



PLACE IN RETURN BOX to remove this checkout from your record.
TO AVOID FINES return on or before date due.

DATE DUE	DATE DUE	DATE DUE
_____	_____ 08/25/2000	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

MSU Is An Affirmative Action/Equal Opportunity Institution

c:\circ\datedue.pm3-p.1

**AN INVESTIGATION OF THE ALLOCATIVE ROLE
OF PRICE IN CONSUMER CHOICE**

by

Dogan Eroglu

A DISSERTATION

**Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of**

DOCTOR OF PHILOSOPHY

**Department of Marketing and
Transportation Administration**

1991

ABSTRACT

AN INVESTIGATION OF THE ALLOCATIVE ROLE OF PRICE IN CONSUMER CHOICE

By

Dogan Eroglu

The primary objective of this study was to examine how consumers use price in their decision processes. Four roles for price were identified from the literature: The attribute role, where individuals are willing to trade-off higher prices for other attributes; the constraint role, where the individuals are not willing to make trade offs beyond a pre-set price level; a dual role, where individuals use price first as a constraint and then as an attribute in the same decision problem; and an informative role, where individuals infer quality from price.

A conceptual model based on the theory of goal-directed behavior was developed to generate propositions relating reference price and price differences to role of price. An experiment (n=286), where reference price and price differences were manipulated, was conducted with two different product categories.

The first proposition that higher reference prices would increase the likelihood of observing price in the attribute role had weak support mainly because most subjects, irrespective of different experimental conditions, used price in the attribute role. The second proposition that

higher price differences would increase the likelihood of observing the constraining role was strongly supported. It was observed that a higher reference price also increased the likelihood of price playing the constraint role. Further analyses showed that this unexpected relationship was due to the fact that absolute price differences, as opposed to relative price differences, were more effective in forming price difference perceptions of individuals. This finding is important since it contradicts a popular belief concerning price difference perceptions of individuals.

Certain hypotheses which focused on the combined effects of reference price and price differences were also tested. As hypothesized, the dual role was the most likely role to be observed in the high price and high price difference condition. Similarly, the attribute role was the most likely role in the high price and low price difference condition. Product knowledge and product involvement, which were included in the analyses as covariates, did not have significant effects on the role of price.

To
Nadiye and Halil Eroglu

ACKNOWLEDGEMENTS

The challenge of acknowledging those who have contributed to this dissertation expands enormously as I try to reflect the true depth of my gratitude. I wish to thank all my committee members for letting me pursue my goals and helping me realize them. They all pushed me to extend my reach and yet realized my limitations. Dr. Cornelia Droge, Dr. John E. Hunter, Dr. Thomas J. Page, Jr., and Dr. R. Dale Wilson were involved in all phases of the dissertation beyond ordinary levels. Their critical, creative, and constructive feedback truly improved the quality of the research. I am grateful to Dr. Wilson who, as a chairman, also wonderfully managed the whole process and ensured its smooth completion.

I can not express my appreciation enough to those who influenced me in more ways than they realize and educated me to a level where I could handle the challenges of the dissertation research. I would like to especially thank Dr. F. Sam Carter, Dr. Gilbert D. Harrell, Dr. Stanley C. Hollander, and Dr. Glen S. Omura.

My deepest gratitude goes to those who suffered as I tried to realize my ambition and yet supported me with love and patience: Sevgin, without whom I would not have envisioned facing the challenge; our daughter, Zeynep, and our son, Kerem, whose first complete sentences were "Daddy is studying."

TABLE OF CONTENTS

	Page
LIST OF FIGURES	ix
LIST OF TABLES	x
CHAPTER ONE - INTRODUCTION	1
Objectives and Domain of The Study	2
Role of Price in Choice	5
Evidence for the Suggested Roles of Price	6
CHAPTER TWO - LITERATURE REVIEW	11
Action Theory and Goal Directed Behavior	12
Consumer Decision Making	14
Maximizing Utility	16
Reduction of Perceived Risk	18
Facets of Perceived Risk	23
Summary of Major Arguments & Substantive Hypotheses	30
CHAPTER THREE - METHODOLOGY	35
Introduction	35
Overview	35
Design	36
The Study	44
Phase I	44
Phase II	59
Phase III	60
CHAPTER FOUR - DATA ANALYSIS AND FINDINGS	64
Introduction	64
Profile of the Subjects	64
Measure Reliabilities	67
Statistical Hypotheses	74
Test of Hypotheses	78
Summary	91
CHAPTER FIVE - SUMMARY AND DISCUSSIONS	93
Summary	93
Important Findings and Implications	95
Limitations	106

Contributions	108
Future Research Directions	111
APPENDICES	
Appendix 3.1 Initial Product List	113
Appendix 3.2 Product Category Rating Instrument For Judges	114
Appendix 3.3 Product Category Rating Instrument For Self	119
Appendix 3.4 Ratings on Twelve Product Categories	124
Appendix 3.5 Decision Matrix	125
Appendix 3.6 Original Perceived Risk Scale Items	126
Appendix 3.7 Sixteen Item Perceived Risk Scale	128
Appendix 3.8 Product Knowledge Scale - VCR	130
Appendix 3.9 Product Knowledge Scale - Dryer	132
Appendix 3.10 Role of Price Measure I	134
Appendix 3.11 Role of Price Measure II	135
Appendix 3.12 Price and Repair Rate Information for the Treatment Conditions	136
Appendix 3.13 Repair Rate Calculations	137
Appendix 3.14 Human Subjects Material	138
Appendix 3.15 Survey Instrument	146
Appendix 3.16 Data Collection Places and Dates	161
Appendix 3.17 Sample Letter to Fund Raisers	162
Appendix 4.1 Demographic Profile of The Subjects	164
Appendix 4.2 Coding Instructions For Role of Price ...	165
Appendix 4.3 Agreement Between Judges: Role of Price Instrument I	166
Appendix 4.4 Agreement Between Judges: Role of Price Instrument II	167
Appendix 4.5 Matching The Dependent Variable Measures.....	168

Appendix 4.6	Coding Instructions For Product Knowledge Scales	169
Appendix 4.7	Distribution of Role of Price by Experimental Condition	173
Appendix 4.8	Role of Price By Experimental Condition.....	174
Appendix 4.9	ANOVA: Effects of Independent Variables on Role of Price.....	175
Appendix 4.10	ANCOVA: Original Design With VCR Only and Original Design With Dryer Only	176
Appendix 5.1A	Brand Choice by Role of Price: Dependent Measure I.....	177
Appendix 5.1B	Brand Choice by Role of Price: Dependent Measure II.....	178
Appendix 5.2	ANOVA: Effects of Price and Product Category on Perceived Risk.....	179
BIBLIOGRAPHY		180

LIST OF FIGURES

	Page
Figure 2.1 A Model of Goal Directed Behavior	13
Figure 2.2 Goal Directed Behavior in a Purchase Context	14
Figure 2.3 Goal Directed Behavior - Model Modification I	23
Figure 2.4 Model Modification II	28
Figure 2.5 Final Model	29
Figure 3.1 Experimental Design	37
Figure 3.2 Control of Important Variables	43
Figure 3.3 Schema of the Experimental Procedure	63
Figure 4.1 Levels of The Independent Variables and Role of Price	75
Figure 4.2 Distribution of Role of Price by Experimental Condition	76
Figure 4.3 Price Levels by Role of Price	85
Figure 4.4 Price Difference by Role of Price	85
Figure 4.5 Price Level by Price Difference: Dual Role.....	87
Figure 4.6 Price Level by Price Difference: Attribute Role	87
Figure 4.7 Absolute Price Differences by Role of Price	89

LIST OF TABLES

	Page
Table 4.1 ANCOVA: Independent Variables' Effects on Role of Price	82
Table 4.2 Correlation Between the Covariates and Role of Price	83
Table 5.1 Summary of Subjects' Choices and Use of Price	97
Table 5.2 Crosstabs: Brand Choice by Role of Price.....	100

CHAPTER ONE

INTRODUCTION

Most of the pricing techniques in marketing textbooks, as well as in more advanced reference books, still attempt to answer pricing puzzles with the traditional accounting- or economics-based prescriptions. In these models, prices are often set to cover costs, maintain a desired level of return on investment, or meet a similar financial goal (Nagle 1987 p. 2). It is difficult to argue the importance of such concerns. However, it is equally obvious that a major component--consumer response--is not adequately incorporated into most normative models. Despite the strong logic behind these methods, there is an obvious need to better represent consumer response to the price variable. Hence, it would be most appropriate to label these existing pricing prescriptions as incomplete rather than incorrect.

The major purpose of this study is to contribute toward generating a more complete normative pricing model. To this end, answers to some basic consumer behavior related pricing questions will be sought. These findings will also be

valuable for fine tuning the more sophisticated choice and preference models in marketing which focus on consumer response.

An identification of the more specific objectives of the study will follow. Next, evidence from the literature on various roles of price in consumer decisions will be provided. Finally, an overview of the proposed model will be presented to facilitate a better understanding and appreciation of the literature review.

Objectives and Domain of the Study

To claim that the price of a product is a determinant of purchase choice would probably not generate major controversy. In classical economic theory, the market-determined price has been viewed as the sole determinant of an individual's demand. This school of thought asserts that for a given price, the individual makes the purchase decision based on total income and the prices of substitute goods (e.g., Hirshleifer 1980, p. 90). Later research in both economics and marketing has introduced modifications to this view. Currently there seems to be a consensus that price is a major determinant of purchase decisions, but certainly not the only one. This knowledge introduces two basic questions regarding the impact of price relative to other decision variables in the purchase decision. First, the degree of importance that price has in choice becomes a central issue. Second, the role which price plays in the decision process also emerges as an important concern.

The role of price in purchase decisions is the major focus of this study and it will be investigated within the following choice context: The "buy" versus "not buy" decision is assumed to be already made, and the choice among alternatives is the relevant decision problem. Consequently, the role of price in choice among alternatives is implied when reference is being made to the role of price in purchase decisions.

This study will attempt to accomplish the following theoretical and practical contributions. First, it has been argued that consumer behavior-related pricing research lacks a theoretical framework (Rao 1984). The first contribution of this research is to build the foundations of a general theoretical framework. The proposed conceptual model serves to integrate the existing literature and may be used to guide future research on price as a decision criterion. Second, delineating the conditional role that price plays in certain situations would add to the comprehensiveness and precision of choice or preference models used in marketing. Finally, such a knowledge would be helpful in making product development as well as pricing decisions.

The objectives which are stated above will be achieved by accomplishing two tasks. First, a model suitable for examining the role of price in purchase decisions will be developed. Second, a set of hypotheses pertinent to the role of price will be extracted from the model and empirically tested.

The basic assumptions and orientation of the study will be outlined to facilitate a better understanding of the

arguments advanced. First, it should be noted that the present study will focus only on the allocative role of price. The informative role of price (i.e., individuals who are inferring quality from price) will be excluded to avoid potential methodological complications. Furthermore, the present study will focus on how individuals make price-quality trade-offs once they have made quality judgments. Consequently, the propositions in this paper should be viewed in recognition of the fact that the impact of informative role of price is treated as a constant.

Second, the research question will be examined in a static context where all relevant, time-related variables are not considered. While adopting a dynamic approach would be more desirable, the difficulties associated with the dynamic examination of the decision process and the relatively sparse literature available on the issues of interest necessitate taking a static approach. The assumption is made here that an understanding of the process in a static context will contribute to the future development of dynamic models addressing the same issue. Therefore, important aspects such as past prices, price changes, future price expectations, etc., are not taken into account in this study. Third, the research focuses on individual decision making even though it may be more realistic to consider a group decision making context for many product categories such as cars, houses, and furniture.

Role of Price in Choice

Previous research has identified two major roles that the price variable plays in the context of consumer decision making. First is an informational role. There is a long history of research in marketing which demonstrates that price may be used as an informational cue in inferring quality, particularly in situations where other information is not available (Rao 1984, Zeithaml 1988). Second, and the one largely overlooked in marketing, is an allocative role that price is suggested to play in purchase decisions.

Consumers use price in determining how they will allocate their income among alternative goods. The economics discipline has mainly focused on the allocative role of price (Johnson and Kellaris 1988). Recently, it has been suggested that the allocative role of price in purchase decisions may take more than one form. Rao (1984) argues that price can be used as a constraint in the final purchase decision or, alternatively, it can enter into the decision as an attribute in the evaluation stage, along with other attributes. The underlying premise of the research reported here is that the different roles of price suggested in the literature are not necessarily incompatible. Instead, it is more likely that one or both of these roles are instrumental in consumer choice depending on a number of factors.

Since the allocative role of price is the focus of this study, a discussion of the two different forms this role might assume is in order, namely as a constraint and as an attribute. A constraint role for price (or any other decision factor for that matter) is in effect when

alternatives are eliminated (or chosen) based on price without further consideration of other attributes. Conversely, an attribute role is displayed when all the other salient attributes are simultaneously considered along with price. Put differently, if the consumer is considering trade-offs between the price of the product and other salient product attributes, then an attribute role is displayed.

There is, however, at least speculation and some evidence (Park et al. 1981) that price can play both of these roles within the same decision problem. In other words, consumers may use price first as a constraint to generate an evoked set, and then use it as an attribute to make a final choice among the set's contents. In such cases, price will be seen as playing a dual role as discussed in the next section.

Evidence for the Suggested Roles of Price

Constraint Role

When price is used as a constraint, alternatives are eliminated or chosen based on their prices without further consideration of other attributes. Traditional economic theory posits that individuals make purchase decisions on the basis of how the price of a good impacts their budgets. Income is finite but the desire to consume is not, and thus all desired goods can not be purchased given available resources. Consequently, the consumer has to make trade-offs and decide which of the goods will be purchased. In this context, price plays a constraint role because it

does not enter into the consumer's initial analysis as an attribute. In other words, all salient attributes other than price affect the utility derived from the product which, in turn, determine the shape of the indifference curves. Price, on the other hand, along with income, determines the budget line which acts as a constraint on the amount of total utility the consumer can buy.

Another concept which suggests that price is used as a constraining variable is reservation price. Reservation price is defined as the highest price that an individual will pay for a certain product and accordingly, only consumers whose reservation prices are higher than the market price make purchases. While some researchers explain the formation of reservation prices solely on the basis of utility curves and the budget line (e.g., Watson and Holman 1977, p. 75), others offer different explanations. For example, Goering (1985) incorporates consumer learning through trial into this process, and contends that individuals' expectations about product quality and post-trial revisions of these expectations enable the formation of reservation prices for a brand. There have also been differences in terms of the unit of analysis to which reservation price has been attached. For example, while Watson and Holman (1977, p. 75) focus on the product category and Goering (1985) focuses on the brand, Gould and Sen (1984) refer to reservation prices for attributes. Despite such differences, the implications of the reservation price concept are identical. Basically, it is posited that an individual who forms a reservation price is

not willing to pay more than this price for the product in question.

Similar concepts such as evoked price, fair price, and price willing to pay have been introduced as alternatives to reservation price (Rao 1984). Likewise, Monroe (1973) reviews findings which indicate that consumers use target prices while shopping and refers to such constructs as standard prices. The underlying premise of all of these constructs is that they view price as a constraining variable in the decision process.

Price as an Attribute

This view assumes that consumers simultaneously consider all relevant factors (attributes) in making choices and that price is one of these factors. Except for a few studies (e.g., Monroe 1977, Rao 1984), marketing literature does not explicitly mention the attribute role of price. Rather, such a role is implicit in the way price has been treated in marketing research. For example, it is claimed that in the more recent applications of conjoint analysis in marketing, price is almost always included as an additional attribute (Mahajan, Green, and Goldberg 1982). Similarly, Monroe (1977) suggests that price has been treated as an attribute, and the "...role of economic constraint has not been directly tested" in price perception research (p. 295). The claim that consumers would, under certain conditions, trade-off between price and utility (or quality) also has common-sense appeal. For many products which are perceived to be differentiated across brands, individuals are faced

with the problem of having to pay more for a brand which they "know" is better.

Given the strength of the arguments on both of the roles of price, this paper proposes that price may play either or both of these roles depending on certain factors. In fact, one of the more significant contributions of this dissertation is its attempt to identify some of these factors.

Dual Role of Price

As Wright (1975) and Bettman (1979, p. 184) point out, some of the noncompensatory models (particularly conjunctive and disjunctive) will often fail to identify one ultimate choice. Consequently, the decision maker has to go through a second stage (or more) to eventually reach a final choice. This second stage may consist of a rule as simple as "pick the first satisfactory alternative" (Wright 1975) or as extensive as going through an optimization process to identify the best alternative from the final set. This process by which first an evoked set is formed and second, comparisons across the remaining alternatives are made is called a "phased strategy" (Bettman 1979, p. 184).

Similarly, Malhotra (1982) claims that such multi-stage decision processes characterize consumer decision making in many situations.

It is possible that price will be used as a constraint at the first stage of a phased strategy. If, at the next stage, a "linear compensatory" model is used to evaluate the remaining alternatives, as suggested by Bettman (1979), it is possible that price is again included among the relevant

attributes. In this dissertation, it is proposed that price can be used at both of these stages playing a dual role; first, as a constraint and second, as one of the relevant attributes. There is also empirical evidence supporting this possibility. Recently, Ericson and Johansson (1985) demonstrated that individuals used price in the dual role as they were purchasing cars. Park et al. (1981) provide similar evidence in a study which examines actual house purchases. Their findings indicate that buyers initially set target prices (constraint role) and, as they made their final choices, many paid prices different from their target prices because they traded off a higher price for other desirable attributes such as a bigger yard (attribute role).

Having identified the possible roles price can play in consumer choice, the next challenge becomes one of identifying the factors which have an effect on the probability of observing any one of these roles in a given situation. The next chapter attempts to develop the theoretical basis which will enable these factors to be identified and certain propositions to be derived.

CHAPTER TWO

LITERATURE REVIEW

The first axiom of the proposed model claims that decision making in a purchasing context is a goal-oriented behavior. Accordingly, action theory, which posits that human behavior is directed toward the accomplishment of goals (Frese and Sabini 1985) is adopted as the appropriate theoretical framework to guide the present study.

