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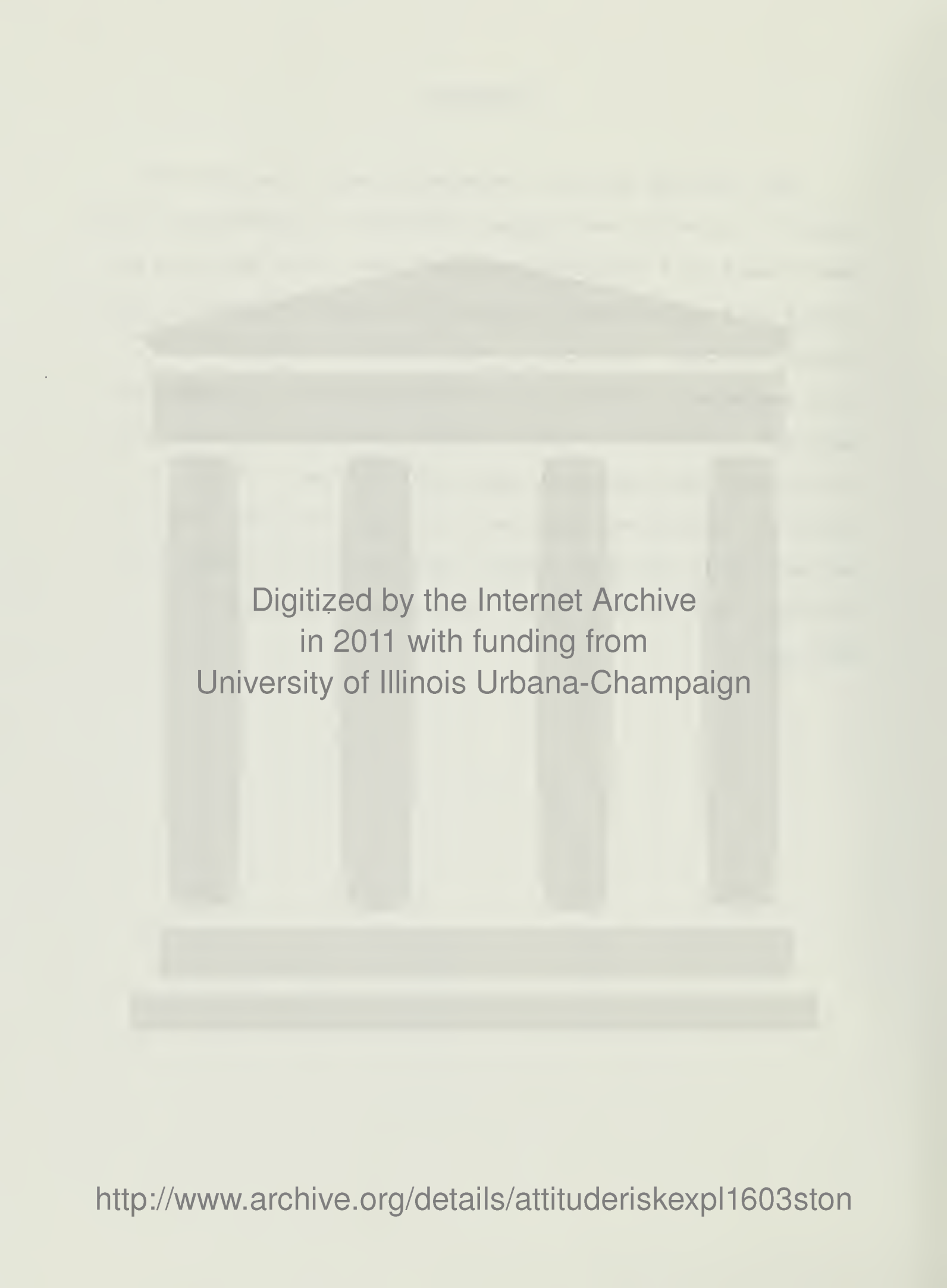
ABSTRACT

The attitude and risk constructs each have prominent roles in marketing and consumer research. Attitude has long been viewed as a belief-based construct. Risk may also be viewed as a belief-based construct in that the beliefs about future outcomes, measured as expectations, comprise one's risk assessment. This belief-based similarity presents an apparent conceptual overlap between risk and attitude; yet, no research has developed this point-of-view. This research, therefore, explored the proposition that risk, a belief-based construct, shares some beliefs in common with attitude, and as such is an influential component of attitude.



