( $p < 0.001$ ) for all three tests, which indicate that the respondents introduce systematic variability. The ANOVAs for Internet services, traditional services, and the Internet risk premium data show that stages are also significant ( $p < 0.001$ ). That means the level of risk

perceived does not hold constant across stages. Hence the perceived risk for traditional and Internet airline services display a systematic pattern over the consumer buying process. If the patterns are the same, the Internet risk premium would be constant. The ANOVA for the Internet risk premium reveals that the premium is not constant and hence the systematic pattern of Internet perceived risk is different from that of traditional services.

**Figure 1. Patterns of Perceived Risk by Consumer Buying Stage for Internet Airline Reservation Services, Traditional Airline Reservation Services and the Internet Risk Premium, 2004**



**Table 1. Standard Deviations between Internet Airline Reservation Services, Traditional Airline Reservation Services, and the Internet Risk Premium for each Consumer Buying Stage, 2004**

	Airline	
Stage 1	0.72 (1.46)***	n = 152
Stage 2	0.21 (1.40)*	n = 147
Stage 3	0.26 (1.33)**	n = 145
Stage 4	0.87 (1.59)***	n = 150
Stage 5	0.87 (1.42)***	n = 151

\* significant at  $p = .05$

\*\* significant at  $p = .01$

\*\*\* significant at  $p = .001$



**Table 2. Significance of Consumer Buying Stages on Perceived Risk of Internet Airline Reservation Services, Traditional Airline Reservation Services and the Internet Risk Premium, 2004**

Source	Airline								
	Internet			Traditional			Internet Risk Premium		
	DF	MS	F	DF	MS	F	DF	MS	F
Respondents	111	10.63	6.22***	111	8.28	6.12***	111	5.02	4.23***
Stages	4	34.55	20.20***	4	9.52	7.04***	4	9.11	7.68***
Error	444	1.71		444	1.35		11	1.19	

\*\*\* significant at  $p = .001$

The third question concerns the identification of those adjacent stages where perceived risk changes significantly. From the two-way ANOVAs, Fisher's least significant difference tests were performed on adjacent stages for both services and the Internet risk premium. Table 3 presents the statistical results of these tests.

For Internet services, statistically significant changes are observed in the averages between stages one and two ( $p < .05$ ), and stages three and four ( $p < .001$ ). A significant decrease in perceived risk occurs between stages one and two, and a significant increase occurs between stages three and four. For traditional services, a statistically significant increase occurs between stages three and four ( $p < .001$ ), and a statistically significant decrease occurs between stages four and five ( $p < .05$ ). Rapid changes in perceived risk occur at information search and purchase for Internet airline reservation services, while the changes in perceived risk occur at the purchase and post purchase stages for traditional airline reservation services.

When comparing Internet and traditional services using the Internet risk premium data, a statistically significant decrease occurs at stages one to two ( $p < .05$ ) and an increase at stages three to four ( $p < .001$ ). The implication is that the Internet changes the fluctuations in the pattern of perceived risk for airline reservations at these transition points. The implication is that information search is more effective at reducing perceived risk levels for Internet shoppers. However, Internet shoppers at the time of purchase experience higher levels of perceived risk than buyers using traditional methods.

### SUMMARY OF FINDINGS

Descriptive statistics on the level of perceived risk at each stage of the consumer buying process for Internet airline reservation services and traditional airline reservation services, as well as differences in perceived risk between the two shopping methods are presented. Statistical analysis of this data was used to address three major research questions. The first research question concerns the existence of an Internet risk premium.

Statistical analysis supports the premise that the Internet method of shopping introduces additional perceived risk at each stage of the consumer buying process, as shown in Figure 1. The analysis indicates that there is a risk premium for Internet airline reservation services at every stage of the consumer buying process.

