

The Effect of Self-Confidence and Anxiety on Risk Reduction Strategies for an Innovative Product

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Recently, there have been attempts by researchers to understand the types of sources consumers use to gain information for various products purchased by households (Lutz, and Reilly, 1973; Zikmund and Scott, 1973). These efforts have primarily concentrated on relatively common products or innovations that were not high in risk. The purpose of this study is to examine consumers' information seeking for an innovative product that is high in risk. In addition, consumer generalized self-confidence, specific self-confidence, and anxiety will be studied in relation to different modes of information search.

Taylor (1974) has developed a comprehensive theory of consumer risk taking. Figure 1 illustrates the choice-risk part of the theory that is examined in this study. The consumer in any choice situation is confronted with uncertainty or perceived risk. This linkage is well documented in the literature (Roselius, 1971; Bauer, 1960). However, the amount of perceived risk varies by product class (Lutz and Reilly, 1973; Zikmund and Scott, 1973). The uncertainty experienced by consumers leads to the development of risk reduction strategies. In the context of consumer behavior, risk as been viewed as containing two components: (1) uncertainty and (2) importance or danger (Cunningham, 1967). For the most part, consumers tend to reduce the uncertainty component by seeking information about the purchase decision (Roselius, 1971).

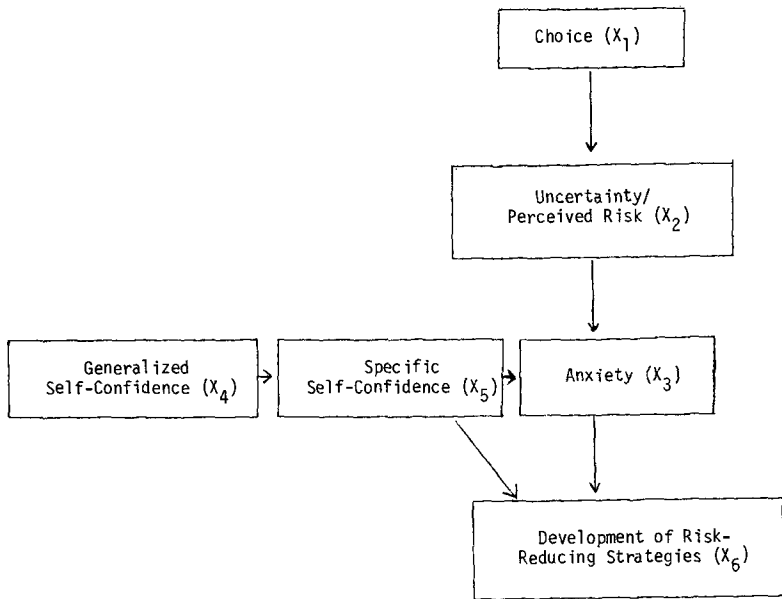


Figure 1. Relationship between choice and risk reduction strategies. (Taylor, 1974)

Empirical research on the effect of the intervening variables (self-confidence and anxiety) is far from complete according to Taylor (1974). Most studies dealing with information seeking and product choice situations have been done with relatively common products such as, automobiles (Bell, 1967), appliances (Newman and Staelin, 1972), and food products (Lambert, 1972). There have been no reported studies concentrating on the simultaneous effect of the three intervening variables on risk reduction strategies. Zikmund and Scott (1973) have reported the importance of self-esteem in reducing risk. Bell (1967) reports on the interaction between general and specific self-confidence for purchasing automobiles. Uncertainty led to seeking the support of a "purchase pal" forming a buying team with the overall result that customer self-confidence was enhanced by the pal.