ATTITUDE AND RISK: EXPLORING THE RELATIONSHIP

The nature of the attitude construct has been of intense interest to social science researchers for many years (c.f. Bruno and Wildt 1975). The risk construct, in comparison, has received less attention, though risk research has been characterized as having a middle-range research tradition (Ward and Robertson 1973, p.21). Somewhat surprising, virtually no research has evaluated the relationship between risk and attitude although the literature suggests the two constructs may share elements of a similar conceptual domain in the sense that both constructs are belief-based.

Zikmund and Scott, for example, noted (1974, p.406):

> We have chosen to treat overall risk and its components in a fashion similar to Fishbein's...attitude paradigm in cognitive theory....if a person perceives a great deal of overall risk...then this belief should be associated with a set of beliefs that the product is risky on one or more of its important attributes....the risk belief elements relating to product attributes can be treated as having both an uncertainty dimension and a consequence dimension. The uncertainty dimension is analagous to Fishbein's likelihood of association component....The consequence dimension measures the extent to which a consumer seeks to avoid certain possible outcomes of the purchase.

Bearden and Mason (1978) linked risk and attitude by viewing the models associated with each construct as "cognitive-rational" models, a perspective shared by others (Ring et. al 1980). The authors elicited information about the risks associated with and the attitudes toward the purchase of prescription drugs. Six categories of salient

beliefs emerged as underpinning the attitude construct: quality, price, safety, reputation, side effects, and efficacy (Table 1). Risk was assessed with the six dimensions normally reported in the literature (Peter and Ryan 1976; Stem et. al 1977; Festervand et. al 1986), namely: performance, financial, social, psychological, physical, and convenience. Table 1 presents the attitudinal beliefs elicited and the risk dimensions included in the study.

Table 1

ATTITUDE AND RISK COMPONENTS OF THE BEARDEN AND MASON STUDY

ATTITUDE	RISK
quality	performance
price	financial
safety	social
reputation of manufacturer	psychological
side effects	physical
efficacy	convenience

As shown, the supporting beliefs for the attitude construct appear to be conceptually similar to the risk dimensions. Specifically, quality can be judged by performance; price is a financial issue; safety can be conceived as a physical risk dimension and so on.

Bearden and Mason then separately regressed attitude on evaluated beliefs and on risk. Regressing attitude on evaluated beliefs is a widely accepted research tradition in consumer behavior. Regressing attitude on risk dimensions has not been previously reported. The correlations in each

model were significant and exceeded .5. The findings suggest a strong statistical relationship between measures of the two constructs. The question remains, however, as to the conceptual relationship. Are the risk and attitude constructs related and, if so, what is the nature of the relationship?

Purpose of Research

The purpose of this research, thus, was to explore the nature of the relationship between risk and attitude. The objectives were to: (1) develop multiple measures of risk and attitude, both directly and indirectly, and assess the reliability of these measures; (2) empirically assess the relationship between measures of risk and attitude and determine the construct validity for the two constructs; and (3) develop conclusions about the conceptual similarity between the risk and attitude constructs based on the research findings.

Attitude and Risk Research: Needed Directions

Holbrook (1978) has observed that researchers continue to seek marginal improvements in the predictive power of attitude models that already perform rather well. He expressed concern for a concommitant neglect of research on the informational determinants of attitude. Additional research is needed, in his opinion, that focuses on the basic underpinnings of the attitude model itself, i.e., the belief basis of the attitude (Fishbein 1967).

A similar lack of insight exists about the basic underpinnings of the risk construct. Researchers continue to develop interesting research settings that employ risk in consumer (Shimp and Bearden 1982; Lantos 1983) and industrial settings (Hawes and Barnhouse 1987). However, virtually no "within dimensions" disaggregation of risk has been reported in the literature. The underlying supporting beliefs of each risk dimension, therefore, remain obscure, although the need for such insight has been repeatedly noted (e.g., Nicosia 1969, p. 165; Bettman 1973, p.184,187; Peter 1979, p.15).