First, a brief review of action theory and its propositions will be presented. This review will followed by introducing the literature on the different roles of price in choice and on consumer decision making processes which are central to the research problem. The major objective of the study, role of price in choice across alternatives, is then to be examined within the framework facilitated by this review.

Action Theory and Goal-Directed Behavior

Cranach et al. (1982) identify the domain of action theory as the types of behavior which are "conscious, directed toward a goal, planned and intentional (or willed)" (p. 16). This definition clearly identifies different types of behavior which can be studied by an action-theoretic framework. For example, building a cabinet is one behavior which falls in the domain of action theory whereas sneezing does not (Frese and Sabini 1985). The present study interprets consumer decision making as goal oriented. The basic assumption leading to this axiom is that decision making involves some level of conscious cognitive activity and consumers would not engage in this activity unless there is a desired end-state.

The marketing discipline has both implicitly and explicitly suggested that consumer behavior is goal oriented. For example, the marketing concept, as it refers to "the needs of consumers," acknowledges the motivational aspect of consumers in trying to satisfy their needs. Cox (1967) and Peter and Olson (1987, p. 237), among others, have explicitly contended that consumer behavior is goal oriented. One assumption which is made in this study is that decision making is an integral part of consumer behavior and, as such, is in itself a type of behavior.

The basic model of action theory has been most frequently used for normative purposes in marketing and management (e.g., Granger 1964). However, action theory has also been utilized in theoretical research in marketing. Fine's (1980) work, where this basic framework is used for

segmentation in a social marketing context and Olshavsky's (1985) conceptual work regarding a theory of choice are some examples.

According to Miller et al. (1960), behavior is organized in a hierarchical fashion (p. 15). In its simplest form, there is a goal which leads to a plan designed to achieve that goal, followed by the execution of the plan (see Figure 2.1). The plan consists of molar and molecular units of analysis, strategy and tactics, respectively. Conceptually, this small system can be viewed as a component of an endless chain of supersystems and subsystems. In other words, it is possible to represent a tactical subgoal of the system in exactly the same manner the system itself is represented.

GOAL -----> PLAN -----> BEHAVIOR

Figure 2.1

A MODEL OF GOAL DIRECTED BEHAVIOR

The key concept, goal, is defined as "the condition at the end of an action, imagined before or during an action" (Cranach et al. 1982, p. 17). The emphasis on "imagined" has philosophical significance in that action theory has been criticized by some to imply that the future acts back on the past (Silver 1985). In other words, the possibility that the output shapes the process which determines this same output is not accepted. Although action theory is teleological in the sense that it sees behavior as influenced by purpose, it is not the final state that causes the behavior but the foresight or anticipation of it.

It should be noted that the end-condition mentioned above could as well be termed objective or purpose. This study treats such terms--as well as plan, strategy, and tactics--as synonymous and uses them only to portray a sense of the hierarchy.

Consumer Decision Making

At this stage it is necessary to translate the general theoretical framework into the consumer decision making context and to review the literature that provides support for the proposed relationships. Therefore, Figure 2.2 is presented as a modified model which posits that individuals purchase a product for a specific purpose. This purpose determines the kind of general strategy they will follow in making their choice. Finally, the chosen strategy will lead them through a set of decision making steps (i.e., behavior).



Figure 2.2

GOAL DIRECTED BEHAVIOR IN A PURCHASE CONTEXT

The fact that consumers have purchase goals (e.g., Wilkie 1986, p. 11) and that they engage in behaviors such as information acquisition and information processing is widely accepted. The significance of the purchase goal in the decision process comes from its impact on defining the decision problem. More specifically, framing of decisions, as it is called, is an initial step in decision making which

affects the outcome of the decision process (Kahneman and Tversky 1979, Tversky and Kahneman 1981, Puto 1987, Bettman and Sujan 1987). For example experiments by Schoemaker and Kunreuther (1979), and Hershey and Schoemaker (1980) demonstrated that individuals indicated different preferences for different alternatives in two situations where the problems were identical in outcomes and probabilities but were worded, that is, framed differently (e.g., 1/3 probability that 600 people will be saved and 2/3 probability that nobody will be saved, versus 1/3 probability that nobody will die and 2/3 probability that 600 people will die; both in a situation where there are 600 ill people). Tversky and Kahneman (1981) replicated the same experiments with different choice problems. They contend that individuals' preferences are shaped by the way the decision problem is framed. The present study posits that purchase goal is the major determinant of how the decision problem is framed and that the framing affects the outcome via the choice of a decision strategy. Monroe (1977) cites evidence which shows that purchase purpose even affects perceptions of price. Specifically, in an experiment where all subjects were given the same price for the same pair of pants, those who were told that the purchase was for informal wear rated price higher than those who were told that the pants were for semi-formal wear.

Next, the proposition that consumers have what can be called overall decision strategies will be justified along with the identification of the alternative strategies. The interpretation of the existing literature leads one to

believe that at least two such general strategies exist. Peter and Tarpey (1975) term these strategies as "selecting the brand that minimizes expected loss--perceived risk," and "selecting the brand that maximizes expected gain--perceived gain" (p. 29). Since both of these strategies can be appropriately classified as different forms of the classical utility maximization model, a discussion of the utility maximization model becomes necessary.

Maximizing Utility

Historically, the popular decision models used in economics find their roots in the Theory of Riskless Choice. This theory is based on the assumption of the economic man who has two properties. As Edwards' (1954) review points out, the economic man is assumed to be completely informed and rational. The first assumption implies that the individual knows alternative actions and their respective outcomes. The second assumption asserts that the individual uses this information to maximize utility. This basic model has been revised first by incorporating probabilities of the occurrences of outcomes (e.g., von Neuman and Morgenstern 1944); then by substituting probabilities with subjective probabilities which are actually beliefs about the objective probabilities (Savage 1954).

Although there are many variants of the expected utility model, they all share similar characteristics in terms of the individual's decision processes. Namely, they suggest that there is an operation that combines probabilities and outcomes multiplicatively to form "expected outcomes" and

additively integrates them. They are also holistic models in that they evaluate each alternative independent of the others. After expected utility is assigned to each, the one with the highest expected utility is chosen.

Despite their popularity, expected utility (EU) based models have been criticized both as descriptive and predictive models and there is empirical evidence to challenge all axioms of the EU model (Shoemaker 1982). Consequently, several alternative decision models have been built around Simon's (1955) bounded rationality view. Basically the individual is seen as an imperfect information processor due to narrow perception, sequential central processing, and limitations in short-term memory capacity (Simon and Newell 1971). Therefore, the individual is compelled to simplify the decision task.

Although these alternative decision models are different in form, the assumed decision objective is identical. What changes is that "maximum" utility is seen as unrealistic and is replaced with a "satisficing" level of utility.

One common way to find satisficing solutions to decision problems is to evaluate and compare the positive outcomes of different alternatives to maximize the expected gain. There are many examples in the marketing literature of the "...so-called attitude models which focus on the benefits of products which are positively evaluated and (have) little consideration of expected negative utility" (Peter and Tarpey 1975, p. 29). Disjunctive decision models also stress the positive end of attributes: Brands are rated high only when considered superior on the relevant

attributes (Wilkie and Pessemier 1973). The importance of the positive outcomes for the consumers has also been popular with normative models. For example, Haley's emphasis on the "...benefits which people are seeking in consuming a product" (1968, p. 30) has been very influential in segmentation studies.

Focusing on the negative aspects of a decision to avoid expected loss is another possible way to reach satisficing utility (from here on, perceived risk and expected loss will be used synonymously). In this vein, the marketing literature has developed a rather rich stream of research mainly based on Bauer's (1960) claim that:

"Consumers characteristically develop decision strategies and ways of reducing risk that enable them to act with relative confidence and ease in situations where their information is inadequate and the consequences of their actions are in some meaningful sense incalculable" (p. 25).

Reduction of Perceived Risk

Perceived risk, rather than actual risk, has been the focus of interest in marketing and will be used in this study. Perceived risk will be treated as a two-component construct defined by the importance of loss and the probability of loss. This definition has its advocates in marketing (e.g., Vincent and Zikmund 1976, Dowling 1985) and is only slightly different from others as outlined below.

The concept of perceived risk in marketing differs from the traditional definition of risk in economics, which makes no distinction between negative outcomes (losses) and positive outcomes (gains). However, more recent economics

literature based on Prospect Theory (Kahneman and Tversky 1979) strongly claims that individuals handle "risk" differently depending on whether they frame the outcome as a "gain" or a "loss." More specifically, they assert that more "risk" taking occurs when individuals frame the outcome as a loss and more "risk" avoidance takes place when the outcome is framed as a gain.

A consensus on the definition of perceived risk has yet to emerge in the marketing literature. However, the definitions mostly support the view that perceived risk has two determinants, and that one of the determinants has to do with the lack of certainty about the outcome. "Probability," "uncertainty," and "ambiguity" are concepts used to capture this lack of certainty dimension, sometimes without clear definitions. The second determinant relates to the magnitude or the importance of the magnitude of the loss. Originally, Bauer's (1960) formal definition introduced the two dimensions; uncertainty and adverse consequences. Dowling (1986) reports that the uncertainty dimension has been used in much of the subsequent research. Adverse consequences have been defined in similar but somewhat different ways. Cox and Rich (1964) interpret adverse consequences as the "amount at stake" determined by the costs and the buying goals. Taylor (1974) interprets adverse consequences as being related to the importance of loss.

This study proposes that perceived risk reduction is an alternative decision strategy for consumers, concurrent with Bauer's (1960) assertions. The second proposition

concerning perceived risk is that it plays a mediating role in choice via the selection of the decision strategy used. More specifically, it is suggested that when individuals perceive risk above a certain threshold, they choose to minimize perceived risk. Expected gain maximization is the preferred decision strategy when perceived risk is below this threshold. A similar proposition presented by Dowling (1986) is that to reduce perceived risk, consumers evoke "...a variety of risk-handling strategies" (p. 204) when perceived risk exceeds a tolerable level. Cox (1967) also makes reference to such a risk threshold, suggesting that "...when the level of perceived risk is more than tolerable, consumers will take steps to reduce risk" (p. 80). These studies do not specifically mention expected gain maximization as the decision strategy when perceived risk is within tolerable limits. However, expected gain maximization may be what Dowling (1986) elusively refers to as "normal shopping behavior" (p. 204). Similar to this idea of a risk threshold, Prospect Theory employs a concept of reflection point below which individuals see the outcome as a loss and above which they see the outcome as a gain (Kahneman and Tversky 1979).

The contention that risk reduction is the preferred strategy when risk perception is above a threshold is also supported by a long history of what is called the preference reversals phenomenon which provides examples of actual choices where low risk alternatives are preferred over high expected value options. Slovic and Lichtenstein (1983) review this literature and conclude that preference

reversals are a reality and existing modifications to the utility theory fall short of explaining them. This phenomenon occurs when people are given a bet (A) with a high probability of winning a modest sum of money, and another bet (B) with a low probability of winning a large amount of money. The interesting outcome is that most often people chose bet A, but when they are asked to assign values to these same bets they assign larger values to B (the studies are actually designed in a way that the expected value of B is higher than the expected value of A). The implication of the preference reversals phenomenon is that individuals choose to reduce perceived risk at the expense of higher expected gain, when perceived risk is above a certain threshold (e.g., reflection point). Prospect theory calls this the certainty effect (Kahneman and Tversky 1979).

The above discussion leads to two important deductions: (1) in addition to the maximum expected gain strategy identified earlier, one major decision strategy is to reduce perceived risk; (2) perceived risk is the construct which determines the choice of the overall decision strategy. In other words, if perceived risk is above the tolerable level, perceived risk reduction will be the decision strategy; if not, expected gain maximization will be the decision strategy.

Studies have also shown that decision tasks given to individuals have been effective in manipulating their risk perceptions (Slovic and Lichtenstein 1981, Puto 1987), which supports the view held in this study that purchase goal affects the perception of risk. Cox (1967) also proposes a

affects the perception of risk. Cox (1967) also proposes a relationship between buying goals and risk perception in a manner that is suggested in this study. He suggests that consumers identify buying goals and try to match these goals with offerings. The nature of the goal, levels of aspiration, relative importance of achieving the goal, and the gap between the current situation and the goal all determine the amount of risk that is perceived, according to Cox. This mediating role of perceived risk between purchase goal and overall choice strategies leads to a modification in the model as shown in Figure 2.3.

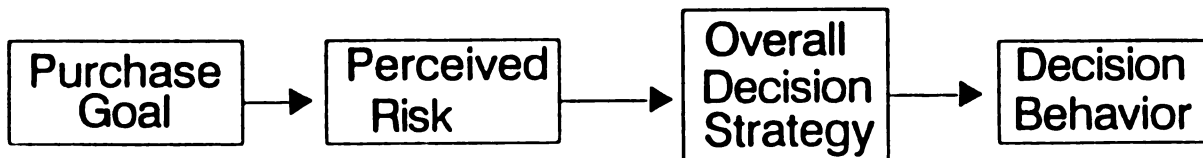


Figure 2.3

GOAL DIRECTED BEHAVIOR - MODIFICATION I

It should be noted that expected gain and perceived risk are not considered to be mutually exclusive outcomes of a decision. In other words, the consumer is not likely to totally ignore positive outcomes when utilizing the risk reduction strategy, or vice versa. This dissertation suggests that in most decision problems where both negative outcomes (perceived risk) and positive outcomes (expected gain) co-exist, minimization of one or maximization of the

decision maker subject to an "acceptable" level of the other.

Facets of Perceived Risk

The above discussion focused on the meaning of perceived risk and its relationship to the proposed general decision framework. A closer analysis, however, is necessary in order to relate perceived risk to the specific research question: The role of price in choice.

Jacoby and Kaplan (1972) identify five types of risk in the literature: financial, performance, physical, psychological and social risk. A sixth type, time risk, was suggested by Roselius (1971). Dowling (1986), however, notes that there is "no consensus regarding a common set of risk facets (types) applicable across purchase situations" (p. 195). He later speculates that different combinations of risk facets may arise across different product categories, individuals, and purchase situations. It is therefore reasonable to suggest that such differences occur due to different types of losses being evoked as likely and important across situations, individuals, and products.

As such, it can be asserted that perceived financial risk (defined as the importance of the loss of the invested amount and the probability that the invested amount is lost) is directly related to price. In other words, one can expect to see high perceived financial risk for products or services with high prices (Bauer 1960, Cox 1967, Bettman 1973, Bearden and Shimp 1982)--depending on the probability of loss. From a traditional economics perspective, it is

also possible to view price as an opportunity cost where the individual gives up the opportunity to buy other utility providing goods. The possible loss of ability to buy other utility providing goods is at the basis of financial risk. In fact, Perry and Hamm (1969) define "economic" risk as "how the purchases will affect the individual's ability to make other purchases" (p. 351). Similarly, Arndt (1967) reports that high risk perceivers for coffee saw "waste of money" as one of the risk factors. This reasoning implies that income (the total resources from which a portion will be allocated to the purchase of the product) and the price (amount to be allocated) would collectively have an impact on perceived financial risk. In other words, in a limitless income situation there would be no opportunity cost: A purchase would have no effect on the ability to buy other goods.

The above discussion, which delineates a relationship between perceived risk and price, leads to an additional modification in the original model, as depicted in Figure 2.4. What has been termed as "price" so far will from here on be referred to as the reference price, to be more precise. With the purchase goal, whether it defines the product and the type (e.g. used car versus new car, or black and white TV versus color TV) or an evoked set (brands A, B, and C), it is highly likely that consumers will form an anticipated price range, unless the product is totally unknown to them. Similarly, Winer (1986) suggests that a "...set of reference prices are formed for the brands in the consumer's evoked set. A reference price is defined as

the consumer's perceived current price of a brand..." (p. 251). Consistent with the above views, reference price is defined as the set of prices that the consumer expects to encounter in the market place.

Most of the perceived risk literature indicates that buyers use different risk reduction strategies depending on the type of risk to be reduced. In fact, Roselius's (1971) study identified these strategies and had them ranked by consumers. His conclusion was that "...buyers prefer some relievers to others depending on the kind of loss involved" (p. 61). Similarly, Zikmund and Scott (1973) posit that "consumers evaluate products on the basis of a few principal attributes and each represents a potential source of risk" (p. 411). One method of financial risk reduction strategy demonstrated by house buyers in the Park et al. (1981) study was to engage in trade-offs, that is, paying a little higher price for a house when satisfaction is more likely. Here the implication is that financial risk perception is contingent on perceiving any of the other types of risk. In other words, if the product is expected to perform "perfectly," the "probability of financial loss" is zero, and there is no perceived financial risk. However, although perception of another type of risk is necessary, it is not a sufficient condition for the perception of financial risk. A very low "importance of financial loss" coupled with a high "probability of financial loss" (e.g., a \$0.69 facial tissue) may not induce any perceived financial risk.

Therefore, as implied in the Park et al. example, one way to reduce financial risk is to reduce the probability of

any other salient type of risk, thereby reducing the probability component of the financial risk. This argument leads to the first proposition:

P1: If the reference price for the product identified in the purchase goal is high, the individual is more likely to use price as an attribute (i.e., engage in price-attribute trade-offs).

This proposition would hold true if a significant level of another type of risk--such as performance risk--is perceived, and if it is possible to reduce this risk by switching brands. The latter condition stipulates that there is significant perceived quality differences between brands.

Although one might also expect the reference price to play a constraint role, the conditions introduced by this study eliminate this possibility. That is, since the "buy" decision has been made and the problem is choice across alternative brands, reference price is a sunk cost and is inconsequential: The budget allocation decision is settled and, in case of equal prices, choice of a brand does not have any impact on the budget. Once the assumption of equal prices is relaxed, a new price-related variable is revealed: Price difference across alternatives. If price differences are low, buying one brand as opposed to another is not likely to be perceived as having a serious impact on the budget. If price differences are high, there will probably

be a strong budget impact in the sense that choosing an expensive brand may result in an inability to make some of the other planned purchases. The above argument leads to the following proposition and the corresponding modification in Figure 2.4.

P2: As perceived price differences increase, the perceived impact of buying a more expensive brand will increase, thereby increasing the probability that price will be used in its constraint role.