Researchers have developed a useful typology of various information sources

that consumers use to reduce risk (Andreasen, 1968; Lutz and Reilly, 1973). Lutz and Reilly (1973) developed operational measures which were subsequently used by Locander and Hermann (1975) to describe the relationship between information seeking and different levels of perceived risk. However, these products have dealt with product classes familiar to most consumers, such as paper towels and a stereo. Although there have been studies dealing with relatively continuous innovations (Robertson, 1971; Lambert, 1972; Berning and Jacoby, 1974), there have been no studies that have measured consumers' risk reduction information seeking strategies toward a high risk innovation.

Robertson (1971) notes that most innovation research is done with products that are continuous innovations, i.e., mild changes in the way of doing things. Adding menthol to a cigarette is an example of a continuous innovation. For these products, consumers tend to use interpersonal sources by engaging in product-oriented conversations. With these types of innovations, consumers have experiences to share. However, Robertson (1971) theorizes that the more discontinuous the innovation, the less likely interpersonal sources will be sought. He concludes that his review of information seeking was based on few empirical findings that have not simultaneously considered multiple modes of information seeking for high risk discontinuous innovations.

The present study utilizes the Taylor (1974) framework in figure 1 to examine the relationship of the intervening variables on risk reduction strategies. This study investigates how consumers approach a high risk innovative product in terms of seeking different information sources.

METHOD

Subjects

The subjects were 365 adults contacted through a local civic club in a predominantly white suburb of Houston, Texas. The sample consisted of 189 males and 176 females with the average age of 36.8 years. The Hollingshead index (1957) indicated that the respondents were primarily from the middle and upper middle social class.

Description of Measures

Uncertainty/Perceived Risk Product

A microwave oven was chosen as the product stimulus to be considered for purchase. This product could be classified as dynamically continuous or possibly

discontinuous in Robertson's (1971) schema involving consumption patterns. In any event, the microwave represents a dramatic change in its effect on consumption patterns. Although microwave ovens have been available to consumers for quite some time, the product has not gained the market acceptance projected for 1975 (*Advertising Age*, 1975). This is due to, in part, such factors as the radiation scare started in 1973. As such, microwave ovens represent a totally new way of cooking and have received publicity that they may be hazardous to one's health. These factors indicate extremely high performance risk associated with the product. Zikmund and Scott (1973) measured perceived risk for microwave ovens and typical consumer goods like metal lawn furniture. The study showed that microwave ovens had a significantly higher risk ratings than all other products tested. Because Zikmund and Scott (1973) feared that respondents would not be familiar with the extremely high risk microwave, it was eliminated from their study after the initial comparative risk scaling.

In the present study, the subjects were asked to project themselves into the following hypothetical purchase situation. The following paragraph was developed and used by Lutz and Reilly (1973):

"You need to buy a microwave oven for your own personal use, but when you go shopping you discover that all the brands that you are familiar with are unavailable. The only brands available in the entire town are brands A, B, C, D, and E, brands which you know nothing about. Nevertheless, you need the product and therefore must make a choice among the five brands. However, for you to select a brand without any information about the brands would be virtually the same as selecting at random."

Generalized Self-Confidence (GSC)

Subjects were asked to complete the short version of the Coopersmith Self-Esteem Inventory (1970). The scale contains 25 self-administered items in which the subject answers "like me" or "unlike me." An additive score of self-confidence was then calculated for each person. Generalized self-confidence refers to the extent to which an individual believes himself to be capable, significant, successful, and worthy (Coopersmith, 1967).

Specific Self-Confidence (SSC)

This refers to the subject's confidence with respect to the decision at hand. Much of the work with specific self-esteem has been conducted in a persuasibility context (Cox and Bauer, 1964). Bell (1967) studied self-confidence and

persuasion in automobile buying. From this work, a seven point specific self-confidence measure was developed. Respondents were asked to complete a rating scale with bipolar adjectives "I would," "would not":

be confident of my ability to pick the best buy from the five available brands.

The brands (A through E) refer to the unfamiliar ones set up as part of the role playing situation mentioned previously.