In addition to the relative lack of research on the underlying beliefs structure of the risk and attitude constructs, the issue of conceptual and construct similarity between risk and attitude is still unclear. Some researchers have suggested that risk has a direct influence on behavior (Cox and Rich, 1964; Deering and Jacoby 1972; Spence et al., 1970). Others, such as Wilson (1974, p.78), reported that risk has a direct influence on attitude formation but only an indirect influence on behavior. This view is consistent with the extended model developed by Fishbein (c.f. 1979).

Beliefs. Some beliefs underlying the attitude construct appear to be "risk based" beliefs. The influence of such beliefs on situation specific behavior can be posited as dependent on the degree of risk one associates with the behavior. In the Bearden and Mason (1978) research, for

example, attitude apparently was heavily risk influenced as reflected in the similarity of results when attitude was regressed on both evaluated beliefs and on risk. In summary, the consensus, though limited, is that risk appears to shape choices by its influence on attitudes (Barnes and Ayars, 1977, p.191; Brody and Cunningham, 1968, p.52). The thesis of this research, thus, is that risk is subsumed as part of the attitude construct and as such is an inherent component of attitude. This perspective provides the basis for the following hypotheses.

HYPOTHESES

Four hypotheses were developed for this study. Two hypotheses assess the relationships between the direct and indirect measures of risk and attitude. A third hypothesis was developed to assess the uniqueness of the two constructs. The fourth hypothesis tests how risk contributes to the understanding of attitude.

H1: Direct Measures of Attitude will significantly and highly correlate with indirect measures of attitude.

The hypothesized relationship has a strong base of support in the literature (Fishbein and Ajzen 1975; Bearden and Mason 1978). Ajzen and Fishbein (1980) have developed a specific step-by-step approach for developing these measures. It is necessary to substantiate this hypothesis so as to be confident of the attitude measures employed in

this study. Lack of support for H1 would preclude further analysis.

H2: Direct Measures of Risk will significantly and highly correlate with indirect measures of risk.

The literature reveals support for the relationship between a single measure of overall risk and an indicant formed by summing single measures of each of the six dimensions of risk (Peter and Ryan 1976; Peter and Tarpey 1975). In this research, an important further step toward understanding risk is taken by developing multiple measures of risk as well as multiple measures of each of the six dimensions of risk. Acceptance of the hypothesis would provide support for a belief-based approach to the study of risk. Furthermore, similar to the reasoning used for hypothesis one, the measures of risk must behave as expected before presenting relationships between risk and attitude.

H3: Measures of Risk and Attitude, direct and indirect, will correlate more highly with their respective construct than with the other construct.

Acceptance of hypothesis three, as evidenced by the pattern of first order correlations such as that provided in a multi-trait, multi-method matrix, would support the belief that risk and attitude, though related, are distinct constructs.

H4: For a regression model with attitude as criterion and evaluated beliefs (Ebsum) and RISK as predictors, most of the variance in attitude will be explained by Ebsum.

Support for hypothesis four would add credence to conceptualizing risk as subsumed within the attitude construct. If hypothesis 4 is not supported, the finding would lend credence to conceptualizing risk as independent of the attitude construct. Though counterintuitive, acceptance of hypothesis 4 supports the importance of risk as an influential component of attitude formation.

METHODOLOGY

Questionnaires were sent to all alumni from an Executive MBA program at a major midwestern university. An introductory letter was sent to these 280 individuals alerting them to the fact that they would soon receive a questionnaire. Shortly thereafter, the questionnaire was mailed. This procedure was repeated and the two wave mailing resulted in a response rate of just over 70%. Current Executive MBA students provided responses for the elicitation of salient beliefs and risk based beliefs. Virtually no difference was found between the beliefs of these students and those who had completed their degree.

Variable Definitions

Assuming scale unidimensionality (to be supported by analysis), composite variables for the risk and attitude constructs were to be formed by summing the items that measured each construct. The variables operationalized

included variables to directly and indirectly measure the risk and attitude constructs.