Consistent with the price perception literature, perceived price differences, rather than absolute differences, are more relevant for studying price difference effects on consumer choice (Monroe 1973). The significant implication is that to gauge price perceptions, some kind of a base price (e.g., reference price, standard price, price range) has to be taken into account. Consequently, price differences will be indexed by the reference price in this study.

Finally, since the role of price is to be observed within decision behavior, the last component of the model needs modification, along with the reference price (P) and price difference (P_d) variables (see Figure 2.5).

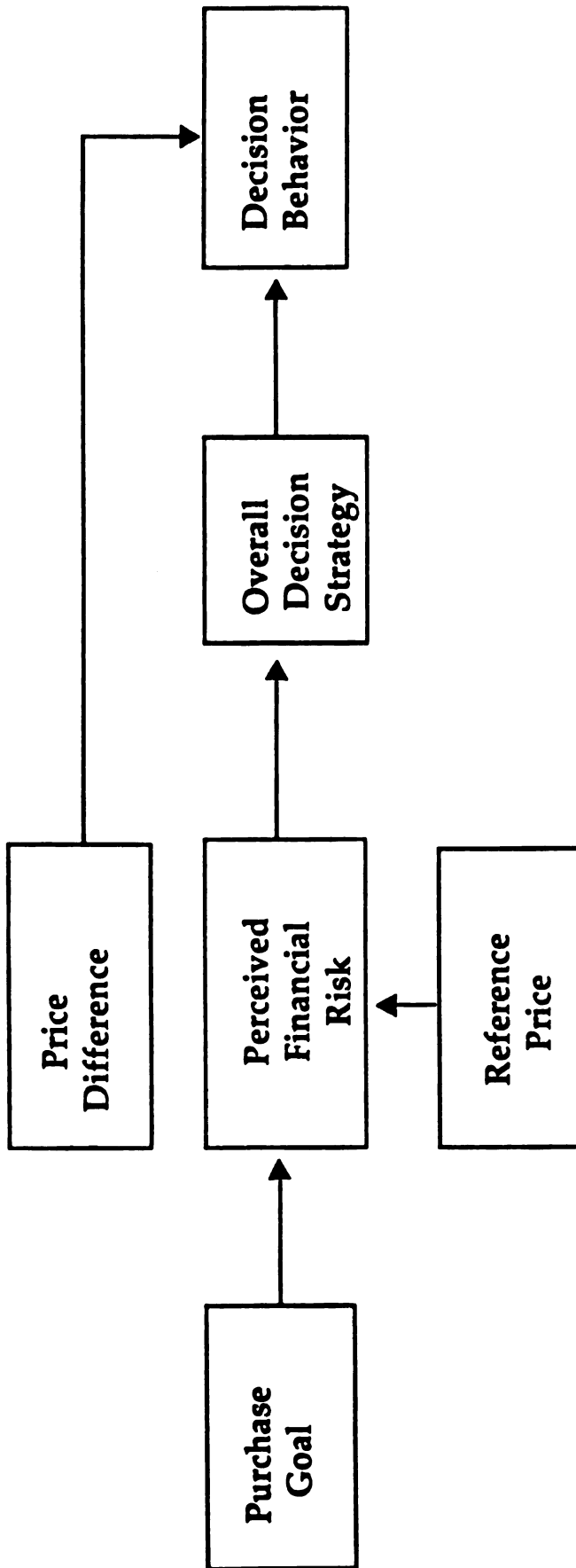
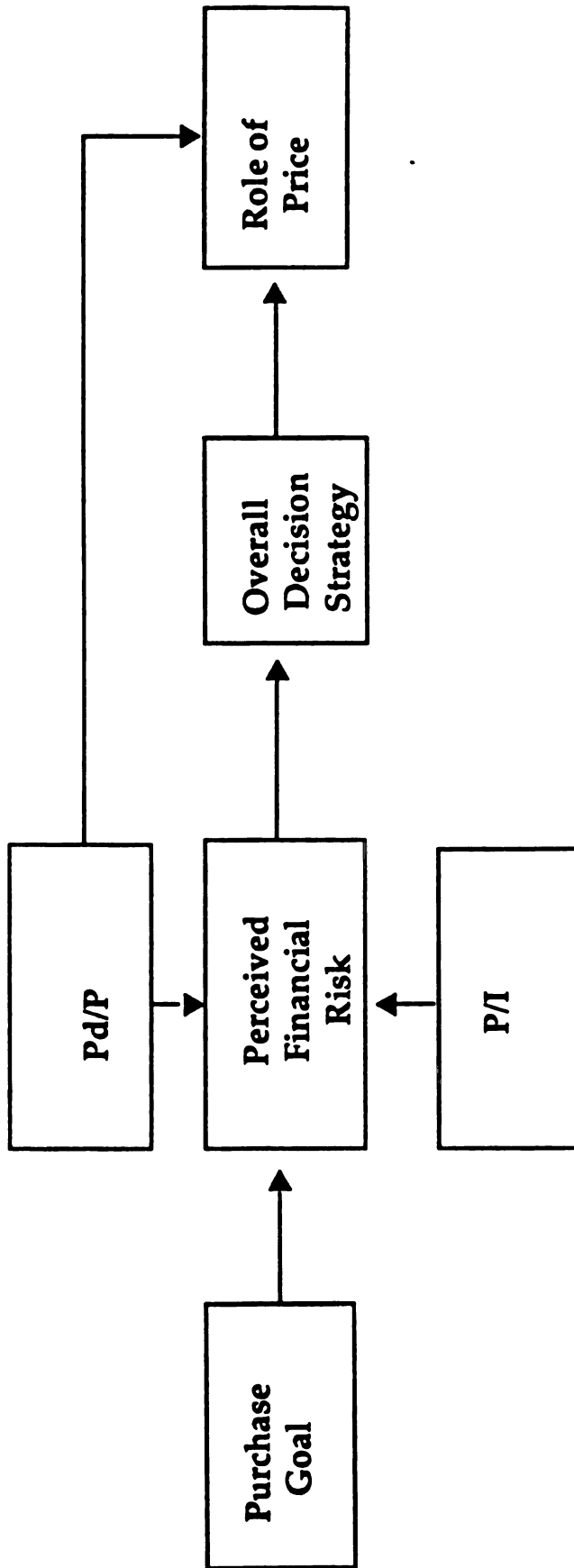


Figure 2.4
MODEL MODIFICATION II



P/I = Price Indexed by income
 Pd/P = Price difference indexed by price

Figure 2.3
FINAL MODEL

Summary of Major Arguments and Substantive Hypotheses

As stated at the outset, there are two specific objectives of the study. The first is to develop a model suitable for examining the role that price plays in purchase decisions. The second objective is to extract specific hypotheses from the model regarding the role of price in purchase decisions. The model, by necessity, focuses on many relationships and implies many propositions only some of which will be tested. Therefore, first a brief summary of the model will be given. Then, only those parts which are pertinent to the hypotheses will be repeated in more detail.

The model proposes that the purchase goal and the way it is framed in the mind of the decision maker will determine the amount of purchase risk perceived which, in turn, will determine the overall decision strategy. There are two overall decision strategies--expected gain maximization and perceived risk reduction--and when perceived risk is above a threshold, perceived risk reduction strategy will be adopted. Otherwise, expected gain maximization will be favored. Reference price indexed by income is hypothesized to have an impact on perceived risk depending on the magnitude of the reference price. Price differences across brands are expected to have a direct effect on the role of price.

The overall decision strategy will determine what the role of the price will be in the decision. This role is to be observed within the decision behavior stage of the model. Although the research conducted in the information

acquisition and information processing domains all fit within the decision behavior stage of the model, it is excluded from the domain of the study. It should be noted that the intent here is not to undermine the importance of these areas. Their exclusion from the model is solely due to concerns of parsimony and unmanageable methodological demands. However, those variables will be considered in the methodology section for purposes of experimental control.

The parts of the model more relevant to the hypotheses relate to the discussions on perceived risk, budget impacts, reference price and price differences. It is argued that any financial commitment has two kinds of impacts. One concerns the impact on the budget in the sense that other wanted items are foregone due to the limits of income. Increasing the magnitude of such a budget impact would increase the probability of price playing a constraining role. In the context of the present study this effect can only be generated by high price differences because the "buy" decision has been previously made and the reference price is considered as sunk. The other effect of the financial commitment is on the amount of financial risk perceived. A high reference price means probability of high financial loss, and since loss is a determinant of perceived risk, high perceived risk can be hypothesized. High reference prices can have the effect of increasing perceived financial risk, thereby increasing perceived risk. It should be noted that reference prices are instrumental in this case not because they enter into the decision, but because they have an impact on the overall decision

strategy.

The propositions presented in the previous section and summarized above are used to deduce the following hypotheses. This study offers theoretical explanations of when and why consumers would want to reduce perceived risk or maximize expected gain. The question of how they reduce perceived risk or maximize expected gain is purely an empirical matter. For example, perceived risk can be reduced by other means along with buying the more expensive brand. There is little guidance from theory to help predict which one of the perceived risk reducing means will be used. Therefore, the hypotheses concerning how individuals use price to serve their overall strategies are empirical in nature, and are based on limited empirical evidence. Furthermore, the two propositions which outline the effects of price and price differences are combined additively to arrive at the hypotheses assuming there is no interaction effect.

For purposes of simplification, reference price indexed by income will be denoted as P/I , and price difference across alternatives indexed by reference price will be denoted by P_d/P , in the following hypotheses.

H1: If P/I and P_d/P are both high, then price is more likely to be used in its dual role.

It is argued that budget considerations put a maximum limit on the "price willing to pay." On the other hand, because financial risk will be high, buyers will want to

trade-off higher utility for higher price to reduce this risk. In other words, if the buyer decided to buy a \$10,000 car, he will reduce the alternatives to a few based on price (and maybe other factors). However, he will be inclined to pay, for example, \$10,500 for a car which may have something that decreases the possibility of future frustration which would render the total money paid as a loss.

H2: If P/I is high and P_d/P is low, then price is more likely to play an attribute role.

The argument is that there is no significant impact on the budget and, therefore, no need to use price as a constraint. There is, however, high perceived financial risk caused by the high price which the buyer will try to reduce by trade-offs. It should be noted that there is no significant impact on the budget because the "buy" decision has already been made and P is a sunk cost that is irrelevant for choice across alternatives.

H3: If P/I is low and P_d/P is high, then price is more likely to be used as a constraint.

The argument is that a trade-off between price and other attributes is not necessary since there is low perceived financial risk. However, a strong impact on the budget is perceived, which puts a maximum limit on price.

One caveat with the above hypotheses concerns the previous discussion on ways of reducing perceived financial risk. It was suggested that "better" brands would lower

financial risk by lowering the probability of failure (i.e., lowering another type of perceived risk). This relationship suggests that individuals may be likely to use price in the attribute role in low price but high perceived risk situations. Therefore, hypotheses 3 and 4 should be considered under conditions of low perceived risk.

H4: If P/I and P_d/P are both low, then price is likely to play a minimal role in the decision.

The argument is that there is neither high perceived financial risk to be reduced, nor a budget impact to impose a constraining role on price.

CHAPTER THREE

METHODOLOGY

Introduction

The hypotheses of the study were presented in the previous section. These hypotheses were tested in a laboratory experiment given the necessity to manipulate the independent variables. Furthermore, the number and significance of the extraneous variables made experimental control crucial. The study is comprised of three phases: (1) the choice of the product categories and development of the scales, (2) an exploratory run with a verbal protocol and pretests, (3) and the experiment. In the following section, an overview of the method will be presented. Next, the design will be explained followed by the three phases of the study.

Overview

In this study a "real" world (non-student) sample of three hundred and fourteen subjects were employed to measure their responses to different levels of price and price

difference. This basic design was used for two different product categories: video cassette recorders and clothes dryers. The study employed scenarios to manipulate the three independent variables and to impose the necessary controls on the experimental conditions. Such role playing is advocated for situations which can not be replicated in an experiment (Hansen 1972).

The survey instrument was developed through a series of pretests, pilot studies and a verbal protocol. The experiment was administered at three different locations at seven different occasions in Michigan. Each subject was exposed to only one of the twelve experimental conditions in the study. The subjects were asked to make a choice among four alternative brands--identified by capital letters only--on which price and other attribute information was provided. Along with their choice, measures of the role of price, perceived risk, involvement, product knowledge, manipulation checks, and some demographic variables were also recorded.

Design

The two independent variables, price difference and price, were manipulated at two and three levels, respectively. For exploratory reasons and to increase the generalizability of the findings, product category was also included as an independent variable varied at two levels. The resulting design is a between subjects $2 \times 3 \times 2$ factorial as depicted in Figure 3.1, where PC is product category, P is reference price, Pd is price difference, and

PC ₁			PC ₂		
	Pd ₁			Pd ₂	
	P ₁	P ₂		P ₁	P ₂
	G1	G2		G7	G8
	G3	G4		G9	G10
P ₃	G5	G6	P ₃	G11	G12

Figure 3.1
EXPERIMENTAL DESIGN

G is treatment cells. These experimental variables were manipulated by using scenarios which define the different choice situations and ask the subjects to role-play accordingly.

While increasingly used to simulate marketing situations that can not be replicated in experiments, the scenario technique has received some criticism. The general term scenario encompasses concepts such as vignettes, role playing, situations and scripts which are descriptions of a hypothetical situation used to induce descriptive and/or event centered context effects (Eroglu 1987). However, some researchers have questioned the ability of scenarios to manipulate an independent variable. Aronson and Carlsmith (1968) have questioned the "experimental" and "mundane" realism of certain types of role playing. Similarly, doubts about accurate variable manipulations, and external validity have been raised about advertising and marketing experiments utilizing scenarios (Berkowitz and Donnerstein 1982, Allen and Madden 1986, Perdue and Summers 1986).

Despite these reasonable concerns about scenario use, there are both practical and theoretical arguments in favor of using scenarios. First, similar results and validity between laboratory experiments and role playing studies have been demonstrated (Brown 1962, Bem 1967, 1968). Second, effects of role playing on attitude change (King and Janis 1956), and its success as a training tool (Solem 1960) are indications that individuals are able to put themselves into the situations demanded by the scenarios. Finally, scenarios offer an acceptable and economical alternative for

situations which cannot be replicated easily in the laboratory (Mixon 1971, Hansen 1972, Geller 1974, Jackson, Keith and Burdick 1984). An assessment of the pro and con arguments leads one to the conclusion that scenarios should not be discarded as a viable research tool, but that great care is necessary in employing them.

Although research focusing on the factors contributing to the success of scenarios is scarce (Eroglu 1987), literature provides certain propositions which can be used as guidelines in using scenarios. First, it is possible to derive a set of guidelines from studies which attempt to classify scenarios. For example, Spencer (1978) claims that "empirical" role playing (as opposed to "hypothetical") is the only acceptable substitute for live research because it does not threaten internal validity. Spencer's classification is based on the ability to monitor role enactment: The situations where the experimenter can ensure that the role is being played would be categorized as empirical role playing. An example of a role where role enactment is difficult to monitor would be to ask the subjects to put themselves in a "bad mood." In this study, since the subjects were asked to report the outcome of their decision, role enactment (thus, empirical role playing) was automatically verified. In other words, there is no reason to wonder if the subjects actually made a choice.

Another classification is proposed by Mixon (1971) between roles where the subject projects himself into a "character" versus one where he "plays himself." One would expect higher success when, for example, a student is asked

to "imagine yourself in a library writing a term paper," compared to a situation where the role demands the student to "imagine being a buyer for a major retail company." Consequently, the ability of the scenarios used in this study to manipulate the desired situation is likely to be high since the subjects were asked to project themselves into the situations.

An example from the marketing literature where the subjects are asked to project themselves into the described situations is the Suprenant and Solomon (1987) study. They use scenarios to study the effects of personalization on satisfaction in a service encounter context. Suprenant and Solomon (1987) asked undergraduate students to imagine themselves talking to a (taped) bank officer. The experiment which took place in a simulated bank setting manipulated different kinds and levels of personalization. An example where the subjects are asked to imagine being a different character is provided by the Eliashberg et al. (1986) study. There, MBA students were asked to play roles of a buyer for a retailer and a seller for a manufacturer where price-quantity negotiations between the two were examined. Eliashberg et al. also paired executives in these roles. Both of these are studies where at least some attention is paid to understanding the ability of the scenarios to generate the desired effects.

A second set of guidelines for proper use of scenarios is introduced by examining key variables in role theory. Involvement (Greenberg 1967), role demands, self-role congruence, role skills and audience effects (Sarbin and

Allen 1968) have been suggested as factors determining the success of scenarios. The scenarios in the present study make very few role demands (manipulating only product category, price and price difference--situations most people are accustomed to), and have high self-role congruence (i.e., making purchase decisions about products subjects are aware of or may have purchased). These are factors which would contribute positively to the success of the manipulations in this study.

Audience effects, on the other hand, are not relevant for this experiment, and thus, are not likely to be influential. Although role skills is an individual variable which is difficult to control, an attempt was made to improve role playing by providing a warm-up task before the scenarios were introduced. Such practices are suggested to increase the success of role playing in experiments (Eroglu 1987), and were used by Urbany (1985) in the marketing literature. In his study, Urbany (1985) employed undergraduate students to investigate consumer price search behavior where a cost-benefit framework was provided.

Eroglu (1987) has also suggested the possible impact of structural variables such as script length, narrative style, use of context dependent jargon and efficacy of instructions. These variables could possibly effect the comprehension of the role and the ability to get the subjects involved in the task. The brevity and clarity of the scenarios achieved after pretesting the instrument was a likely contributor to their comprehensibility. Involvement with role playing was possibly induced by the existence of a

financial payoff for participation.

Scenarios have been widely used in marketing, although with little concern with assessing their success. Lately, however, more attention has been paid to evaluating the success of role enactment in marketing research. The marketing examples which were cited earlier (Urbany 1985, Suprenant and Solomon 1987) have both utilized self-report manipulation checks to assess the comprehensibility and believability of the scenarios along with the seriousness of the subjects in carrying out the given tasks.