Anxiety (A)

Near the end of the instrument subjects completed the Bendig (1956) Short Form Manifest Scale. This is a shortened form of the Taylor Manifest Scale (1953) which is an extensively used and validated measure of trait anxiety. It is a 20 item scale in which subjects respond "true for me" or "false for me." An additive score of deviant responses was then constructed for each subject.

Risk Reduction Strategies

These measures were based on the well established notion (Roselius, 1971; Andreasen, 1968; Howard and Sheth, 1969; Hansen, 1972) that consumers do seek information from different sources when faced with risk or uncertainty. Andreasen (1968) outlined five types of information sources from which the consumer can seek information to satisfy a particular need:

1. Impersonal Advocate (IA)—mass media advertising including reading magazine ads, listening to radio commercials, reading newspaper ads, viewing TV commercials, or looking at point-of-purchase displays.
2. Impersonal Independent (II)—checking with *Consumer Reports*, or a product test report.
3. Personal Advocate (PA)—asking sales clerk or store manager opinion.
4. Personal Independent (PI)—trying to remember what brand a friend uses, asking opinions of family members, seeking the opinion of a neighbor or co-worker.
5. Direct Observation/Experience (OE)—ask for a product demonstration, rely on past personal experience, try the product before buying, or read the information on the package.

In their original work, Lutz and Reilly (1973) used the above typology and added a sixth:

6. Pick a brand (BUY)—a behavior to go ahead and pick a brand.

The rationale for number six was that it allowed the subject to respond without being forced to select an outside information source. These six infor-

mation sources constituted the dependent measure in the present study.

All subjects were asked to respond to the microwave situation by rating their information search pattern on twenty behavioral differential items (Triandis, 1964). These items, originally developed by Lutz and Reilly (1973), measure the six information seeking strategies. The twenty items were coded from 1 (I would) to 7 (I would not) seek the particular source in question.

Procedure

A sample of 365 members were contacted by a suburban civic club. One randomly assigned adult respondent, male or female, was selected from each household. The civic club was compensated for completed interviews which were administered by using a drop off and pickup method. A professional researcher supervised and acted as liaison for the field work. The instrument was organized so that subjects responded to the microwave purchase situation and corresponding behavioral differential scales in the first part of the questionnaire. Then measures of specific self-confidence, anxiety and generalized self-confidence were taken followed by a demographic section.

Design

The data were analyzed using a 2 x 2 x 2 ANOVA. Groups were broken in a median split for anxiety (low 0-3, high 4-6), generalized self-confidence (low 7-20, high 21-25) and specific self-confidence (low 2-7, high 1). Incomplete questionnaires led to the deletion of 53 respondents leaving a sample of 312 consumers' responses suitable for analysis.

RESULTS

A summary of the statistical findings are given in table 1. As can be seen from the table, differences in the main effects of anxiety (A) and generalized self-confidence (GSC) are unrelated to information seeking strategies. This suggests anxiety is not very important as a mediating variable as theorized by Taylor (1974) in figure 1. For a product like a microwave oven, which is very high in risk, the effect of anxiety should be heightened resulting in more information search effort by the highly anxious consumers. However, this was not found in the present study. The fact that generalized self-confidence did not produce any significant differences across the information sources is in keeping with the Zikmund and Scott (1973) finding for common consumer purchases.

Table 1
ANOVA Results for Information Seeking for a Microwave Oven: F = ratios

Information Seeking	Anxiety	GSC	SSC	SOURCE			
				AxGSC	AxSSC	GSCxSSC	AxGSCxSSC
Impersonal Advocate (IA)	< 1	< 1	4.19*	< 1	4.64*	9.51**	< 1
Impersonal Independent (II)	< 1	< 1	8.23**	1.17	< 1	< 1	< 1
Personal Advocate (PA)	< 1	2.46	3.08	< 1	< 1	8.59**	1.89
Personal Independent (PI)	< 1	< 1	1.15	< 1	< 1	< 1	< 1
Observation/Experience (OE)	< 1	< 1	25.00**	< 1	2.93	8.57**	< 1
Pick a Brand (BUY)	< 1	< 1	23.54**	< 1.95	4.60*	4.30*	< 1

* $p < .05$.