**Table 3. Significant Differences for Adjacent Stages of Consumer Buying Stages for Internet Airline Reservation Services, Traditional Airline Reservation Services and the Internet Risk Premium, 2004**

	<i>Adjacent Stages</i>	<i>Airline</i>
<i>Internet</i>	1 to 2	0.50*
	2 to 3	0.08
	3 to 4	1.19**
	4 to 5	0.28
<i>Traditional</i>	1 to 3	0.14
	2 to 3	0.05
	3 to 4	0.65***
	4 to 5	0.31
<i>Internet Risk Premium</i>	1 to 2	0.36
	2 to 3	0.03
	3 to 4	0.54***
	4 to 5	0.04

\* significant at p = .05

\*\* significant at p = .01

\*\*\* significant at p = .001

Further analysis indicates that there is systematic fluctuation of perceived risk across the stages of the consumer buying process for both Internet and traditional airline reservation services, as well as for the Internet risk premium. Hence, the second research question is answered affirmatively for all three cases – perceived risk does follow a systematic pattern. The analysis for the third research question indicates that perceived risk for Internet airline reservation services decreases as the user progresses to information search (stage two) and increases as the buyer moves from alternative evaluation (stage three) to purchase (stage four). The pattern for traditional airline reservation services is both similar and distinct from Internet services. Between evaluation of alternatives and purchase, an increase in perceived risk occurs, followed by a decrease between purchase and post-purchase. The Internet risk premium highlights the dissimilarities between risk perceptions for Internet and traditional airline reservation services. It fluctuates between stages one and two and stages three to four. In summary, the data shows that the rate of change in perceived risk is greater for Internet shoppers transitioning from need recognition to information search and from alternative evaluation to purchase decision.

## **DISCUSSION AND CONCLUSIONS**

Researchers have typically assumed that perceived risk principally occurs at the need recognition stage during the consumer buying process (Zeithaml & Bitner, 2003). They understood that an information search would alleviate that risk and allow the purchase process to continue. Risk has been discussed infrequently in conjunction with the other stages of the consumer buying process. Now, however, statistical evidence from this study of airline reservation services demonstrates that perceived risk occurs at each stage of the consumer buying process, regardless of shopping method.

These statistical findings indicate that perceived risk follows a systematic pattern for Internet and traditional airline reservation services. Generally, perceived risk falls dramatically at the information search stage for Internet services, but then rises dramatically from the alternatives evaluation stage to the purchase stage. Perceived risk for traditional airline reservation services generally follows a similar pattern except that risk does not decrease between need recognition and information search, but does increase between evaluation of alternatives and purchase. Risk then falls at the post-purchase stage.

Perceived risk for Internet airline reservation services falls more rapidly than for traditional airline reservation services during need recognition and information search and accelerates more quickly between the alternatives evaluation and purchase stages. Most importantly, perceived risk appears to play a prominent role during the actual purchase of a service regardless of shopping method. Since perceived risk intensifies at the moment of purchase, this phenomenon warrants further investigation and research.

It was shown that an Internet perceived risk premium occurs at each stage of the consumer buying process for airline reservation services. Statistical analysis reveals that the Internet perceived risk pattern is consistently elevated when compared to the same pattern of a traditional service. This risk premium alters the shape of the perceived risk pattern and reflects the volatility of risk perceptions related to shopping method and stage. The pattern reveals more radical changes in perceived risk levels for Internet services than for traditional services at information search and purchase stages.

The traditional concept of perceived risk suggests that risk is mitigated by information search and continues at reduced, if not insignificant, levels for the remainder of the process. Based on this work, the present authors suggest perceived risk, while alleviated by an information search, may again intensify at the purchase stage of the consumer buying process and remains elevated through the post-purchase stage. Hence, perceived risk may be of continuing research importance, not only because of the evolution of

shopping methods, but because it is, in reality, a dynamic concept in the context of the consumer buying process.

There are a number of managerial implications associated with this research. First, Internet shoppers experience a heightened level of perceived risk at the need recognition stage. Perceived risk falls during the transition from problem recognition to information search for Internet shoppers – suggesting that information search is partly successful at alleviating risk, but not entirely since the Internet risk premium endures. The initial heightened level of risk is likely a barrier to using Internet airline reservation services. Risk mitigation strategies for dealing with initial risk levels may include providing information on the advantages of online reservation systems, user-friendly system design, special help and handholding for consumers, and guarantees of satisfaction.