Direct Measures of Constructs

Six variables were developed to measure attitude directly and three to measure risk directly. The variables were operationalized as follows: (coefficient alpha estimates are shown in parentheses).

ATTITUDE (alpha=.92). The behavior of interest was the purchase of a personal computer (object), within the next year (time frame), for one's use at home (context). Six attitude measures were developed with the endpoints wise-foolish, satisfying-dissatisfying, bad-good, not beneficial-beneficial, pleasant-unpleasant, and worthless-valuable. Each was assessed by the use of a seven point bipolar scale.

RISK (alpha=.69). Direct measures for **RISK** consisted of the three 7-point bipolar scales shown below. The endpoints were "extremely agree" and "extremely disagree." Each question was worded as "pre-choice" with loss arising from engaging in a behavior.

(1) "Overall, the thought of buying a personal computer within the next twelve months causes me to be concerned with experiencing some kind of loss (social, financial, performance, etc.) if I went ahead with the purchase;"

(2) "All things considered, I think I would be making a mistake if I bought a personal computer within the next twelve months for my use at home;"

(3) "When all is said and done, I really feel that the purchase of a personal computer within the next twelve months poses problems for me that I just don't need."

Indirect Measures of Constructs

Attitude. Initial measures for attitude followed the prescription of Ajzen and Fishbein (1980, p.261-263). Questionnaires were content analyzed and the elicitations ordered by frequency of repeating responses. Nine salient beliefs emerged, as shown in Table 2.

TABLE 2

SALIENT BELIEFS ABOUT THE PURCHASE OF A PERSONAL COMPUTER

Advantages	Disadvantages
1. would help to educate my children	5. would reduce the amount I have to spend elsewhere
2. do record keeping more efficiently	6. would not have time to fully utilize
3. able to do office work at home	7. would be technologically improved in the future
4. will help speed up learning DP	8. price will be significantly reduced in the future
	9. would have no real advantage

Risk. Six dimensions were assessed with three variables per dimension. To the best of our knowledge, multiple measures of the various dimensions of risk have not previously appeared in the literature. The lack of multiple measures has precluded a diagnostic exploration of the belief underpinnings of one's risk inference. The dimensions of risk with alpha values shown in parenthesis

are presented below. All measures met Nunnally's recommendation (1967, p.226) to achieve a minimum alpha of .50 in basic research.

SOCIAL RISK (a=.72; q2 not used)

1. If I bought a personal computer within the next twelve months for use at home, I think I would be held in higher esteem by my associates at work.

2. The thought of buying a personal computer within the next twelve months for use at home causes me concern because some friends would think I was just being showy.

3. My purchase of a personal computer within the next twelve months for use at home would cause me to be thought of as being foolish by some people whose opinion I value.

TIME RISK (a=.66)

1. My purchasing a personal computer within the next twelve months for use at home makes me concerned that I would have to spend too much time learning how to use the computer.

2. The demands on my schedule are such that purchasing a personal computer within the next twelve months for use at home concerns me because it could create even more time pressures on me that I don't need.

3. My purchasing a personal computer within the next twelve months for use at home could lead to an inefficient use of my time from playing computer games, understanding various software packages, and so forth.

FINANCE RISK (a=.76)

1. My purchasing a personal computer within the next twelve months for use at home would be a bad way to spend my money.

2. If I bought a personal computer for myself within the next twelve months for use at home, I would be concerned that the financial investment I would make would **not** be wise.

3. If I bought a personal computer for myself within the next twelve months for use at home, I would be concerned that I really would not get my money's worth from this product.

PHYSICAL RISK (a=.59)

1. One concern I have about purchasing a personal computer within the next twelve months for use at home is that eye strain for some member of my family could result due to overuse of the computer.

2. My purchase of a personal computer within the next twelve months for use at home leads to concerns about whether the product could lead to some uncomfortable physical side effects such as bad sleeping, backaches, and the like.

3. Because personal computers may not be completely safe, when I contemplate purchasing a personal computer within the next twelve months for use at home, I become concerned about potential physical risks associated with this product.

PERFORMANCE RISK (a=.75)

1. As I consider the purchase of a personal computer within the next twelve months for home use, I worry about whether the product will really perform as well as it is supposed to.