** $p < .01$.

These findings are also in keeping with the results reported by Locander and Hermann (1975) who examined both variables for products containing less risk and not innovative in nature.

The principal construct influencing information seeking was specific self-confidence. For all significant information strategies, the high specific self-confidence group was more prone to seek the source than the low group. It is interesting to note that for this high risk innovation, that neither of the two personal sources were significant for the SSC variable. Consumers with high specific self-confidence displayed stronger intentions to seek the impersonal (IA and II) and the two self sources (OE and BUY).

The tendency to seek different sources can be seen by examining the overall means in table 2. It should be noted that the two most favored information sources are the impersonal independent (i.e., *Consumer Reports*) and then relying on one's self observation and experience. Overall, the salesperson (personal advocate) was the least favored strategy behind just randomly picking a brand. Although the interpersonal source (PI) did not produce significant differences between the high and low SSC groups, it can be seen from table 2 that PI was the third most favored source. Overall, it appears that the tendency to seek friends' opinions reported by Robertson (1971) is present in these data. However, the data here support Robertson's proposition that the interpersonal source would be less valuable with a risky innovation because the product class is not widely adopted by fellow consumers. It is also interesting

to note from table 2 that the high SSC group rated the personal advocate (sales clerk) as the least favored source, but the low SSC group appear to express their low confidence by rating the BUY strategy as their last course of action.

Table 2
Overall Means for Information Seeking for
Microwave Oven by Source

<u>Source</u>	<u>High SSC</u>	<u>Low SSC</u>	<u>Overall Mean</u>
Impersonal Independent (II)	1.80	2.42	2.14
Observation/Experience (OE)	1.93	2.65	2.33
Personal Independent (PI)	2.74	2.96	2.86
Impersonal Advocate (IA)	2.89	3.15	3.03
Pick a Brand (BUY)	2.92	4.33	3.69
Personal Advocate (PA)	3.66	3.86	3.77

Note: 1 = "would" and 7 = "would not" seek a particular source.

Examining the SSC findings in table 1 in light of the overall importance of sources given in table 2 seems to indicate the large F statistic ($F = 25.00$) found for observation/experience reveals the importance that consumers place on their own evaluative abilities. Likewise, the high SSC group of consumers displayed a significantly stronger tendency to consult objective type sources like the product testing featured in *Consumer Reports*. This source might be useful in alleviating fears about the harmful radiation problems with certain brands of microwaves.

The A x SSC result for the BUY strategy is an ordinal interaction as is illustrated in figure 2. Note that anxiety tends to reduce the information seeking effect of the SSC variable with extremes occurring in both low anxiety conditions. A similar result was found for the IA strategy.

The most important interactions found in this study were the GSC x SSC results shown in table 1. For two of the four significant interaction terms (OE and BUY), the GSC and SSC results were similar to the ordinal interactions shown in