Along with assessing the scenario success, the present design also attempts to account for the potential effects of other variables which were not included in the model. The list of these variables and a description of how they were accounted for is presented in Figure 3.2.

Two such variables, involvement which is proposed to influence the choice of the decision model (Gensch and Savalgi 1987), and product knowledge which is proposed to influence both the choice of the decision model (Gensch and Savalgi 1987) and the use of available information (Rao and Monroe 1988) were measured. Task complexity was held constant across treatments by keeping the number of attributes and alternatives equal at eight and four, respectively (Sternthal and Craig 1982). Consequently, information availability and information search costs were also held constant across treatments. Possible effects of time pressure (Wright 1974) were eliminated to a great extent by telling the subjects to work at their desired paces. Obviously, any external time pressure, (such as,

- perceived brand differences - product durability	constant across groups by choice of product category
- information availability - information search costs - task complexity number of alternatives number of attributes	constant across groups by use of information sheets
- time pressure	eliminated by self-pacing
- individual variables income household size education other demographic variables product involvement product knowledge perceived risk	controlled by random assignment and measurement

Figure 3.2

CONTROL OF IMPORTANT VARIABLES

after-experiment commitments) might still have existed.

To summarize, the three independent variables were manipulated across the treatment cells. The content, amount, and presentation of all information was identical except price and repair rate information. The reported repair rates varied in equal increments between the brands in each cell. These increments were equal in the same price difference treatments (for example, all low price difference cells) but different between different price difference treatments (i.e., low versus high price difference cells). Across all cells, unit of repair index differences per unit of (relative) price differences were equal (within rounding-off error), providing for identical trade-off conditions between all treatments.

The Study

Phase 1

Choice of Product Categories: The first decision was the choice of the two product categories. The criteria for this selection were as follows. Certain variables which might have an effect on the decision processes of the subjects might unintentionally be varied as product category is manipulated. Therefore, perceived product differentiation, familiarity with the purchase task, and durability had to be kept constant between product categories.

The level of product differentiation was deemed important for two reasons. First, since the subjects were asked to make trade-offs between price and quality

differences, the product categories had to be perceived to have quality differences across brands. Therefore, perceived product differentiation in each category had to be above a minimum level. Second, due to the necessity to maintain equal price differences across all cells, equal perceived differentiation for the two product categories would make the different levels of quality differences equally believable.

Familiarity with the purchase task was an important concern to ensure proper enactment of the roles specified in the scenarios. It was mentioned earlier that role/self congruence was an important factor affecting the role playing ability of the subjects, and that this would be controlled by giving the subjects tasks they are familiar with.

Familiarity with the purchase task, durability, and frequency of purchase were also important in that they might have been the determinants of the decision making strategy. In other words, the purchase of a nondurable, or infrequently purchased product, or high familiarity with the purchase task might have induced the use of heuristics or stored rules as opposed to the level of problem solving which was required in this study.

Another significant criterion for the product categories was their ability to elicit perceived risk above a certain minimum level. This criterion was necessary because one can not expect to observe perceived financial risk in situations where the product is expected to perform "perfectly"-- for example, a top-of-the-line mattress or a painting bought for

aesthetic reasons.

As a consequence of the above reasoning, the following guidelines were formed for the selection of the product categories. First, the products had to be durable and be able to elicit above minimum levels of familiarity, perceived risk, and perceived product differences. Second, familiarity, perceived risk, and frequency of purchase associated with the two product categories had to be below "very high" levels. The selection was completed through a two-stage process. In the first stage, a list of thirty-three product categories was developed. Some of the product categories in this list were taken from similar price studies reported in the marketing literature. Others were selected from an annual Consumer Reports index. Most products were at least somewhat durable with a few categories like colas and bread scattered in between to prevent monotony. The resulting list is presented in Appendix 3.1.

The evaluation of the product category list with respect to the previously mentioned criteria was accomplished by using two sets of individuals. The first set was comprised of ten doctoral students in the marketing department at Michigan State University. These individuals were selected as judges and were asked to "...tell us how (they) think most people would feel about the given product categories" on the particular criteria. They indicated their "estimates" about how most individuals would perceive these products in terms of risk and difference across brands; how frequently they would purchase; and whether familiarity

would vary across demographically different groups. The instrument used for the judges is presented in Appendix 3.2.

The second set consisted of a convenience sample of ten individuals who were asked to indicate their own feelings and opinions on the same criteria. The evaluation instrument used for this group (Appendix 3.3) differed from the previous one only with respect to the specific instructions.

Nine individuals from each of the groups (18 total) completed and returned the survey instrument. Means and standard deviations were calculated for each of the groups separately, for each product category on the four criteria. All ratings were done on a 7-point scale where 1 denoted low and 7 denoted high. This information was used to reduce the initial product list to twelve, six of which met the following conditions and six of which missed only one of the conditions by a small margin:

1. perceived difference scores: means greater than 4.5 for both the judges and the self-reports,
2. perceived risk scores: means between 4.5 and 6.0 for both the judges and the self-reports,
3. purchase frequency scores: less than 4.0 by both the judges and the self-reports,
4. familiarity scores: mean of the self-reports between 3.0 and 5.0.

The question which asked the judges to indicate how much they thought familiarity would vary across different demographic groups was eliminated as a criterion because the ratings for almost all product categories were above the desired levels.

From the reduced list (Appendix 3.4) four product

categories were selected: video cameras, video cassette recorders, watches, and clothes dryers. For this selection, confidence in the ratings (as evidenced by small (0.5 or less) differences between the mean ratings of the judges and the self-reports and relatively low standard deviations (1.0 or less)), existence of another category in the same price range, and some qualitative concerns were considered.

In the second stage of the selection process, the four categories were used to pretest the perceived risk and involvement scales. The final choice was to be made on the basis of how well the two scales performed for each product category. Another objective was to ensure with a larger sample that the final two product categories were neither extremely uninvolved, nor too high or too low with respect to perceived risk. As a result of the scale pretests (more will be presented on this later) it was found that both scales performed well with the four products and the mean involvement and perceived risk values were also within desired limits. Finally, a decision matrix was constructed (Appendix 3.5) to eliminate two product categories. Video cassette recorders and clothes dryers were selected mainly due to the similar mean ratings they received on the criteria and the similarity of the price range for the categories.

Construction of the Questionnaire: The instrument was comprised of three components: the scenarios with which the price, price difference variables, and product category were manipulated; the measurement scales for the model variables;

and the demographic variable measures to be used for profiling the sample. The demographic scale items were taken from a survey handbook (Alreck and Settle 1985, p. 183).

The scales for perceived risk were developed by first generating a sample domain of 20 items (Appendix 3.6) from scales used by Jacoby and Kaplan (1972), Deering and Jacoby (1972), and Bearden and Shimp (1982). Later, this pool of items was administered to 92 senior level undergraduate students enrolled in an advertising research course at Michigan State University. Each student completed a perceived risk scale (along with an involvement scale) for two different product categories. The products which were evaluated by the same subjects were video cassette recorders and watches for one group, and video cameras and clothes dryers for the other group. As a result, each product category was evaluated by 41 to 49 subjects due to different numbers of unusable instruments determined by some omitted scale items. To form the final scale (Appendix 3.7) four items were deleted from the original pool and acceptable reliability levels were maintained both for the VCR (Cronbach's $\alpha = 0.75$) and the clothes dryer (Cronbach's $\alpha = 0.76$). The items are all based on conceptual discussions of the construct and its operational definitions in the consumer behavior literature. These conceptualizations have face validity (Peter and Tarpey 1975). Basically, what is meant here is that the instrument "looks like" it measures what it is intended to measure (Nunnally 1978, p. 11). This conclusion is convincing since

the items in the instrument are phrased in the language and with the content of the conceptual definition of perceived risk.

Zaichkowsky's (1985) involvement scale was also pretested in the same manner. The original twenty item scale achieved adequate reliability levels ($\alpha = 0.91$ for VCRs, and $\alpha = 0.93$ for dryers) and was kept intact.

To measure product knowledge, an adopted version of the Rao and Monroe (1988) scale was used (Appendix 3.8 & 3.9). This conversion was necessary in order to generate equivalent product-specific items for the products used in this study. These items were generated from the reviews in Consumer Reports for the respective product categories. Care was shown to include items which only required basic knowledge about the product category as well as items representing state of the art issues. These questions were informally administered to four doctoral students and their self claimed knowledge about the product categories was solicited. Those questions which seemed to be better indicators of product knowledge were thus included in the product knowledge scales.

The instrument for measuring the role of the price variable was developed since there was no such instrument available in the literature. Given that role of price is a process measure, a protocol analysis would have been the ideal method. However, the large sample size desired for statistically testing the hypotheses, and the difficulties associated with large sample protocols were reasons for deciding to develop a paper-and-pencil measurement

instrument. Different verbal descriptions of the possible ways to arrive at a choice were generated.

Given the numerous possible ways individuals could explain their choice strategies, and the extent of detail that could be included, it was necessary to come up with a comprehensive but manageable number of such descriptions. Therefore, the descriptions were kept general enough not to impose boundaries other than the specific roles that price could have played. The comprehensiveness of the description list was judged by its ability to reflect the conceptually developed domain of possible roles of price. Furthermore, the definitions provided during the conceptualization were used to determine the wording of the descriptions. To ensure exhaustiveness, an "other" category was also included. The instructions told the subjects to choose the description which best depicted the way they made their choice in this exercise (Appendix 3.10). Given reliability concerns and the exploratory nature of the instrument, a similar instrument was developed to test for consistency in the responses. The major difference with this instrument was that it asked respondents to indicate how they used price in their decisions, and accordingly, the descriptions emphasized the use of price in the decision process (Appendix 3.11). A limited protocol employing two subjects for two experimental tasks was used to determine whether the protocols taken during the choice process were consistent with the same price roles as those indicated on the measurement instruments. Both instruments were consistent with each other as well as the protocols. Despite the very

limited number of observations (4), the results were used as an indication of instrument reliability. As discussed earlier, face validity was inferred from the ability of the instrument to reflect the conceptualizations of the different roles of price.

The measurement method used to measure the role of price in this study is theoretically sound since it is a variation of retrospective and structured probing form of protocol. The variation stems from the fact that individuals were asked "Is this the way you made your decision?" rather than "How did you make your decision?" Despite some earlier criticism directed at protocol analysis in general, there is convincing evidence that verbal protocols reflect individuals' cognitive processes closely (Erickson and Simon 1980). Recent marketing literature displays different uses of protocols as an appropriate method of investigation (e.g., Crow et al. 1980, Sujan 1985, Puto 1987).

Scenarios were used to simulate the decision situation and to manipulate the price, price difference variables, and the product categories. A total of twelve scenarios were developed for all the experimental treatments. All of these were variations of a generic "situation" as it was referred to in the instrument. The scenarios were made up of two parts due to the necessity to measure perceived risk before brand information was provided. The first part provided the purchase goal for the individuals and manipulated the product category (two levels) and price (three levels). Thus, there were six versions of the first part of the scenarios. The subjects were instructed to imagine that

they had decided to buy a product (e.g., a VCR) and that they were willing to pay approximately, for example, \$500.00.

In the second part of the scenario, subjects were first reminded of part one, and then asked to make a choice from the brands on which information was provided. They were also asked to indicate their choice on the same page.

The selection of the product categories which were manipulated was described earlier. The specific price levels (high, medium and low), and price differences (high and low) were determined in the following manner.

The first limitation on the price levels was imposed by high and low prices observed in actual retail outlets for the respective product categories. These high and low values were first taken from recent reviews of the products in Consumer Reports. Later two local stores were visited to confirm these extreme prices. In the final analysis a price range of \$150.00 to \$800.00 (or more for some very sophisticated models) for VCRs and a price range of \$250.00 to \$750.00 for clothes dryers were determined to be an accurate representation of the price ranges. Matching these two ranges provided a range of \$250.00 to \$750.00 for both product categories without jeopardizing realism. The literature provided little guidance in determining which price levels would be considered "low" or "high" by individuals. These extremes seemed to be framed differently for differing product categories across various price manipulations: for example, \$40.00 (low) to \$80.00 (high) for tires, \$89.95 (low) to \$250.00 (high) for a jogging

device (Bearden and Shimp 1982); \$125.00 (low) to \$325.00 (high) for typewriters (Petroshius and Monroe 1987). The medium price level \$500.00 was determined as the midpoint between the extremes.

The high and low price differences were initially set at 10% and 5%, respectively. Since difference perceptions were conceptualized earlier as shaped by the original intensity of the stimulus (price level), percentage price differences were kept constant across treatment conditions rather than the absolute differences. Based on the observations in the protocol session and the second pre-test, respectively, the low difference was reduced to 3% and high difference was raised to 15%. None of the alternative brands was priced at the reference price which was introduced in the first part of the scenario. Two brands were priced above the reference price and two below. Appendix 3.12 displays the prices and price differences for six cells. The remaining six cells provided identical numbers for the second product category.

Along with manipulating the independent variables, the scenarios were used to keep other potentially important variables constant across the treatment conditions. Based on Sternthal and Craig's (1982) arguments regarding task complexity, the number of attributes and alternatives were kept at eight and four, respectively, for all conditions (p. 149). The information for all the brands was designed to match standard catalog descriptions (Rao and Monroe 1988). The number of product attributes was set at eight because both product categories would be adequately described minimizing the need for additional information. These

evaluations were made based on Consumer Reports reviews and conversations with salespeople from two local stores. As the salespeople approached for service they were told "I want to buy a VCR (or clothes dryer) but I do not know anything about them so I do not know what to look for." Later they were asked to explain the rationale for a high price difference between two particular models. The intent of these conversations was: (1) to look for attributes which seemed to be important for the salespeople but were missing from the initial list compiled from the Consumer Reports; (2) to find key attributes with which major price differences were justified. The most commonly mentioned attribute for both products were the reliability of the manufacturer and/or warranties attached to the product.

Upon deciding on the specific attributes, the corresponding information content was developed for both product categories. Across the six cells for each product category, all information was equal except one attribute--the reliability of the different brands. The reasons for this were two-fold: the necessity to maintain constant non-price differences across brands in all treatment cells and, the importance of reliability/warranty in justifying price differences. To ensure constant non-price differences meant that a quantifiable attribute had to be selected. For example, changing mechanical controls to electronic controls between two brands and having three heat settings in one versus five in another brand is one way of creating non-price differences. However, it is difficult to argue that these differences

across the four brands would be perceived equal by all subjects. The problem would be exacerbated by trying to keep brand differences equal across product categories as one would have to make assumptions concerning, for example, the equality of differences between mechanical versus electronic controls in clothes dryers and two heads versus four heads with VCRs.

Brand reliability, on the other hand, offered a viable solution. It was operationalized as a repair index generated by a "reliable independent organization" and cited the number of product failures for every one hundred that was sold of that particular brand, within the first two years. Use of reliability as the non-price difference factor also fits the conceptual model which proposes that individuals are more likely to pay higher prices as perceived risk increases.

In the final analysis the numbers which were to be manipulated as repair indices which would keep non-price differences both constant across the alternatives and equal to the price differences were calculated by the following formula:

$$\begin{aligned} EC &= NC + p NC = p^2 NC + p^3 NC + \dots \\ &= [1/(1-p)] NC \end{aligned}$$

Where: EC = expected cost determined by the price and replacement cost in case of failure,

NC = nominal cost, (i.e., price paid)

p = probability of failure (i.e., repair index)

brand) was determined as 4%. This number is close to the repair index of the "best" VCR brand (7%) as reported in Consumer Reports (the lowest for clothes dryers was 15%) and also keeps the repair index of the least expensive brand within realistic limits. Then EC was calculated for the most expensive brand. Taking EC as constant for the other brands, the respective p values were calculated. As a result, all choices in all treatment conditions were equal in terms of expected cost as modeled above, and it could be assumed that all decisions were based on price and brand superiority trade-offs.

It should be noted that the above model is not the only way to formulate expected cost. This model assumes that the brands are likely to fail more than once with decreasing probability for each consecutive failure, and that replacement cost is equal to the original price paid. Two different sets of calculations were also made. The model which assumed only one failure for the brands generated very high differences in repair indices--for example, the range was 4% to 64% for the high price difference conditions as opposed to 4% to 39% with the previous formula. Another model, which inserted "average repair cost" (\$75.00 for VCRs) as the replacement cost in the original formula, generated repair indices which increased as price increased. Therefore, the first formulation was used. The calculations and the resulting repair indices are presented in Appendix 3.13.

As suggested by the scenario literature, a warm-up exercise was conducted with the subjects before they were

given the actual experimental tasks. This practice was intended to: (1) get the subjects used to the idea of assuming that they are in a hypothetical situation; (2) get the subjects into a choice/decision making mode; and (3) to have them make cost-benefit trade-offs. All subjects, regardless of the treatment conditions, received the same warm-up task. They were told that they had decided to buy a certain brand of watch which cost \$114.99 at a store less than five minutes away. They were also told that the same watch sold for \$99.99 at a store 20 to 25 minutes (15 miles) away. Then, they were asked to make a decision as to where they would buy the watch.

The above scales, the warm-up exercise, general instructions, and a two-part scenario were presented in the form of a booklet. The first page of this booklet consisted of a respondent consent form as required by the Human Subjects Committee at Michigan State University. The committee's approval letter and material submitted for permission to use human subjects are included in Appendix 3.14. The questionnaire booklet (Appendix 3.15) also included manipulation checks (adapted from Urbany 1985), a reference price measure (adapted from Puto 1987), and a series of demographic measures. There were twelve different versions of the questionnaire, one for every treatment condition.

Phase II

Verbal Protocol: The questionnaire was subjected to a series of pretests. First, a limited verbal protocol was collected from two female subjects. They both participated in two different experimental tasks. One repeated the experiment with high price-high price difference and low price-low price difference conditions for VCRs while the other participated in high price-low price difference and low price-high price difference conditions, also for VCRs. The individuals were instructed to think aloud as they made their choices and say everything that came to their minds. These instructions were given both verbally and written on the survey instrument. Before the subjects engaged in the experimental tasks, they were given the warm-up task to get them used to verbal reporting (Erickson and Simon 1982 p. 377). The subjects were given a reduced form of the questionnaire which included only the tasks, the two instruments measuring the role of price, and the involvement scale which was placed between the role of price measures to separate the two. The verbal reports were recorded and later scanned for interpretation (Todd and Bensabat 1987). It was found that subjects felt at ease with the hypothetical situations they were asked to imagine, and the two role of price measures agreed with each other and the protocol. The low price difference conditions, however, did not seem to generate the desired effect. Therefore, low price difference was reduced to 3% in the later versions.