2. If I were to purchase a personal computer within the next twelve months for home use, I become concerned that the computer will not provide the level of benefits that I would be expecting.

3. The thought of purchasing a personal computer within the next twelve months for home use causes me to be concerned for how really dependable and reliable the product will be.

PSYCHOLOGICAL RISK (a=.81)

1. The thought of purchasing a personal computer within the next twelve months for use at home makes me feel psychologically uncomfortable.

2. The thought of purchasing a personal computer within the next twelve months for use at home gives me a feeling of unwanted anxiety.

3. The thought of purchasing a personal computer within the next twelve months for use at home causes me to experience unnecessary tension.

RESULTS

Factor Analyis

Factors were accepted based upon the criteria of accepting factors with eigenvalues greater than 1.0;

variables were accepted if their loadings exceeded .5. The results of the factor analysis are shown in Table 3.

Respective variables were then summed to form composite variables (Att2act, Risk, Finance, etc.). The first two entries indicate direct measures of attitude and risk. The next six entries are direct measures of the dimensions of risk and may simultaneously be viewed as indirect measures of the overall risk construct.

TABLE 3

FACTOR ANALYSIS OF COMPOSITE VARIABLES

Name	No. of Measures	Factors	Eigenvalue	% Common Variance
Att2act	6	1	3.8830	.647
Risk	3	1	1.5480	.516
Finance	3	1	1.6004	.533
Social	2	1	1.1190	.560
Time	3	1	1.1951	.398
Performance	3	1	1.5096	.503
Psychological	3	1	1.7982	.599
Physical	3	1	1.1842	.395

Regression Analysis

Tables 4 and 5 present the results of the regression analysis conducted to test hypotheses one and two. A composite variable of nine evaluated beliefs (shown in Table 2) called "**Ebsum**" was used to predict Attitude which was measured directly with six variables noted on pages 8-9. A composite variable of the seventeen loss expectation variables shown on pages 10-11 called "**Risksum**" (the second social risk variable was not included after coefficient

alpha calculations) was used to predict Risk which was measured directly by three measures (alpha = .69). Multiple measures of overall risk and its disaggregated dimensions have not previously been conceptually developed and empirically substantiated in the literature.

Each hypothesis was strongly supported. Specifically, direct measures of attitude were highly correlated with indirect measures of attitude (R^2=.44). Similarly, direct measures of risk were highly correlated with indirect measures of risk (R^2=.41). Both the attitude and risk measures behaved as expected. As such, cross construct comparisons may be investigated.

TABLE 4

REGRESSION OF ATTITUDE ON SUMMED EVALUATED BELIEFS

Independent Variable	Simple r	Multiple R	R2	Standardized Weight (Beta)	P
Ebsum	.661	.661	.44	.482	<.001

TABLE 5

REGRESSION OF RISK ON SUMMED RISK MEASURES

Independent Variable	Simple r	Multiple R	R2	Standardized Weight (Beta)	P
Risksum	.643	.643	.41	.452	<.001

Table 6 presents the results of a multitrait multimethod analysis conducted to test hypothesis three--that measures of risk and attitude, direct and indirect, are measures of distinct constructs.

TABLE 6

MULTITRAIT MULTIMETHOD MATRIX OF RISK AND ATTITUDE MEASURES

		DIRECT		INDIRECT	
		Att2act	Risk	Ebsum	Risksum
DIRECT	Att2act	1.00			
	Risk	-.48	1.00		
INDIRECT	EBSUM	.66	-.51	1.00	
	RISKSUM	-.28	.64	-.25	1.00

Hypothesis three was strongly supported. The correlation between direct measures of Attitude and the summed nine evaluated beliefs, the indirect measures of attitude, was .66, indicating convergent validity. Over 43% of the variance in attitude was explained by the summed predictor variable. Similarly, the correlation between the direct measures of Risk and the seventeen indirect measures that formed the Risksum predictor reflect convergent validity. The R^2 of .64 indicates that over 41% of the variance in Risk was explained by the summed risk predictor variable.