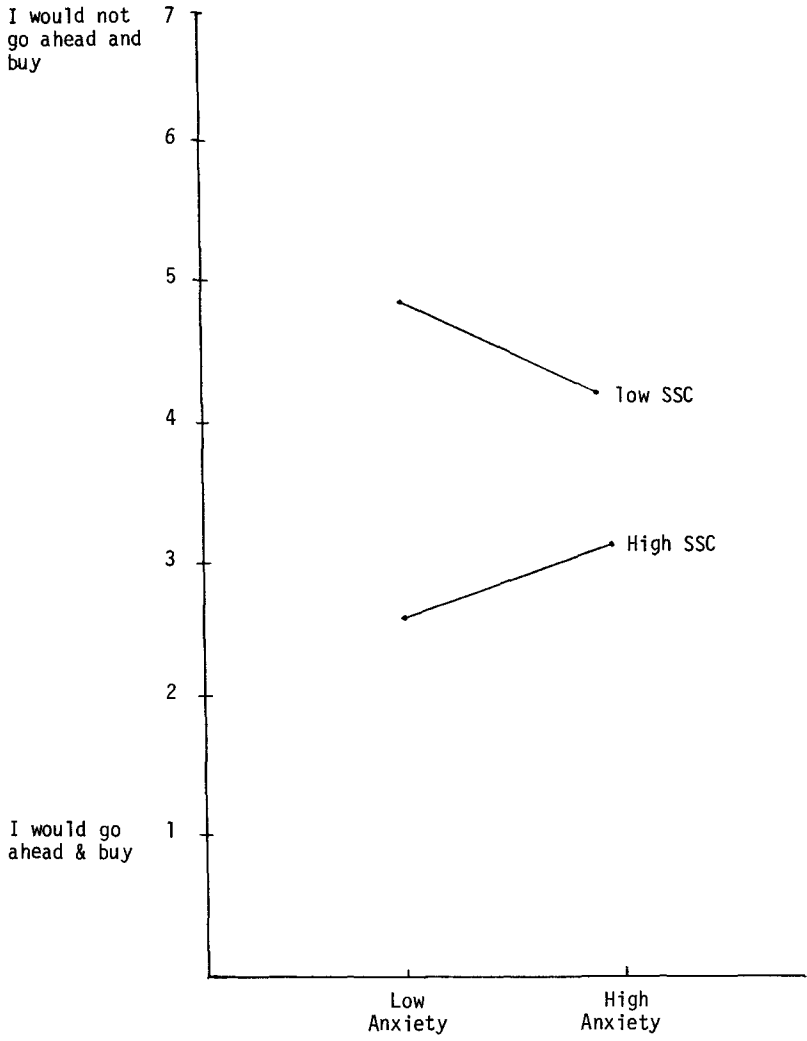


Figure 2. Anxiety x SSC Ordinal Interaction for the Buy Strategy

figure 2. In this case, however, the GSC variable acts to dampen the effect of specific self-confidence. It should be noted that the Spearman correlation coefficient between SSC and GSC was $-.157$ (significant at $p = .005$). This finding suggests that the operational definitions are measuring separate constructs.

For the significant GSC x SSC term with respect to PA and IA strategies, the interactions were disordinal. Figure 3 presents a graphing of the GSC x SSC disordinal interaction for the IA strategy. Those high in specific self-confidence displayed the strongest tendency to seek the IA source is in the low GSC condition. However, the effect of high generalized self-confidence does increase the tendency of the low SSC group to seek out the IA source. These findings suggest that specific self-confidence is the important variable in explaining the tendency to seek the IA source as a risk reduction strategy.

Overall, the data in table 1 suggest that it is the consumers' own confidence in the decision task at hand that leads to information search. This was found for both the main effects and interactions. This is particularly interesting in light of the fact that the product stimulus was a high risk innovation. The finding that the personal sources (PI, PA) were not the first sources consulted in seeking information about an innovation is in keeping with the results reported by Rogers and Shoemaker (1971). That is, for a sample composed primarily of non-innovators one might expect that the personal sources would not be the most important mode of risk reduction.

DISCUSSION

The findings strongly indicate that anxiety and generalized self-confidence have a minimal effect on consumer risk reduction strategies. For such a high risk innovation one would expect the anxiety variable to be more important in explaining risk reduction strategies; however, this was not the case. Consumers' specific self-confidence proved to be the significant construct in explaining information search patterns.