Pretest I: In the next phase the complete instrument was pretested with four doctoral students. They were asked to first complete the questionnaires, record the time it took to complete the task, and then critique the instrument. Given the feedback from this pretest, the instrument was shortened by deleting certain scales in order to prevent confusion and subject fatigue.

Pretest II: A second pretest was conducted with twenty-five subjects who were not students and were compensated for their participation. This pretest provided an opportunity to test the entire data collection procedure with a sample of the intended subject pool. No problems with either the instrument or the tasks were encountered in this experiment. However, after analyzing the responses it was concluded that the high price differences were not sufficiently high to generate the desired income effect. Thus, price differences were increased to 15% in the high difference category.

Phase Three

Subjects and the Setting: Three hundred and fourteen subjects participated in the experiment. These subjects constituted a convenience sample recruited by the assistance of four fund-raising organizations. A financial contribution was made to these organizations for every subject they recruited. The dates and the places of data collection are presented in Appendix 3.16. Subjects were randomly assigned to the cells and they were not aware of the specific purpose or the details of the study. The only stipulations made to

the collaborating organizations were that the subjects had to be non-students, above eighteen years of age, and that only one member from a household could participate. A sample of the letter sent to the participating organizations is included in Appendix 3.17.

The Experiment: To ensure random assignment of the subjects to the treatment conditions, the questionnaires were shuffled without any particular routine. This order was kept and before the subjects entered the room a questionnaire and a pencil was placed on each desk. As subjects entered the experiment room they were greeted by the liaison person from the organization and asked to take any seat they wished and not to turn the booklet until they were instructed to do so. When all subjects were present, the liaison person introduced the experimenter who in turn gave the following instructions:

We appreciate your coming here today. In this survey you will be asked to make a choice between a number of brands. There is no right or wrong answer to any of these questions. We are interested in YOUR opinions.

Please read the instructions very carefully and follow them as best as you can. Try to put yourself in the situation described in the booklet even if you think that the chances are low.

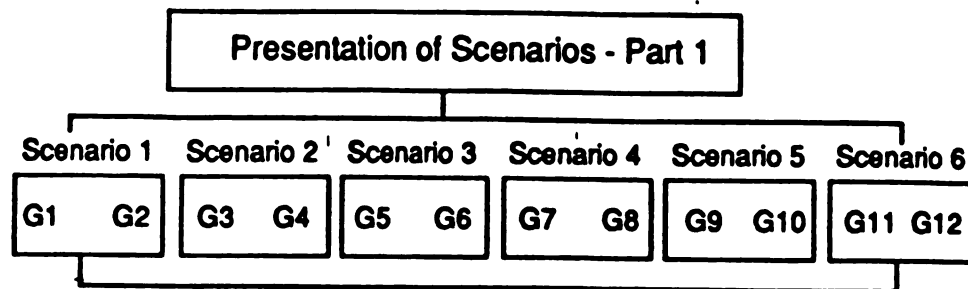
Please concentrate on the questionnaire and do not talk to each other during this exercise. You can take as much time as you wish to complete this questionnaire.

Thank you for participating in this study. You can start now.

The starting time was recorded as well as the time the first and last participant took to complete the survey at

each session. The shortest and the longest time of completion was fifteen minutes and fifty-two minutes, respectively. An overwhelming majority completed the task between twenty and thirty-five minutes. The first page of the booklet contained a respondent consent form which told them about the general purpose of the study and that confidentiality and anonymity of the subjects would be maintained. The second page contained some general instructions. Instructions on how to answer the different types of questions which appeared throughout the questionnaire were on the third page. The fourth page included general instructions related to role playing and what was expected of the subjects. The warm-up task was also on the fourth page. The remainder of the questionnaire guided the subjects through the experiment. Since individuals completed the task at varying times, a general debriefing was not carried out. Instead, individuals were asked to inquire with the experimenter with respect to the details of the experiment and its purposes as they exited the room if they desired. Figure 3.3 provides a schematic representation of the complete experimental procedure.

Stage 1:



Stage 2:

Measure Perceived Risk, Perceived Financial Risk

Stage 3:

Presentation of Scenario - Part II

Stage 4:

Choice

Stage 5:

**Dependent Measure
Manipulation Check Measures
Demographic Measures**

Stage 6:

Debriefing of Subjects

Figure 3.3

SCHEMA OF THE EXPERIMENTAL PROCEDURE

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

Introduction

The preceding chapter explained the data collection procedure and development of that procedure. This chapter presents the analysis of the data and the interpretation of the findings. The analysis begins by providing a subject profile along with a demonstration of the equality of the experimental cells with respect to the individual variables. The discussion continues with reporting the reliabilities of the various measures and analysis of the manipulation checks. Next, a restatement of Hypotheses 1 through 4 is presented in a manner more suitable for statistical testing. Finally, the tests of the hypotheses and an explanation of the results is presented.

Profile of the Subjects

Two hundred and eighty-six usable questionnaires were gathered from the subjects. Most deletions were due to incomplete responses as well as indications that the task

was misunderstood or was not undertaken as instructed. An unequal number of non-usable questionnaires across cells and the randomization attempt resulted in unequal cell sizes. Most cells ended up with twenty-two to twenty-seven subjects while the high price-low price difference (dryer) cell had eighteen subjects. It is not possible to discern a pattern relating the number of unusable questionnaires to the experimental conditions. Later analysis takes unequal cells into consideration. A majority of the subjects were females (66.90%) and married (77.10%). Overrepresentation of females was probably due to the experimenter imposed condition that only one person from a household could participate in the study. Given the other conditions for participation (being over 18 and a non-student) it was not surprising to have attracted a high proportion of married individuals. Many of the subjects (43.80%) lived in a household with only one other person. Thirty-one percent of the subjects lived in a three or four member household.

A majority (56.10%) of the subjects were employed, 26.60% were retirees, and 12.90% were homemakers. Professionals (32.20%) and clerical workers (23.60%) were the two largest occupational categories. Occupational information was taken by an open-ended question and later classified into the list provided by Alreck and Settle (1985 p. 183).

The majority of the subjects (64.40%) were between thirty and sixty years old, 21.60% were between sixty and seventy years old and 4.20% were below thirty. Although the above numbers indicate a heterogeneous age group, the mean

(51) and the median (50) ages indicate a somewhat older sample not representative of the entire population. The sample also seemed to be somewhat highly educated with 66.20 percent indicating twelve to sixteen years of formal education. Twenty-three percent had seventeen to nineteen years of formal education indicating a possible master's degree; and 8.00% had twenty to twenty-five years of formal education indicating a possible doctoral degree. On the positive side, the high levels of education (mean = 15 years, and median = 15 years) are encouraging with respect to the ability of the subjects to comprehend the experimental instructions and the scenario task demands.

Mean income (\$41,700) and the median income (\$37,000) both indicate a high income sample. Seventy-eight percent of the subjects had a household income between twenty and seventy thousand dollars. Age, household size, years of education, and income were all measured by open ended questions. The non-response rate to most of the demographic questions varied between 4.9 for sex and household size to 7.7 for age. Twenty percent of the subjects did not respond to the income question. The detailed demographic information is presented in Appendix 4.1.

The above analysis demonstrates that the subjects constituted a heterogeneous sample from many aspects. However, with respect to age, education, and income the sample was not representative of the total population. To demonstrate that the random assignment of subjects to the treatment conditions did, in fact, work and generate demographically similar cells, a series of tests using ANOVA

were conducted. An analysis of variance showed that the treatment cells were not different from each other with respect to age ($F = 0.62$, $df = 11$, $p = .81$). Mean age ranged from forty-five to fifty-five years across cells. Similarly, it was not possible to reject the hypothesis that the cells did not differ in terms of income ($F = 1.15$, $df = 11$, $p = .32$). The highest and lowest mean incomes for the cells were \$48,700 and \$32,200, respectively. This finding is important in that the model had conceptualized the budget effect as a consequence of income and price of the product. The equality of the treatment conditions in terms of income indicates that the price difference manipulations can be considered as adequate manipulations of the budget effect. It was also not possible to reject the hypotheses that the cells were similar in terms of education ($F = 1.20$, $df = 11$, $p = .28$) and household size ($F = 1.10$, $df = 11$, $p = .38$).

Measure Reliabilities

Dependent Variable

Role of price was measured by two different instruments. The first instrument asked the subjects to indicate the description which best revealed the way they "made the decision in this exercise." The second instrument provided the same instruction but this time the emphasis was on the way the subjects "used price" in their decisions. Both of these instruments had an "other" option to insure exhaustiveness, and the subjects who used this option were instructed to explain how they made their choice. First,

the questionnaires which used the other option were selected. Two judges were employed to take each explanation individually and classify them into one of the categories appearing on that particular instrument.

The judges, who worked independently, were told to classify the written responses only on the merits of that explanation and not to infer meaning by looking at the other instrument. The intent of the question, and the different roles of price were explained to the judges and they were given the option to avoid classification if the explanation did not relate to any of the descriptions (Appendix 4.2). Both judges had experience in analyzing and coding qualitative information.

There were 180 explanations to be classified. After tabulating the two independent classifications, there were thirty-six disagreements between the judges, indicating eighty percent agreement. As a reliability measure, Cohen's (1960) coefficient Kappa (K) was calculated separately for both of the instruments. For the first instrument, K was 0.67 ($z = 10.97$, $p = .0001$) with a maximum possible K of 0.81 (Appendix 4.3). K was 0.71 for the second instrument ($z = 7.78$, $p = .0001$) with a maximum K of 0.91 (Appendix 4.4). Next, the judges were brought together and told to resolve their differences. They were told that they could, at this stage, look at the other instrument and the declared choice when needed. All differences of opinion were resolved with unanimous agreement. Two cases were eliminated at the end of this process because there were indications that the subjects had misunderstood the task.

The next stage involved the coding of the role of price based on the two separate measures of the dependent variable. The first instrument contained eight descriptions and the second instrument contained five. First, the descriptions which confirmed each other a priori were identified and role of price was coded only for cases with a perfect fit. For example, if both the first and second instruments were coded independently as the dual role (categories 4 and 5, respectively), role of price was coded as the dual role. However, there were some unexpected combinations of responses to the two instruments. These pairs of responses were identified and the two judges were asked to analyze them. Their task was to detect pairs which together would be coded as one of the five original roles of price. There were twenty such combinations and there was agreement that twelve could be coded as one of the five roles of price. Appendix 4.5 displays the pairs of descriptions and the respective roles of price. In the final analysis, the role of price measure indicates an exact fit between the two instruments. Responses which do not have concurring answers to the two instruments were not included in the analysis.

The above procedure generated a categorical variable with four classes. The fifth role, informative role of price, was coded as missing thus eliminating the case from the analysis. The roles were: constraint role, attribute role, dual role, and no role.

Covariates and Other Variables

The involvement scale which was pretested produced acceptable results with reliability coefficients (Cronbach's alpha) of .96 and .93 for VCRs and clothes dryers, respectively. The unidimensionality of this scale was previously determined (Zaichkowski 1985) and the items were combined additively to calculate the involvement scores.

The product knowledge measure was adopted from Rao and Monroe (1988). Consistent with their definition, product knowledge was operationalized in terms of both subjective and objective knowledge. The twelve scale items were once again combined additively. A minor modification of the scores was necessitated due to the differences in the areas where data were collected. Item one of the scale asks the respondents to name all the stores which carry [the product], in [their town]. During the preparation of the scoring instructions it became apparent that in one of the locations (Tawas) the number of retail outlets which actually carried the experimental products were much fewer than the number of outlets in both of the other locations (Lansing, Jackson). The mean number of store names for all three locations were compared. Lansing and Jackson means were extremely similar with 3.20 and 3.38 store names, respectively. On the other hand, on the average there were only 1.78 store names for subjects from Tawas. The difference between these means was found to be significant ($F = 69.90$, $df = 2$, $p = .0001$). To correct for this artificially introduced difference in the scores, 1.50 was added to the product knowledge scores of the respondents

from Tawas. Adding a constant to every subjects score will increase the mean by that constant, and thus, adjust the artificial difference. Since the variance does not change as a result of the adjustment, the other analyses will be unaffected. The coding instructions for the product knowledge scale are presented in Appendix 4.6. The respective reliability coefficients (Cronbach's alpha) for VCRs and clothes dryers were .79 and .68.

The sixteen-item perceived risk scale which was initially pretested produced acceptable levels of reliability when further reduced to a thirteen-item scale (Cronbach's alpha = .74 for VCRs, Cronbach's alpha = .77 for clothes dryers). It was not possible to demonstrate the unidimensionality of this scale. This was possibly caused by the fact that the five facets of perceived risk are not necessarily correlated. For example, a clothes dryer may have very low social risk and physical risk, but high performance risk and financial risk. However, the conceptualization of the construct and the five facets where perceived risk is elicited are directly represented by the scale items, strongly implying face validity. The scores were computed additively for perceived risk (Dowling 1986).

Manipulation Checks

Manipulation checks were administered in order to get an understanding of how well the subjects performed their experimental tasks. Comprehension of the task, seriousness of the subject in performing the task, and the ability of the subject to respond to the task requirements were the

issues which were tapped by the items. The subjects indicated that they did not find the study confusing. The mean score was 2.36 where 1 denoted not confusing and 7 denoted confusing and 76.10% of the subjects checked three or less on this scale. On a different scale 78.50% checked a six or seven indicating that they took the task very seriously. The mean on this seven-point scale was 6.00. Most subjects did not seem to have experienced difficulty in playing the role (77.80% checked 3 or less). The mean was 2.30 where one denoted no difficulty in role playing and seven denoted difficulty. Similarly, the subjects did not seem to question the realism of the situations, indicated by a mean score of 5.50 where 7 meant very realistic. The majority (76.30%) checked five or above on this item. The brand information which was provided was reported to be easily understood by 73.20% (3 or less on the scale). The mean was 2.59 where one denoted easily understood. The subjects also thought the information was sufficient to make a choice, as the mean score of 5.01 indicated. On this item, where seven implied very sufficient, 66.50% checked five or above. All of these individual items indicate that overall the subjects performed the experimental tasks satisfactorily. A reliability coefficient of .71 (Cronbach's Alpha) was calculated for these six items. Although these items have not been used in combined form as a multi-item measure, the respectable coefficient indicates an overall reliability lending credence to an idea of a "manipulation check scale."

Another manipulation check was performed to establish

the ability of the price level manipulation to elicit different levels of perceived financial risk. It was argued that this would result in similar differences in the levels of perceived risk. As a result, the differences in the mean perceived risk scores across the price levels were examined. Although ANOVA results indicated differences ($F = 2.56$, $df = 2$, $p = .08$), these differences did not display expected patterns. The means were very similar in the low and high price conditions (44.69 and 44.53, respectively) and lower in the medium price condition (42.12). These results implied at least two possible interpretations: (1) price manipulations were not sufficient to elicit observable differences in perceived financial risk and therefore, there were no differences in terms of perceived risk in the high, medium, and low price conditions; (2) the perceived risk scale does not have construct validity, despite the earlier arguments claiming face validity.

To determine if the price manipulations did in fact elicit observable differences in perceived financial risk, the scores on the perceived financial risk item was examined. An ANOVA indicated that there was a significant difference ($F = 4.22$, $df = 2$, $p = .02$) and the means displayed the expected pattern: 5.36 at the low price, 5.79 at the medium price, and 5.86 at the high price levels. This finding was interpreted as indicating a successful manipulation of perceived financial risk.

Statistical Hypotheses

The hypotheses which were presented in chapter three were transformed into a series of directly testable statistical hypotheses. The testing procedure followed a three stage process. The first stage involves a general test of independence which examines the distribution of the different roles of price across the experimental conditions. The relationship is depicted in Figure 4.1. Second, four cell-wise comparisons--one for each role of price--were conducted for a more detailed analysis. A third set of hypotheses--this time within cell comparisons--were tested to establish stronger support for the research hypotheses. Following are the actual hypotheses which correspond to these three stages.

The original hypotheses suggested that under certain specific conditions, one of the four price roles would be observed at a higher rate than under the other conditions. Figure 4.2 matches each role of price with the appropriate experimental conditions. The first hypothesis relates to the omnibus test:

H1.1: There are differences among treatment cells with respect to roles of price.

The second set of hypotheses concern the cell-wise comparisons which try to establish that the independent variables have an effect on the role of price by demonstrating that it is more likely to observe a particular role of price in the matching cell than in the other cells. This set of hypotheses imply a comparison of the proportion

Price Difference

	High		Low
	H1 Dual Role	H2 Constraint Role	
Price	High		
	Low	H3 Attribute Role	H4 Minimal Role

Figure 4.1**LEVELS OF THE INDEPENDENT VARIABLES AND ROLE OF PRICE**

	Dual	Attribute	Constraint	No Role	Row Total
HP-HPd (Dual role predicted)	18	18	1	4	41
	44	44	2	10	28
	42	23	33	18	
HP-LPd (Attribute role predicted)	8	16	1	5	30
	27	53	3	17	20
	19	20	33	23	
LP-HPd (Constraint role predicted)	10	24	0	8	42
	24	57	0	19	29
	23	30	0	36	
LP-LPd (Minimal role predicted)	7	22	1	5	35
	20	63	3	14	23
	16	27	33	23	
Column Total	43 29	80 54	3 2	22 15	148 100

HP : High price condition
 LP : Low price condition
 HPd: High price-difference condition
 LPd: Low price-difference condition

Cell content: Count
 Row percentage
 Column percentage

Figure 4.2

DISTRIBUTION OF ROLE OF PRICE BY EXPERIMENTAL CONDITION

of cases with a particular role of price across the cells:

H2.1: The proportion of cases where price plays a dual role under the high price-high price difference condition is higher than the proportion of cases where price plays a dual role under the other conditions.