Regardless of shopping method, airline reservation purchase is characterized by rapidly accelerating risk as the buyer moves from information search to purchase. Consumers purchasing airline reservation services, and perhaps other services, experience feelings of risk. Under such circumstances, the challenge to providers of airline reservations is to determine the cause of this risk acceleration. One possible explanation is that some issues remain unresolved for the consumer as the purchase process reaches culmination. For example, the consumer may consider the possibility of double booking, poor seating choices, failure to obtain electronic receipts or timely delivery of ticket, or paying too much for a non-transferable, non-refundable ticket. When operating computer systems, it is normal for users to make unintentional mistakes. For self-service technologies management's role is to provide a non-punitive environment for the consumer. Management has to provide immediate recourse to rectify consumer mistakes.

Finally, there is clearly a premium for Internet shopping for airline reservations. It seems that the challenge to develop risk mitigation strategies is more urgent for providers of this service. However, providers need to establish whether the incremental risk does indeed affect patronage. Providers need to understand the inherent risks of Internet services and how those risk perceptions may ultimately limit the utility of Internet delivered services.

#### REFERENCES

- Bauer, R. A. (1960). Consumer behavior as risk taking. In R. S. Hancock (Ed.), *Dynamic marketing for a changing world*. (pp. 389-98). *Proceedings of the 43rd Conference*. Chicago, IL: American Marketing Association.
- Beatty, S. E. & Smith, S. M. (1987). External search effort: an investigation across several product categories. *Journal of Consumer Research*, 14, 83-95.

- Bettman, J. R. (1973). Perceived risk and its components. *Journal of Marketing Research*, 10, 84-90.
- Bitner, M. J. (2001). Self-service technologies: What do customers expect? *Marketing Management (Spring)*, 10-11.
- Blackwell, R. D., Miniard, P. W. & Engel, J. F. (2003). *Consumer behavior*. Orlando, FL: Harcourt.
- Bonoma, T. V. & W. J. Johnston. (1979). Decision making under uncertainty: a direct measurement approach. *Journal of Consumer Research*, 6, 177-91.
- Cases, A-S. (2002). Perceived risk and risk-reduction strategies in Internet shopping. *International Review of Retail, Distribution and Consumer Research*, 12(4), 375-94.
- Chaudhuri, A. (1997). Consumption emotion and perceived risk: A macro-analytic approach. *Journal of Business Research*, 39, 81-92.
- Cox, D. (1967). *Risk taking and information handling in consumer behavior*, Boston, MA: Harvard University.
- Cunningham, S. M. (1967). Perceived risk and brand loyalty. In D. F. Cox (Ed.). *Risk-Taking and Information Handling in Consumer Behavior*. (pp. 507-23). Boston, MA: Boston University Press.
- Currim, I. S. & R. K. Sarin (1983). A procedure for measuring and estimating consumer preferences under uncertainty. *Journal of Marketing Research*, 20, 249-56.
- Dowling, G. R. & R. Staelin (1994). A model of perceived risk and intended risk-handling activity. *Journal of Consumer Research*, 2, 119-34.
- Forsythe, S. & B. Shi (2003). Consumer patronage and risk perceptions in Internet shopping. *Journal of Business Research*, 56, 867-75.
- Foss, B. (2003). *Online discounter to offer travel deals*. Associated Press, Oct. 14.
- George, R. J. (1987). In-home electronic shopping: Disappointing past, uncertain future. *Journal of Consumer Marketing*, 4(4), 47-56.
- Greatorex, M. & V-W. Mitchell (1993). Developing the perceived risk concept: Emerging issues in marketing. (pp. 405-415). In M. Davies, et al. (Eds.). *Proceedings, Marketing Education Group Conference*. Loughborough.
- Guseman, D. S. (1981). Risk perception and risk reduction in consumer services. In J.H. Donnelly, et al. (Eds.). *Marketing of Services*, Chicago, IL: American Marketing Association.
- Hauser, J. R. & G. L. Urban (1979). Assessment of attribute importance and consumer utility functions: Von Neumann-Morgenstern theory applied to consumer behavior. *Journal of Consumer Research*, 5(4), 251-262.