The off-diagonal entries reflect discriminant validity. The correlation of attitude with the indirect measure of

Risk was -.28. Similarly, the correlation of Risk with the indirect measure of Attitude was -.51. This pattern of results supports the hypothesis that risk and attitude are distinct constructs. Furthermore, unlike the results reported by Bearden and Mason, attitude correlated higher with the variable specifically developed to predict attitude, namely Ebsum, than it did with a variable not specifically developed as a predictor, namely risk.

Support for hypothesis three allowed for the claim to be made that risk and attitude are distinct constructs. Support for hypothesis four would lend credibility to understanding risk as being subsumed within the attitude construct. Table 7 provides information to address the fourth hypothesis.

TABLE 7

REGRESSION ANALYSIS OF ATTITUDE ON EBSUM AND RISK

Variable Entered	Multiple R	R Square Change	Prob.
Ebsum	.661	.437	<.001
Risk	.683	.030	<.01

The results strongly support hypothesis four. Theoretically, some of the beliefs that comprise Risk are identical to those that comprise Ebsum. In the elicitation technique to isolate salient beliefs, an individual is normally asked for both the disadvantages and the advantages

associated with performing some behavior. Beliefs about the disadvantages associated with the behavior and beliefs about various types of loss (risk) may ultimately comprise the salient beliefs base of attitude while also a part of the loss oriented beliefs that comprise the dimensions of Risk. Ebsum, therefore, in a situation specific context can subsume Risk as reflected in Table 7.

It would be quite inappropriate to conclude that the small contribution made by Risk towards explaining variance in Attitude may mean that Risk is an unimportant construct. Research positing that attitude models are "gain oriented models" (Evans, 1981, p.551; Humphreys and Kenderdine, 1979, p.283) is somewhat misleading. The salient beliefs that comprise the base of the Attitude may be either gain or loss oriented or both. What is important to understand, conceptually, is that Risk may be absorbed "within" Ebsum. To fully understand one's attitude, one needs to understand the contribution that risk is making to that resultant attitude.

DISCUSSION

Attitude has long been recognized as a belief-based construct. Risk, too, is a belief-based construct, a point that has not been promulgated in the literature. The construct, however, has traditionally been measured based on one's beliefs (expectations) about specified outcomes (Cunningham 1967; Schiffman et. al 1976). Given two belief-based constructs, the question remains as to how the two

constructs are related. Are the beliefs of each construct separate or do they overlap to some degree? This research was based on the following conceptualization.

Attitude has been accepted as a summary construct housing both favorable and unfavorable beliefs; risk has been accepted as a construct concerned only with the unfavorable or downside aspects of an outcome. In this research, risk was conceptualized as subsumed within the attitude construct. The thesis is that, at times, risk-based beliefs totally shape one's attitude whereas at other times, risk-based beliefs have a negligible influence on one's attitude.

What is the theoretical value of such a conceptualization? Marketing efforts, communications or otherwise, that are designed to influence one's risk inference are simultaneously shaping one's attitude. One, therefore, should attempt to influence risk inferences so as to influence attitude formation. If the beliefs that comprise risk are altered, attitude is altered. The reverse need not hold true.

This research effort is one of the first to develop multiple measures of overall risk, to develop multiple measures of the predictors of risk, and to establish the reliability of the measures. Previously, the predictors of risk (financial, physical, etc.), have been measured with single item measures which are usually summed to provide a measure of overall risk. The understanding for how risk

influences attitude formation has been hampered by not disaggregating the dimensions of risk.

Empirical results supported both (a) the conceptualization for risk and (b) the hypothesis about how risk influences attitude formation. The multiple measures for risk evidenced unidimensionality. Also the indicant of risk formed by these measures was highly predicted by the indirect measures of risk. Empirical support was also found for conceptualizing risk and attitude as distinct constructs. Even though risk is subsumed within the attitude construct, risk has distinct properties that cause it to differ from the attitude construct. Specifically, risk is a loss based construct whereas attitude, a summary construct, considers the rewards (gains) and the risks (losses) associated with an outcome. The greater the losses one associates with an outcome, the greater the influence of risk in shaping the attitude toward the behavior in question.

Future research should continue to develop multiple measures for risk, both for the construct and for its dimensional predictors. This will permit insight to a better understanding one's beliefs about an action and how communications influences those beliefs.

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