H2.2: The proportion of cases where price plays an attribute role under the high price-low price difference condition is higher than the proportion of cases where price plays an attribute role under the other conditions.

H2.3: The proportion of cases where price plays a constraint role under the low price-high price difference condition is higher than the proportion of cases where price plays a constraint role under the other conditions.

H2.4: The proportion of cases where price plays no role under the low price-low price difference condition is higher than the proportion of cases where price plays no role under the other conditions.

The third series of hypotheses are designed to provide stronger support for the hypotheses by making within cell comparisons among the different roles. These hypotheses test whether a particular role is observed more than the other roles in the corresponding cell.

H3.1: The proportion of cases where price plays a dual role under the high price-high price difference condition is greater than the respective proportions of cases where price plays other roles under the same condition.

H3.2: The proportion of cases where price plays an attribute role under the high price-low price difference condition is greater than the respective proportions of cases where price plays other roles under the same condition.

H3.3: The proportion of cases where price plays a constraint role under the low price-high price difference condition is greater than the respective proportions of cases where price plays other roles under the same condition.

H3.4: The proportion of cases where price plays no role under the low price-low price difference condition is greater than the respective proportions of cases where price plays other roles under the same condition.

Test of Hypotheses

The first hypothesis tested whether there was the expected overall trend in the distribution of the roles of price across treatment conditions. Figure 4.2 provides a frequency and percentage distribution of the roles of price across treatment conditions. Appendix 4.7 provides the same frequency and percentage distribution across the original twelve cells.

The first important finding is the very low number of cases which exhibited the constraint role and no role. It was not possible to reject the null hypothesis of independence ($\chi^2 = 11.41$, $df = 9$, $p = .25$) indicating that the overall distribution of the roles of price do not display the hypothesized pattern. The same analysis was done by including the medium price levels (i.e., a 4 X 6 contingency table). Although it was possible to reject independence in this case ($\chi^2 = 24.08$, $df = 15$, $p = .06$) these results were not taken as support for the research hypotheses either. This conclusion was based on the fact that, like the previous case, the pattern of distribution was not as expected.

The cells were collapsed across the product categories to generate Figure 4.2 and Appendix 4.7. The same analyses were also conducted separately for the two product categories and the same pattern of results were observed

(Appendix 4.8).

The second and third sets of hypotheses were stronger tests determining the lack of fit between the observed and the hypothesized distributions of the roles of price across treatment conditions. Despite the lack of overall fit, certain cells exhibited expected frequencies. As a visual inspection of Figure 4.2 implies, H2.1 ($z = 1.82$, $p = .03$) and H3.2 ($z = 2.17$, $p = .02$) are strongly supported. These findings indicate that the subjects used price either as an attribute alone or in the dual role; among the four basic experimental conditions the dual role is more likely to be observed in the high price-high price difference condition and the attribute role is the most likely role in the high price-low price difference condition.

In order to investigate potential differences, the sample was split into four groups based on the individuals' actual choices. The intent was to see if individuals who picked the same brand were distributed differently along the same dimensions: price role and experimental conditions. One chi-square test for each group yielded the same set of findings: There was no statistically significant overall pattern in how the price roles matched with the different experimental conditions; there was one group where the dual role was most likely to be observed in the high price-high price difference condition. The uneven distribution of subjects in these four choice groups (11, 29, 69, 114) is another factor complicating the interpretation of the above findings.

The implications of observing only a negligible number

of subjects demonstrating the constraint role and no role will be discussed in chapter five. At this juncture, the analysis shifts the focus to the two original propositions which had led to the four research hypotheses. To summarize, the factors influencing the likelihood of observing an attribute role and a constraint role are to be examined. However, given the empirical results, it seems more appropriate to assume that, in all situations, individuals are likely to use price in the attribute role. Therefore, the question becomes one of determining the antecedents of the attribute role (alone) and the dual role. Accordingly, the following analyses try to provide the possible explanations. At this stage of the analysis subjects which exhibited no role were excluded from the sample on which the analyses were run. Those few who exhibited the constraint role (alone) were combined with the dual role subjects to form the "constraint present" class. As a result, the dependent variable was transformed into a dichotomy (identified as ROP), with the attribute role (constraint not present) as the other class.

The following ANOVA model--with involvement and product knowledge as covariates--was tested:

$$\begin{aligned} \text{ROP} = & U + A_i + B_j + C_k + AB_{ij} + AC_{ik} + BC_{jk} \\ & + ABC_{ijk} + bx (X_{ijk} - U_x) + bz (Z_{ijk} - U_z) + e \end{aligned}$$

where

ROP = role of price
 U = overall population mean
 A = average price effect at level a
 B = average price difference effect at level b
 C = average product effect at level c

AB = two-way interaction effect at ab
 AC = two-way interaction effect at ac
 BC = two-way interaction effect at bc
 ABC = three-way interaction effect at cell abc
 X = correlation of involvement with price role
 Z = correlation of product knowledge with price role

As the results in Table 4.1 indicate, price has a marginally significant main effect at the $p = .09$ level ($F = 2.47$, $df = 2$) and price difference has a significant main effect at the $p = .005$ level ($F = 7.95$, $df = 1$). The regression line (i.e. the linear relationship between the covariates and the dependent variable) was not significant ($F = 0.91$, $df = 2$, $p = .40$). The close similarity of the ANOVA results without covariates (Appendix 4.9) to the results in Table 4.1 confirms this interpretation. Furthermore, it was not possible to establish significant bivariate correlations between the covariates and the dependent variable (see Table 4.2). The product main effect and the interaction effects were not found to be significant.

In addition to the above analysis, the same ANCOVA model was run for each product category separately. Accordingly, the product variable was dropped from both of these models. Confirming the earlier analysis, the pattern of results were not different for the two product categories. Furthermore, both sets of results confirmed the findings of the analysis which was conducted by combining the data for both product categories and including product as a variable in the model. The details of the analyses by product category are displayed in Appendix 4.10. Given unequal cell sizes, the

Table 4.1

ANCOVA: INDEPENDENT VARIABLES' EFFECTS ON ROLE OF PRICE

Source of Variation	SS	DF	MS	F	Sig. of F
Within Cells	40.96	180	.23		
Regression	.42	2	.21	.91	.402
Price	1.13	2	.56	2.47	.087
Price difference	1.81	1	1.81	7.95	.005
Product	.01	1	.01	.03	.853
Price by Price difference	.97	2	.49	2.14	.121
Price by Product	.20	2	.10	.44	.643
Product by Price difference	.00	1	.00	.01	.919
Price by Product by Price difference	.04	2	.02	.10	.908

Table 4.2

CORRELATION BETWEEN THE COVARIATES AND THE ROLE OF PRICE

	ROP by Knowledge	ROP by Involvement
Spearman Correlation Coefficient	.105	.072
Significance	.138	.316
N	200	198
Kendall Correlation Coefficient	.087	.059
Significance	.137	.315
N	200	198

regression method of partitioning the sum of squares was used in all of the above analyses.

A graphical analysis of the distribution of observations across price levels and price difference levels is presented in Figure 4.3 and Figure 4.4, respectively. By definition, the graphs for the attribute role and the constraint role are mirror images of each other. These graphs were analyzed to determine if the significant differences were in the expected directions.

Figure 4.3 displays the main effect of price as substantiated by the ANCOVA results. It shows a sharp decline in the percentage of cases exhibiting the attribute-only role as price increases to the medium level. Interestingly, however, there is only a minor decline in this percentage as price level changes from medium to high, thus, the modest level of significance ($p = .09$). The inverse situation is true for the constraint-present role: an increase in the percentage of cases exhibiting constraint role as price level increases. The percentages on the graphs indicate the percentage of cases exhibiting a particular role in that price level (e.g., percentage of attribute roles within the low price level).

Similar differences were observed when percentages were compared across price difference levels (Figure 4.4). The percentage of cases exhibiting the constraint role increased sharply as price difference level increased from low to high.

The findings displayed by Figure 4.4, and substantiated by the ANOVA results, with respect to the positive

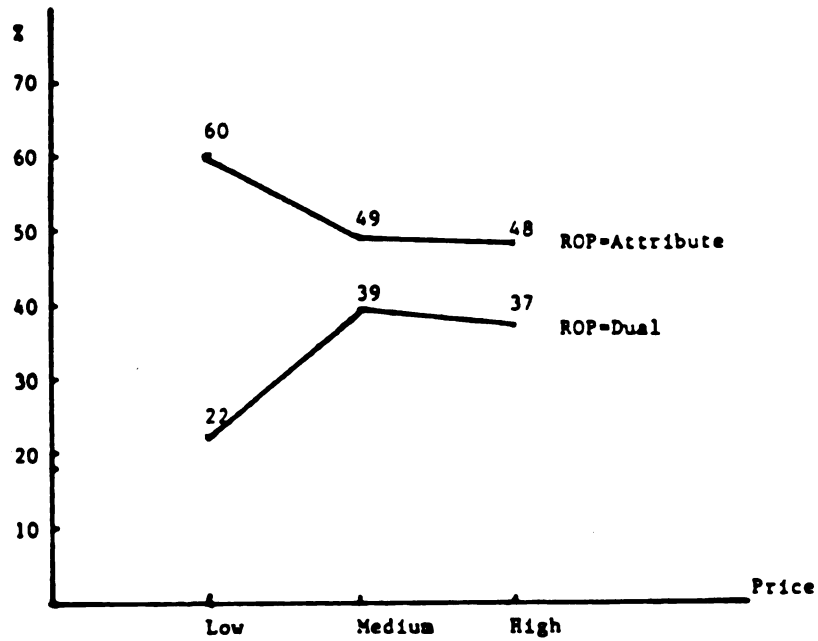


Figure 4.3

PRICE LEVELS BY ROLE OF PRICE

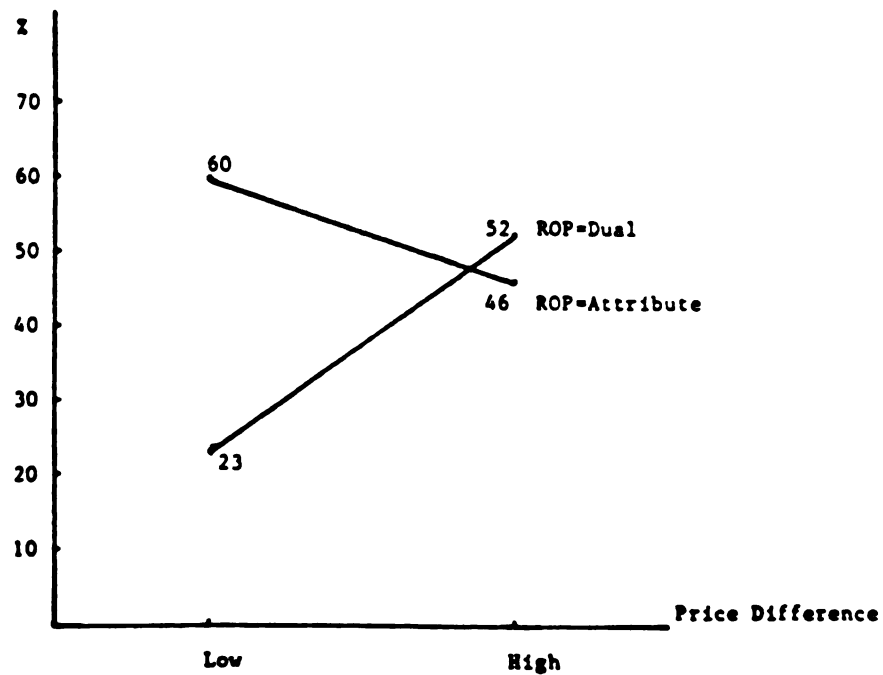


Figure 4.4

PRICE DIFFERENCE BY ROLE OF PRICE

relationship between price difference and the percentage of cases exhibiting the constraint role were expected. P2 had proposed that as the price differences increase, the probability that price would be used in the constraint role would increase. The positive impact of price on the probability of the constraint role, however, was not expected since P1 proposed that higher price levels would increase the likelihood of the attribute role. To investigate any possible differential behavior of price level effects within price difference levels, Figures 4.5 and 4.6 were constructed.

These graphs show an increase in the proportion of attribute cases only at the high price difference level as price changes from medium to high. Although this upward shift in the curve has positive implications for P1, the not significant price-price difference interaction effect preempts interpretations of this effect.

The unexpected positive effect of price on the probability of the occurrence of the constraint role can be explained in a way that is consistent with propositions one and two. In the conceptual framework it was suggested that price difference perceptions would best be captured within the context provided by the original stimulus (i.e., price). Following this logic, price differences were kept equal as a proportion (price difference divided by mean price) across price levels. This resulted in unequal absolute price differences across the treatment cells. In other words, absolute price differences increased as price levels increased, leading to the proposed price difference effects

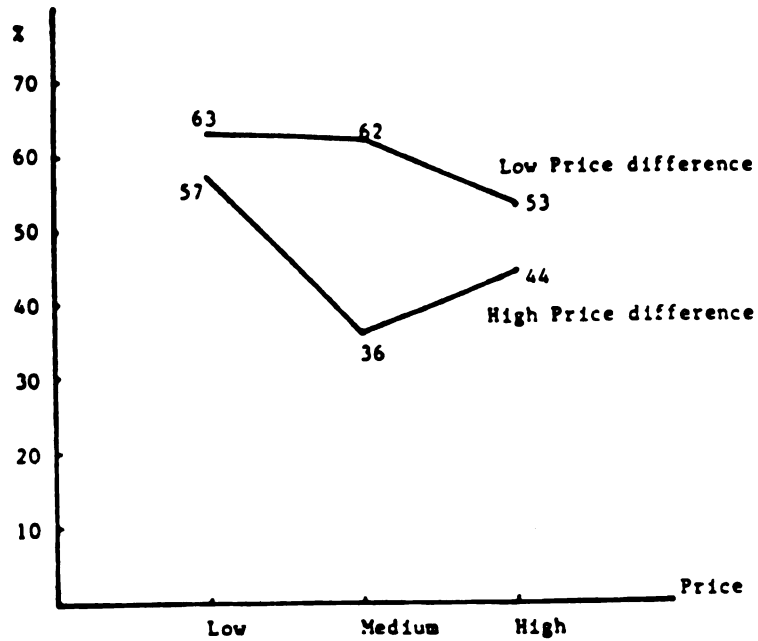


Figure 4.5

PRICE LEVEL BY PRICE DIFFERENCE: DUAL ROLE

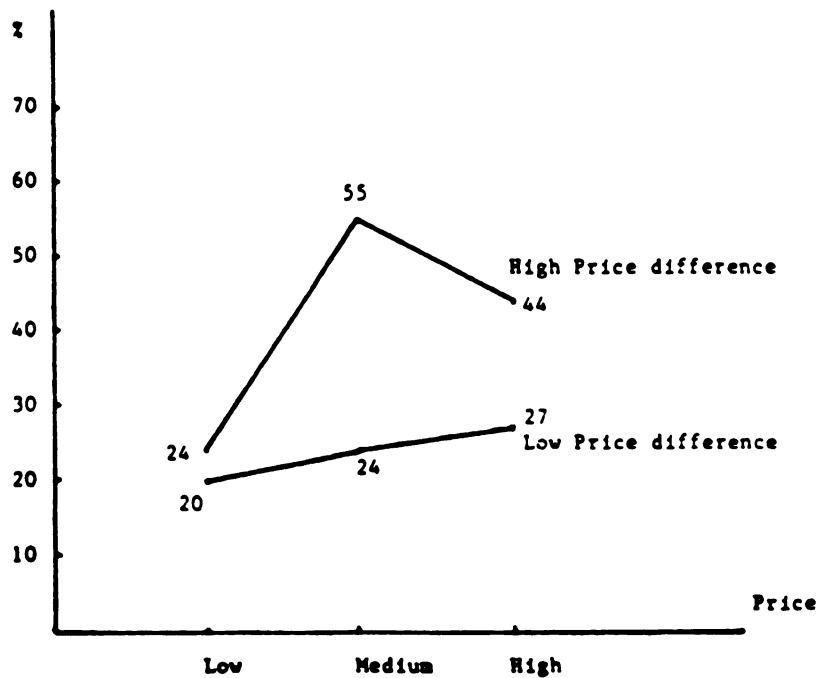


Figure 4.6

PRICE LEVEL BY PRICE DIFFERENCE: ATTRIBUTE ROLE

as "price" increased. To examine the issue, Figure 4.7 was constructed to observe the behavior of role of price with respect to absolute price differences.

The curve in Figure 4.7 outlines a steady increase in the proportion of constraint role as absolute price difference increases. Another interesting observation is the upward increase in the proportion of attribute roles at the end of the curve. A possible explanation is that price has (finally) played its proposed role (P1) in terms of increasing the probability of the occurrence of the attribute role since the point where the price difference equals 105 also represents the high price level. Both of the above speculations were tested next.