- Hawkins, D. I., Coney, K. A., Best, R. J., & D. F. Hawkins (2003). *Consumer behavior: Building marketing strategy*, Chicago, IL: Irwin.
- Jacoby, J. & L. B. Kaplan (1972). The components of perceived risk. (pp. 382-393). In M. Venkatesan (Ed). *Proceedings of the 3rd Annual Conference of the Association for Consumer Research*. College Park, MD: Association for Consumer Research.
- Jarvenpaa, S. L. & P. A. Todd (1997). Consumer reactions to electronic shopping on the World Wide Web. *International Journal of Electronic Commerce*, 1(2), 59-88.
- Kogan, N. & M. A. Wallach (1964). *Risk taking, a study in cognition and personality*, New York, NY: Holt, Rinehart, and Winston.
- Kogan N. & M. A. Wallach (1967). Group risk taking as a function of members' anxiety and defensiveness levels. *Journal of Personality*, 35(1), 50-63.
- Liebermann, Y. & S. Stashevsky (2002). Perceived risks as barriers to Internet and E-commerce usage. *Qualitative Market Research: An International Journal*, 5(4), 291-300.
- Lim, N. (2003). Consumer perceived risk: Sources versus consequences. *Electronic Consumer Research and Applications*, 2, 216-28.
- Locander, W. & P. Herman (1979). The effect of self-confidence and anxiety on information seeking in consumer risk reduction. *Journal of Marketing Research*, 16, 268-74.
- Lutz, R. J. & P. J. Reilly (1973). An exploration of the effects of perceived social and performance risk on consumer information acquisition. (pp. 393-405). In S. Ward & P. Wright (Eds.). *Advances in Consumer Research*. Ann Arbor, MI: Association for Consumer Research.
- MacCrimmon, K. R. & D. A. Wehrung (1986). *Taking risks: the management of uncertainty*, New York, NY: The Free Press.
- Meuter, M. L., Ostrom, A. L., Roundtree, R. I. & M. J. Bitner. (2000), Self-service technologies: Understanding customer satisfaction with technology-based service encounters. *Journal of Marketing*, 64(July), 50-64.
- Midgley, D. F. (1983). Patterns of interpersonal information seeking for the purchase of a symbolic product. *Journal of Marketing Research*, 20, 74-83.
- Mitchell, V-W. (1992). Understanding consumers' behavior: Can perceived risk theory help? *Management Decision*, 30(3), 26-31.
- Mitchell, V-W. (1999). Consumer perceived risk: Conceptualizations and models. *European Journal of Marketing*, 33(1/2), 163-95.
- Mitra, K., Reiss, M. C. & L. M. Capella (1999). An examination of perceived risk, information search, and behavior intentions in search, experience and credence services. *Journal of Services Marketing*, 13(3), 208-28.

- Murray, K. B. (1991). A test of service marketing theory: Consumer information acquisition activities. *Journal of Marketing*, 55(January), 10-25.
- Murray, K. B. and J. L. Schlacter. (1990). The impact of services versus goods on consumers' assessment of perceived risk. *Journal of the Academy of Marketing Science*, 18(1), 51-65.
- Parasuraman, A, Zeithaml, V. A. & L. L. Berry (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing*, 49, 41-50.
- Perry, M. & C. B. Hamm (1969). Canonical analysis of relations between socioeconomic risk and personal influence in purchase decisions. *Journal of Marketing Research*, 6, 351-54.
- Pollatsek, A. & A. Tversky (1970). A theory of risk. *Journal of Mathematical Psychology*, 7, 540-553.
- Rapoport A. & T. S. Wallsten (1972). Individual decision behavior. *Annual Review of Psychology*, 23, 131-76.
- Roselius, T. (1971). Consumer ranking of risk reduction methods. *Journal of Marketing*, 35(1), 56 Stone -61.
- Stone, R. N. & F. W. Winter. (1987). Risk: Is it still uncertainty times consequences? In R. W. Belk, et al (Eds.). (pp. 261-65). *Proceedings of the American Marketing Association (Winter Educators Conference)*. Chicago, IL: American Marketing Association.
- Tan, S. J. (1999). Strategies for reducing consumers' risk aversion in Internet shopping. *Journal of Consumer Marketing*, 16(2), 163-80.
- Vijayasathy, L. R. & J. M. Jones. (2000). Print and Internet catalog shopping: Assessing attitudes and intentions. *Internet Research: Electronic Networking Applications and Policy*, 10(3), 191-202.
- Zeithaml, V. A. & M. J. Bitner. (2003). *Services marketing: Integrating customer focus across the firm, 3rd edition*. New York, NY: McGraw-Hill.