Consumers tended to favor two information sources, one independent and one self source, before seeking word-of-mouth information. The most favored source, impersonal independent, would yield the most objective test type data in addition to brand ratings. As such, for a high risk innovative product, *Consumer Reports* type of source yields the most scientific test information available to consumers. The importance of the specific self-confidence variable was further documented in table 2 by consumers rating their own observations and experience as the second most important source of information. It appears that the tendency for consumers to seek sources that are likely to provide useful

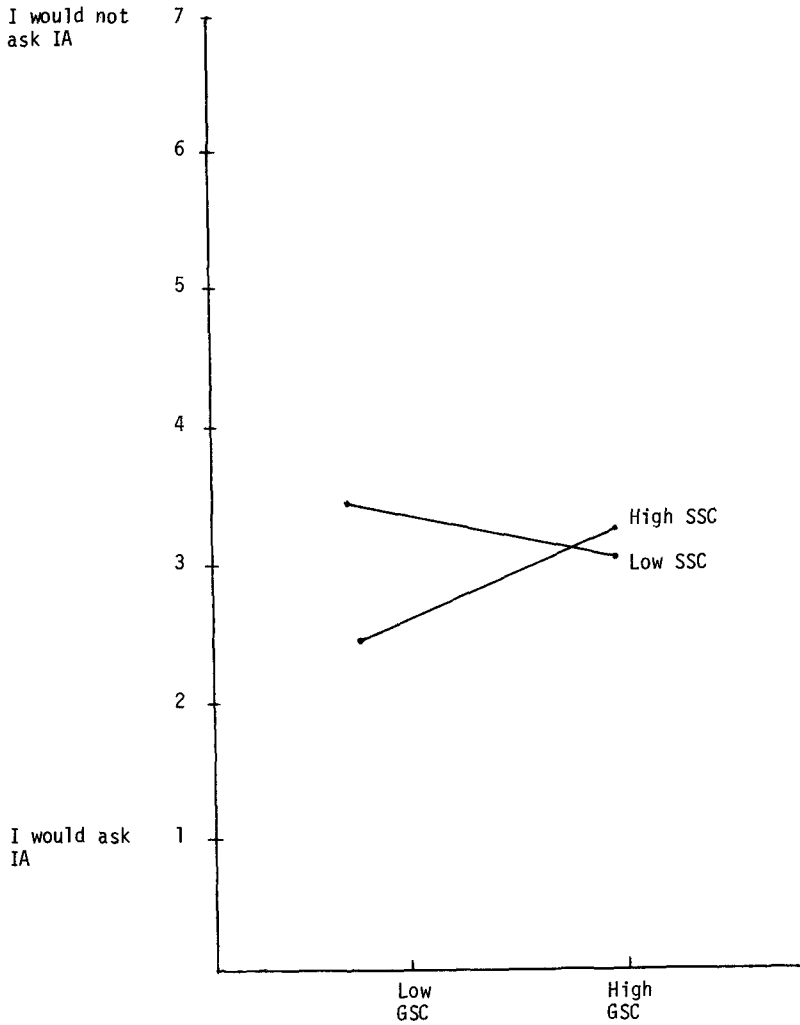


Figure 3. GSC x SSC Disordinal Interaction for the Impersonal Advocate Strategy

(Hansen, 1972) information is pertinent to the present study. The ability of a source to provide the consumer with information that will assist in discriminating between alternatives reduces the amount of evaluative effort that must be put forth to select a brand. If the source provides concrete data that is judged to be credible, then consumers should view the source as valuable. In dealing with the high risk microwave oven, it appears that consumers did seek the two most discriminating and credible sources, *Consumer Reports* type of publication and their own judgement.

The innovation literature (Robertson, 1971) well documents the use of word-of-mouth sources for lower risk innovations. This study showed that consumers change their priority search patterns for risky innovative products. This fact that consumers' specific self-confidence played such an important role in explaining the tendency to seek evaluative, independent sources should be of interest to consumer researchers. This suggests to governmental and consumer action groups as well as firms interested in designing efficient communications to the consuming public, that consumers do rely on objective data. They do seek sources that will yield discriminating information to minimize the uncertainty of purchasing a high risk innovation.

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