First, to establish that the upward turn of the curve in Figure 4.7 portrays a statistically significant effect, to test for non-linearity, and to determine if the downward turn of the curve is statistically significant, a trend analysis was conducted. The linear term was significant at the $p = .0007$ level ($F = 11.86$, $df = 1$) indicating that there is indeed an absolute price difference effect on the role of price. The quadratic term was not significant ($F = 0.70$, $df = 1$, $p = .40$) suggesting strong linearity up to the \$75 point. The cubic term, however, was marginally significant at the $p = .10$ level ($F = 2.79$, $df = 1$). Although this indicates a significant shift in the trend (i.e., proportion of attribute role increasing) it only provides partial evidence for P1. The differences between the data points reflected the actual differences in price in the trend analysis--unlike Figure 4.7 where all differences

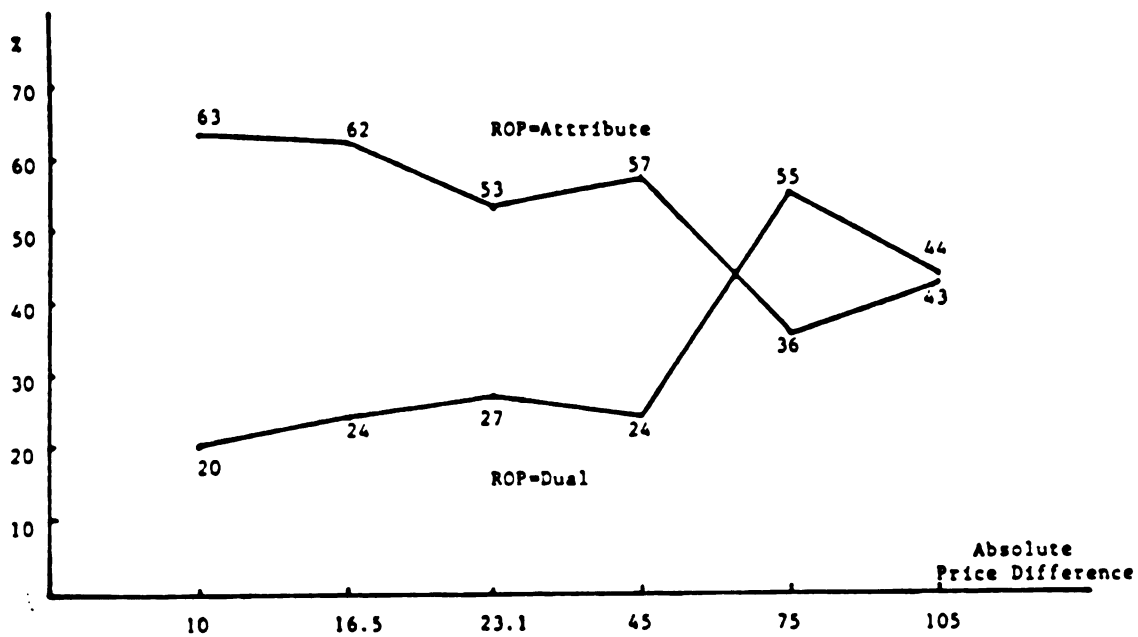


Figure 4.7

ABSOLUTE PRICE DIFFERENCES BY ROLE OF PRICE

are portrayed as equal regardless of the absolute differences.

To investigate further the difference between the data points shown on Figure 4.7, a series of cell-wise comparisons were run. The Tukey test was preferred since all pair-wise comparisons were being investigated. This test is suggested to be more powerful than the Scheffe test for pair-wise tests (Keppel 1982, p. 155). The only significant differences at the $p = .05$ level are between \$10 and \$75 levels, \$16 and \$75 levels, \$45 and \$75 levels. These results provide insight for the minimum levels of price difference which would elicit constraint role effects. The lack of significance between the \$75 and \$105 levels, at least at the $p = .05$ level, raises doubts about the P1 effect, and raises the possibility that the downward shift may be due to sampling error.

The analyses reported upto this point operationalized the reference price concept as the nominal price, after having established that mean income did not differ significantly across the experimental conditions. To examine whether such simplification can be justified and whether any relationship between income and perceived risk, and income and price role may be detected, a new set of analyses was conducted. First, income was included as a covariate in the original ANCOVA model. As expected, the same set of results as in the original analysis were observed. Price difference was significant ($F = 7.78$, $df = 1$, $p = .006$), price was marginally significant ($F = 2.64$, $df = 2$, $p = .08$), and none of the other main

effects or interaction effects were significant. These results, along with a one-way ANOVA testing the relationship between price role and income ($F = .75$, $df = 3$, $p = .52$), indicate that there is no significant income effect.

Income was also not significantly correlated with perceived risk ($r = .07$, $n = 222$, $p = .17$) and the financial risk indicators ($r = .01$, $n = 225$, $p = .50$ and $r = -.05$, $n = 227$, $p = .21$). However, another direct measure of perceived risk (Mancek7) was somewhat correlated by income ($r = .10$, $n = 227$, $p = .07$). This additional perceived risk measure was taken after the subjects had made their choice by directly asking them to indicate whether the purchase was [much riskier to much less risky] than usual.

Second, a ratio variable (P/I) was generated by dividing price by income, and similar analyses were conducted. P/I had a significant but low correlation with the two financial risk indicators ($r = .09$, $n = 227$, $p = .10$; and $r = .15$, $n = 225$, $p = .01$). One finding which is difficult to interpret is that P/I has a low negative correlation with perceived risk ($r = -.13$, $n = 222$, $p = .03$). The P/I variable is significantly correlated with the Mancek7 variable ($r = .19$, $n = 227$, $p = .002$). Overall, these results indicate a lack of significant relationship between income and perceived risk as measured by the original scale.

Summary

Most of the first group of null hypotheses were not rejected thus providing little support for the theoretical arguments. This was mainly due to the inability to either

induce or identify (purely) constraint role cases. Further analyses were conducted by recoding the dependent variable into a dichotomy with the categories being the constraint-present role and the attribute-alone (no constraint) role.

The ANCOVA results indicated that both price and price difference had a significant positive effect on the likelihood of observing a constraint role. The unexpected effect of the price levels was explained by its effect on absolute price differences. Accordingly, a possible role of absolute price differences on the role of price was interpreted. Further trend analysis supported this view along with providing some evidence for the hypothesized positive price effect on the likelihood of the attribute role. Following cell-wise comparisons provided some empirical evidence with respect to the minimum price differences eliciting constraint role effects.

Manipulation checks provided significant evidence that the subjects were able to comprehend the experimental instructions and perform the scenario tasks adequately. Perceived risk manipulation checks raised doubts about the construct validity of the perceived risk scale. Perceived financial risk scores indicated a significant difference across price level conditions, in the expected pattern, providing evidence for successful manipulation of perceived financial risk.

CHAPTER FIVE

SUMMARY AND DISCUSSIONS

In this chapter first a summary of the research is provided. Next, findings and their implications followed by the limitations of the study are examined. Finally, contributions and future research directions follow.

Summary

For a long time, researchers have pointed to the importance of and the need to understand use of price in decision processes (Monroe 1977, Winer 1987). Accordingly, the major objective of this study was to determine the factors which contribute to the way individuals use price in their decisions. Four alternative roles of price were identified from the literature: attribute role, constraint role, dual role, and no role. The first part of this study involved the development of a conceptual model which would lead to identifying possible antecedents and to guide formation of theoretical propositions related to the major objective of the study. A model based on the theory of

goal-directed behavior asserted that the purchase goal would elicit certain levels of perceived risk which, in turn, would influence the determination of the overall strategy. This overall strategy would then shape the way individuals use price in their decisions. The model also posited that price levels would have an impact on the amount of perceived risk, and price differences would impact the role of price due to the budget effects.

The second part of the study involved generating hypotheses from the model and empirically testing them. The model led to two basic propositions which suggested that: (1) high price differences would increase the probability of the occurrence of the constraint role, and (2) high prices would increase the probability of the occurrence of the attribute role. These two propositions were matched (high and low price, and price difference conditions) to develop the four research hypotheses.

An experiment was conducted to test the hypotheses. ANOVA results established that there were no significant differences with respect to important individual variables across the twelve treatment conditions.

The findings first indicated that a constraint-alone role and no role were adopted only by a negligible number of subjects. This finding raises some important theoretical and methodological questions which will be discussed in the next section. Partly due to this result, most of the hypotheses were not supported. At this point it could not be concluded that either price or price difference has any effect on the role of price.

In the following phase of analyses, first, role of price was coded into a dichotomy with constraint role present and attribute-only roles as the two categories. Then propositions 1 and 2 were investigated. The findings indicated that the price differences and price levels both had significant effects on the role of price above the .10 level. Led by the unexpected effect of price, further analyses identified that absolute price differences had significant effects on the role of price.

Important Findings and Implications

Absence of Constraint Role

Only 2.10% of the subjects indicated that they used price in the constraint-only role. This low frequency raises some methodological as well as theoretical possibilities. Theoretically, it is possible to suggest that individuals never use price in the constraint-only role and that the above 2.10% represent error in classification. The validity of this argument is difficult to establish based on the findings in this study. However, it is possible to argue that certain real market conditions make it extremely difficult to observe this phenomenon. For many consumer products it would be difficult to find a price which is separated from its closest (in terms of price) alternative by a large margin sufficient enough to eliminate the second alternative from consideration. Whether at the low or high end of the spectrum, there would always be alternatives close enough in price that they would warrant consideration. This study, however, does not provide any

evidence to evaluate the validity of this explanation.

There are a number of possible methodological explanations. The first concerns issues about the amount of realism induced by scenarios. In view of the numbers in Table 5.1, this explanation does gain credence. Fifty-two percent of the subjects with valid responses used price in the attribute-only role--they did not feel any constraints--and forty-six percent of the subjects chose the most expensive brand. The implication that subjects chose the more expensive brands because they were not actually/really spending money is probably a natural speculation. However, there is evidence to the contrary. The same subjects who were asked to make a similar purchase decision in the warm-up exercises demonstrated a totally different pattern. Of the valid responses, 68 percent indicated that they would buy at the less expensive outlet (the difference was \$15) to avoid driving fifteen extra miles. These findings indicate that the subjects were concerned with the amount they were spending and as a group they were not price-insensitive.

The second methodological explanation concerns the inadequacy of the manipulations to induce the desired effects. The conceptual discussions had posited that high prices would induce attribute roles and, as a corollary to this, it was concluded that the probability of not observing the attribute role would increase at the "low" price level. It is possible that the "low" price levels in this study were not sufficiently low to affect this probability significantly. This is an empirical issue and it is

Table 5.1
OVERALL DISTRIBUTION OF

SUBJECTS' BRAND CHOICES	ROLE OF PRICE USED
Most Expensive Brand : 54.40%	Attribute Role : 52.10%
·	
· : 28.10%	Dual Role : 32.90%
TO	
· : 12.20%	Constraint Role: 2.10%
·	
Least Expensive Brand: 5.20%	Minimal Role : 12.80%

difficult to determine the validity of this argument with the available data. Another possible argument is that the price differences were not large enough to elicit constraint roles. However, the analyses provide evidence to the contrary. The current situation arises not because the constraint role was not observed but because a majority of the subjects (85.00%) would also consider the more expensive brand.

Another possibility is the failure of the measurement instrument to successfully detect occurrences of the constraint role. Although there is strong evidence for reliability and validity of the measures for the cases used in the analysis, the relatively high number of cases (18.18%) eliminated due to imperfect dependent measures is strong evidence for the inefficiency of the instrument. To investigate this possibility further a number of additional analyses were conducted. First, the chi-square and ANCOVA tests which were run initially were repeated twice by using the two dependent measures independently. The chi-square analysis with the first dependent measure did not yield a significant pattern (chi-square = 9.20, df = 15, p = .87). The same analysis yielded a statistically significant pattern when the second dependent measure was used (chi-square = 24.53, df = 15, p = .06). As in the previous analyses, the pattern of results were not as expected but certain cells exhibited expected frequencies: Highest occurrence of the dual role was in the high price-high price difference situation; in the high price-low price difference condition the most common role was the attribute role.

Similar results were obtained when the ANCOVA tests were conducted with the two dependent measures independently. The first dependent measure did not yield any significant effects, and price difference emerged as a significant effect ($F = 7.84$, $df = 1$, $p = .006$) when the second dependent measure was utilized. Although the above analyses do not prove one dependent measure as superior over the other, they do demonstrate that the two measures result in somewhat different classifications and different levels of predictive validity.

A second attempt to evaluate the validity of the dependent measure involved the comparison of actual choices with price roles. A certain distribution pattern would be expected if the subjects are correctly classified into price roles. First, one would not expect to find a subject who has reportedly used price in the constraint role and at the same time picked the most expensive brand. Second, one would expect to observe an increase in the frequency of attribute role as the brands become more expensive. Third, one would expect to observe a relatively small number of dual roles at the most and least expensive brand cells and higher frequencies at the intermediate levels. To investigate these possibilities the cross classification in Table 5.2 was constructed. This cross-tabulation displays a significant pattern ($\chi^2 = 122.10$, $df = 9$, $p = .001$). Furthermore, this pattern is as expected: There are no subjects in the most expensive-constraint role cell; the frequency of attribute roles increase (3, 6, 31, 78) as the brands become more expensive; the dual roles are

Table 5.2

CROSSTABS: BRAND CHOICE BY ROLE OF PRICE

	Constraint	Attribute	Dual	Minimal
Brand A (Least Expensive)	3 27 60	3 27 3	5 46 7	0
Brand B	1 3 20	6 21 5	21 72 30	1 3 3
Brand C	1 1 20	31 45 26	37 54 53	0
Brand D (Most Expensive)	0	78 68 66	7 6 10	29 26 97

Cell content: Count
Row percentage
Column percentage

concentrated at the intermediate levels (7, 21, 37, 5). The above distribution provides at least partial evidence that the dependent measure instrument overall produces valid classifications. The cross-tabulations were also constructed using the two instruments separately (Appendix 5.1) and identical patterns were observed.

Finally, the failure to observe the constraint role may be due to a demand artifact. The experimental task itself may possibly have disguised the constraint role by suggesting to the subjects that they had "... decided to buy...(and) would like to spend (about)..." The initial theoretical arguments which suggested that the purchase task would lead to an "evoked price" determining the amount of perceived (financial) risk provide further support for this argument. Although likely, this explanation does not account for the cases where the attribute role was observed when not expected.

The above considerations lead to a temporary conclusion that the failure to observe the constraint-only role was due to the high "low" price levels inducing the desire to spend more.

Price Difference Effects

As hypothesized, price differences did have a positive relationship with the probability of observing the constraint role. However, subjects demonstrating the constraint role were also using price in the attribute role.

The finding that absolute price differences have an effect on the role of price and on choice is contrary to

popular belief in the pricing literature. Mostly based on Weber's law, earlier research postulates that price difference perceptions are determined by the original stimulus intensity (Monroe 1973). Within the context of this study, the Weberian expectation would suggest that differences in role of price or choice would not be observed across price levels since price differences are equal in proportion. This study, therefore, implies the necessity of further investigation on this issue. Kamen and Toman (1970, 1971), and Stapel (1972) have also presented findings contradicting Weber's law with respect to price perceptions.

The operationalization of price differences in this study, along with the findings, produce certain pricing implications. One way to prevent the constraint role from taking effect may be to shrink large price differences by introducing alternative models (or brands in the retailing situations) which split this price difference into smaller parts.

Price Effect

High prices were hypothesized to increase the probability of attribute role. Possibly due to the inability of the study to effectively simulate "low" prices, it was not possible to support the hypothesized effect of price. It is still possible to infer certain pricing implications.

Both of the products in this study were rather highly priced and durable. This suggests that most individuals are already above their perceived financial risk threshold, and

are likely to be sensitive to information or messages suggesting risk reduction. Accordingly, it may be easier to justify high price differences by focusing on avoiding the negative rather than emphasizing a positive difference such as more mileage, or an additional attribute. Although the present research has not compared the ability of "positive" statements to justify higher prices, the findings and the initial theoretical arguments suggest the power of the "negative" to this effect. The occurrence of the attribute role in unexpected frequencies at certain experimental conditions is the basis of this argument.

In short, the findings have promotional implications. For higher priced goods, or brands at the high end of the price range, it may be more effective to suggest protection against product failure rather than emphasize an additional benefit to justify a price difference.

Although price has had an effect in the unexpected direction, its influence has been explained by its direct effect on price differences. It should be noted that this explanation is valid within the theoretical context of this study. In other words, empirically, it is yet to be determined whether price would, or it would not increase the likelihood of the constraint role when it has no effect on price differences.

Price and Perceived Risk Relationships

A positive relationship between price and perceived risk has been widely accepted in the marketing literature (Assael 1988, p. 168). This relationship is based first on

empirical findings which indicate that perceived financial risk is a common and in many cases a very important facet of perceived risk. Consequently, conceptualization of perceived risk has come to include the financial facet as an integral part of the construct. Therefore, a positive relationship between perceived risk and price is implied by definition. There have also been studies demonstrating this positive relationship empirically (for example, Bearden and Shimp 1982). The findings in this study, however, challenge some of the widely accepted assumptions. The perceived risk measures did not increase as expected as price levels were raised from low to medium to high. A check indicated that perceived financial risk did indeed increase as expected. This leads to the implication that price may have a positive effect on perceived financial risk but may not necessarily have a positive relationship with perceived risk. Theoretically, this would be possible when other variables interact in a way to affect the other facets of perceived risk in the opposite direction. In this study, the possible interacting factor could be product category. A closer look at the relationship between perceived risk and price within product categories shows a significant interaction effect ($F = 3.03$, $df = 2$, $p = .05$; Appendix 5.2). It is not possible to identify the specific variable interacting with price as product category changes. However, there is evidence to question the common wisdom that perceived risk will increase as price levels increase.

Based on the above results, it is apparent that the desired perceived risk range was not generated through price

manipulations. More specifically, the basic premises of this study suggest that the low price level was not sufficiently low to generate low levels of perceived risk and thus did not decrease the likelihood of observing attribute role in the corresponding experimental groups. In fact, the mean response (3) to the question which asks the subjects to indicate whether the prices in the exercise were [much higher to much lower] than expected, in absolute terms means "about the same as I would expect." The intention was to provide prices which were "slightly lower than expected" or "much lower than expected" for the low price groups.

Income Effects

The arguments in the first two chapters indicated that income, along with price, would determine the amount of financial risk perceived and, therefore, would have an effect on the role of price. However, the analyses did not demonstrate these relationships: Income was not significantly correlated with perceived financial risk or with role of price. While seemingly contra-intuitive, these findings can be explained. Monroe (1977) claims that "as long as the alternative price offerings are within [an] acceptable range, income or wealth is less likely to play a significant role in the purchase decision" (p. 296).

Involvement and Product Knowledge

The effects of involvement and product knowledge were investigated in an exploratory manner. Findings indicate no significant relationship between these variables and role of

price. These findings, however, are not sufficient for rejecting possible relationships. These findings could well be explained by the specific choice conditions imposed by the scenarios. Product knowledge differences may have been rendered inconsequential by forcing the subjects to make a choice where product knowledge has no impact on interpreting or making judgements about the trade-off dimensions. Secondly, the choice problem was quite explicitly formulated for the subjects, thus eliminating formulation differences likely to result from different levels of product knowledge. Possibly, the effects of involvement were eliminated in a similar fashion. The choice was one closely resembling a gamble. The correlation between involvement and product knowledge was significant ($r = .56$, $n = 268$, $p = .0001$), supporting earlier research (Sujan 1985).

Limitations

The validity of the above findings and interpretations rest on a number of assumptions. Some of these assumptions and other concerns need to be exhibited to outline the limitations of the present study.

One set of limitations are methodological in nature. First, as the study had earlier asserted, the difficulty of manipulating the variables of interest and maintaining the control for internal consistency had necessitated the use of scenarios. Despite the encouraging results of the manipulation checks, it is possible that the findings may lack external validity. The relevant concern would be whether the relationships would hold in the presence of

other variables which were held constant or not accounted for. These concerns, obviously, present opportunities for further research.

The second related limitation is the exact nature of the choice task. Controlling for other relevant variables, the task presented the subjects with a "gamble" in the words of a participant. Although it is common to make decision-theoretic inferences from similar gambling studies (e.g., Kahneman and Tversky 1979, Slovic and Lichtenstein 1983), it would be difficult to argue that the typical consumer encounters such choice situations with known probabilities and explicitly formulated trade-offs. One advantage of the present study over those cited is the amount of effort expended to place this "gamble" in a common consumer context.

The measurement instrument for the dependent variable is also a concern because of its exploratory nature. A more extensive protocol study may help to improve the efficiency of the scale. The second set of limitations concern the confounding factors in effect in this study. Without any doubt, these concerns necessitate further research to validate the established relationships.

The first confounding factor is the price range. In an effort to manipulate price differences and to keep the number of brands equal, price ranges varied along with price differences. In other words, inevitably, the proportion of price range to the reference price was equal across price levels but different across price difference levels. Consequently, the question of whether the "real" antecedent

is the price range is raised. In fact, Petroschius and Monroe (1987) claim that price range has an effect on the perceptions of quality and value.

Another confounding factor uncontrolled for the same reasons is the price difference between the reference price which is provided in the scenario, and the price of the most expensive brand. Again, this difference relative to the reference price is constant across price levels but varies across price difference levels. Although the issue is one of difference, the qualitative implications of such a finding are different.

The effects of the absolute price differences introduce a new dimension to the above confounding factors. The fact that the absolute quantities have a main effect suggests that the above confounding factors--range and distance from the reference price--should also be considered in terms of absolute differences in future research as well as relative differences. In absolute terms, both price range and distance from the reference price are different in all of the six experimental conditions.

Contributions

The present study was undertaken with the general purpose of contributing to the knowledge base concerning how individuals use price in purchase decisions. The results of the study indicate that progress toward that end has been accomplished on a number of dimensions. There are theoretical and methodological contributions of the study, as well as managerial implications and future research

directions.

The study offers a general theoretical framework within which the role of price can be examined. This framework integrates the basic tenets of action theory with the decision making literature. Although the proposed model is likely to undergo further refinements, at this juncture, its role in generating significant and testable hypotheses is an important contribution. Furthermore, the ability to integrate the findings of this study within a theoretical context is highly desirable for both prediction and explanation purposes.

Another contribution of the study is the development of the role of price measure. Despite possible weaknesses of the measure, this is an improvement in a needed area. Traditionally, input-output analyses have been used to understand complex decision situations and process has been inferred from outcomes. Some researchers, who have been bothered by the inadequacy of input-output models to guide process research, have favored process tracing methods such as verbal protocols, information acquisition behavior and the like (e.g., Payne, Braunstein and Carroll 1978, Todd and Bensabat 1987). Although process tracing methods provide solutions to the weaknesses of input-ouput models, they impose certain practical difficulties. Mainly, acquiring data at the quantities required for statistical testing (which is rather easily attainable in input-output studies) imposes excessive time demands. The present research has made an attempt to find a compromise alternative. The basic premise of the instrument is to present the subject with

condensed "models" of process (thereby getting at process related issues) and enabling them to respond with a paper and pencil instrument (thus saving both response and coding time). The responses to the "other" categories (which are actually written protocols) in both of the dependent instruments indicate that the options (i.e., condensed models) presented to the subjects were fairly representative of the actual processes they went through.

The empirical findings of the study suggest some managerial contributions. Findings indicate a potent way to justify large price differences with "expensive" products is to focus promotional (advertising or sales person) messages on avoiding important negative outcomes. Furthermore, there is a strong indication that individuals do employ price as a constraint in a choice situation with large price differences, however, it is more accurate to conceptualize this constraint figure with a possible deviation rather than a set amount.

While the above are the major contributions of the study, the other implications cited in the previous section also provide modest contributions. Similarly, this study suggests future research opportunities partly with respect to the untested relationships in the original theoretical model, and partly due to the findings challenging common wisdom.

Future Research Directions

In order to provide stronger arguments for the claims made by this study, a series of research questions formulate the short term agenda on this topic. These questions are primarily related to the unexpected findings and the confounding variables in this study.

One replication of this study is needed where the difference between the reference price and the more expensive brands are fixed across the cells as price differences are varied in the usual fashion. Another replication where price ranges are fixed is also necessary. These studies would help resolve the issues related to the confounding variables. Obviously, given the uncertainty about the representation of price differences, these two studies need to be conducted with relative and absolute price differences.

Another area of needed research involves the improvement of the role of price measure. This research would ideally generate a comprehensive and representative set of subject responses (condensed process models) from verbal protocol studies. If successful, this measurement methodology could be extended to other areas of research focusing on processes.

The yet untested relationships of the model, especially, the case where the decision strategy is to "increase expected benefit" constitute a longer-term agenda. Whether the different decision strategies do actually lead to different uses of price in the decision process can be studied by replicating this study by changing the trade-off

item to a positively stated difference such as pounds of laundry washable in one use, or guaranteed miles of use with a tire, etc. Testing of the theoretical model as a whole is obviously a major future challenge.

APPENDICES

APPENDIX 3.1

INITIAL PRODUCT LIST

Bread.....
Radies.....
Automobiles.....
Bicycles.....
Stereo Sound Systems.....
Blankets.....
Blow Dryers.....
Video Cameras.....
Carpeting.....
Luggage.....
Coles.....
Washing Machines.....
Tires.....
Bath Soap.....
Telephones.....
Refrigerators.....
Shoes.....
TV Sets.....
Sweaters.....
Vitamins.....
Video Cassette Recorder..
Beds.....
Sofas.....
Beer.....
Houses.....
Watches.....
Personal Computers.....
35 mm SL Reflex Cameras..
Typewriters.....
Deodorant/Antiperspirant..
Clothes Dryers.....
Calculators.....
Vacuum Cleaners.....

APPENDIX 3.2

PRODUCT CATEGORY RATING INSTRUMENT FOR JUDGES

Dear Participant:

First, we would like to thank you for agreeing to act as a judge in our research. Your cooperation is much appreciated. Please take a few minutes to acquaint yourself with the task and its objectives before you move on to complete the questionnaire.

A list of product categories are provided below. Some of these will be eventually chosen and used in an experiment where individuals will be asked to make choices in one product category among several alternative brands. You are asked to assist in the selection of these product categories.

It is essential that the selected product categories satisfy certain conditions on a number of factors. What you are asked to do is to rate each product category on these given factors. Your role as a judge is to tell us how you think most people would feel about the given product categories.

We hope this does not tax your already scarce time and, if you can, your timely response will be appreciated.

Again, thank you.



Dogan Eroglu

1. For the following products indicate whether most individuals would perceive high or low non-price differences across brands. Please circle the appropriate number, 1 denoting very low perceived difference and 7 denoting very high perceived difference.

<u>Product</u>	<u>very low difference</u>					<u>very high difference</u>	
Bread.....1	2	3	4	5	6	7	
Radios.....1	2	3	4	5	6	7	
Automobiles.....1	2	3	4	5	6	7	
Bicycles.....1	2	3	4	5	6	7	
Stereo Sound Systems.....1	2	3	4	5	6	7	
Blankets.....1	2	3	4	5	6	7	
Blow Dryers.....1	2	3	4	5	6	7	
Video Cameras.....1	2	3	4	5	6	7	
Carpeting.....1	2	3	4	5	6	7	
Luggage.....1	2	3	4	5	6	7	
Colas.....1	2	3	4	5	6	7	
Washing Machines.....1	2	3	4	5	6	7	
Tires.....1	2	3	4	5	6	7	
Bath Soap.....1	2	3	4	5	6	7	
Telephones.....1	2	3	4	5	6	7	
Refrigerators.....1	2	3	4	5	6	7	
Shoes.....1	2	3	4	5	6	7	
TV Sets.....1	2	3	4	5	6	7	
Sweaters.....1	2	3	4	5	6	7	
Vitamins.....1	2	3	4	5	6	7	
Video Cassette Recorder....1	2	3	4	5	6	7	
Beds.....1	2	3	4	5	6	7	
Sofas.....1	2	3	4	5	6	7	
Beer.....1	2	3	4	5	6	7	
Houses.....1	2	3	4	5	6	7	
Watches.....1	2	3	4	5	6	7	
Personal Computers.....1	2	3	4	5	6	7	
35 mm SL Reflex Cameras....1	2	3	4	5	6	7	
Typewriters.....1	2	3	4	5	6	7	
Deodorant/Antiperspirant...1	2	3	4	5	6	7	
Clothes Dryers.....1	2	3	4	5	6	7	
Calculators.....1	2	3	4	5	6	7	
Vacuum Cleaners.....1	2	3	4	5	6	7	

2. Indicate whether certain individuals would be significantly more familiar with the following product categories than other individuals due to income, gender, age, or other characteristics. Please circle the appropriate number where 1 denotes very low differences in familiarity with the product category and 7 denotes very high differences in familiarity with the product category.

<u>Product</u>	<u>very low difference</u>					<u>very high difference</u>	
Bread.....	1	2	3	4	5	6	7
Radios.....	1	2	3	4	5	6	7
Automobiles.....	1	2	3	4	5	6	7
Bicycles.....	1	2	3	4	5	6	7
Stereo Sound Systems.....	1	2	3	4	5	6	7
Blankets.....	1	2	3	4	5	6	7
Blow Dryers.....	1	2	3	4	5	6	7
Video Cameras.....	1	2	3	4	5	6	7
Carpeting.....	1	2	3	4	5	6	7
Luggage.....	1	2	3	4	5	6	7
Colas.....	1	2	3	4	5	6	7
Washing Machines.....	1	2	3	4	5	6	7
Tires.....	1	2	3	4	5	6	7
Bath Soap.....	1	2	3	4	5	6	7
Telephones.....	1	2	3	4	5	6	7
Refrigerators.....	1	2	3	4	5	6	7
Shoes.....	1	2	3	4	5	6	7
TV Sets.....	1	2	3	4	5	6	7
Sweaters.....	1	2	3	4	5	6	7
Vitamins.....	1	2	3	4	5	6	7
Video Cassette Recorder....	1	2	3	4	5	6	7
Beds.....	1	2	3	4	5	6	7
Sofas.....	1	2	3	4	5	6	7
Beer.....	1	2	3	4	5	6	7
Houses.....	1	2	3	4	5	6	7
Watches.....	1	2	3	4	5	6	7
Personal Computers.....	1	2	3	4	5	6	7
35 mm SL Reflex Cameras....	1	2	3	4	5	6	7
Typewriters.....	1	2	3	4	5	6	7
Deodorant/Antiperspirant....	1	2	3	4	5	6	7
Clothes Dryers.....	1	2	3	4	5	6	7
Calculators.....	1	2	3	4	5	6	7
Vacuum Cleaners.....	1	2	3	4	5	6	7

3. Indicate whether you think most individuals are likely to purchase the following products very frequently or very infrequently by circling the appropriate number. 1 denotes very infrequently and 7 denotes very frequently.

<u>Product</u>	<u>very</u> <u>infrequently</u>					<u>very</u> <u>frequently</u>	
Bread.....1	2	3	4	5	6	7	
Radios.....1	2	3	4	5	6	7	
Automobiles.....1	2	3	4	5	6	7	
Bicycles.....1	2	3	4	5	6	7	
Stereo Sound Systems.....1	2	3	4	5	6	7	
Blankets.....1	2	3	4	5	6	7	
Blow Dryers.....1	2	3	4	5	6	7	
Video Cameras.....1	2	3	4	5	6	7	
Carpeting.....1	2	3	4	5	6	7	
Luggage.....1	2	3	4	5	6	7	
Colas.....1	2	3	4	5	6	7	
Washing Machines.....1	2	3	4	5	6	7	
Tires.....1	2	3	4	5	6	7	
Bath Soap.....1	2	3	4	5	6	7	
Telephones.....1	2	3	4	5	6	7	
Refrigerators.....1	2	3	4	5	6	7	
Shoes.....1	2	3	4	5	6	7	
TV Sets.....1	2	3	4	5	6	7	
Sweaters.....1	2	3	4	5	6	7	
Vitamins.....1	2	3	4	5	6	7	
Video Cassette Recorder....1	2	3	4	5	6	7	
Beds.....1	2	3	4	5	6	7	
Sofas.....1	2	3	4	5	6	7	
Beer.....1	2	3	4	5	6	7	
Houses.....1	2	3	4	5	6	7	
Watches.....1	2	3	4	5	6	7	
Personal Computers.....1	2	3	4	5	6	7	
35 mm SL Reflex Cameras....1	2	3	4	5	6	7	
Typewriters.....1	2	3	4	5	6	7	
Deodorant/Antiperspirant...1	2	3	4	5	6	7	
Clothes Dryers.....1	2	3	4	5	6	7	
Calculators.....1	2	3	4	5	6	7	
Vacuum Cleaners.....1	2	3	4	5	6	7	

4. Please indicate how much perceived-risk the following product categories would induce in most people. In other words, how uncomfortable would they feel about their ability to make the right choice when they are not familiar with brand-names? Circle the appropriate number where 1 denotes no risk at all and 7 denotes extreme risk.

<u>Product</u>	not at all risky					extremely risky	
Bread.....1	2	3	4	5	6	7	
Radios.....1	2	3	4	5	6	7	
Automobiles.....1	2	3	4	5	6	7	
Bicycles.....1	2	3	4	5	6	7	
Stereo Sound Systems.....1	2	3	4	5	6	7	
Blankets.....1	2	3	4	5	6	7	
Blow Dryers.....1	2	3	4	5	6	7	
Video Cameras.....1	2	3	4	5	6	7	
Carpeting.....1	2	3	4	5	6	7	
Luggage.....1	2	3	4	5	6	7	
Colas.....1	2	3	4	5	6	7	
Washing Machines.....1	2	3	4	5	6	7	
Tires.....1	2	3	4	5	6	7	
Bath Soap.....1	2	3	4	5	6	7	
Telephones.....1	2	3	4	5	6	7	
Refrigerators.....1	2	3	4	5	6	7	
Shoes.....1	2	3	4	5	6	7	
TV Sets.....1	2	3	4	5	6	7	
Sweaters.....1	2	3	4	5	6	7	
Vitamins.....1	2	3	4	5	6	7	
Video Cassette Recorder....1	2	3	4	5	6	7	
Beds.....1	2	3	4	5	6	7	
Sofas.....1	2	3	4	5	6	7	
Beer.....1	2	3	4	5	6	7	
Houses.....1	2	3	4	5	6	7	
Watches.....1	2	3	4	5	6	7	
Personal Computers.....1	2	3	4	5	6	7	
35 mm SL Reflex Cameras....1	2	3	4	5	6	7	
Typewriters.....1	2	3	4	5	6	7	
Deodorant/Antiperspirant...1	2	3	4	5	6	7	
Clothes Dryers.....1	2	3	4	5	6	7	
Calculators.....1	2	3	4	5	6	7	
Vacuum Cleaners.....1	2	3	4	5	6	7	

APPENDIX 3.3

PRODUCT CATEGORY RATING INSTRUMENT FOR SELF

Dear Participant:

First, we would like to thank you for agreeing to assist us in our research. Your cooperation is much appreciated. Please take a few minutes to acquaint yourself with the task on each page before you move on to answer the questions.

Basically, we are interested in finding out about your feelings and opinions about a number of product categories.

We hope this does not tax your already scarce time and, if you can, your timely response will be appreciated.

Again, thank you!



Dogan Eroglu

1. For the following products please indicate whether you perceive high or low non-price differences across brands. For example, do you think there is much difference between Kenmore, Westinghouse, GE, (and other brands you know) brand dishwashers, other than price? Please circle the appropriate number for each product category: 1 denotes very low perceived differences and 7 denotes very high perceived differences.

<u>Product</u>	<u>very low difference</u>					<u>very high difference</u>	
Bread.....1	2	3	4	5	6	7	
Radios.....1	2	3	4	5	6	7	
Automobiles.....1	2	3	4	5	6	7	
Bicycles.....1	2	3	4	5	6	7	
Stereo Sound Systems.....1	2	3	4	5	6	7	
Blankets.....1	2	3	4	5	6	7	
Blow Dryers.....1	2	3	4	5	6	7	
Video Cameras.....1	2	3	4	5	6	7	
Carpeting.....1	2	3	4	5	6	7	
Luggage.....1	2	3	4	5	6	7	
Colas.....1	2	3	4	5	6	7	
Washing Machines.....1	2	3	4	5	6	7	
Tires.....1	2	3	4	5	6	7	
Bath Soap.....1	2	3	4	5	6	7	
Telephones.....1	2	3	4	5	6	7	
Refrigerators.....1	2	3	4	5	6	7	
Shoes.....1	2	3	4	5	6	7	
TV Sets.....1	2	3	4	5	6	7	
Sweaters.....1	2	3	4	5	6	7	
Vitamins.....1	2	3	4	5	6	7	
Video Cassette Recorder....1	2	3	4	5	6	7	
Beds.....1	2	3	4	5	6	7	
Sofas.....1	2	3	4	5	6	7	
Beer.....1	2	3	4	5	6	7	
Houses.....1	2	3	4	5	6	7	
Watches.....1	2	3	4	5	6	7	
Personal Computers.....1	2	3	4	5	6	7	
35 mm SL Reflex Cameras....1	2	3	4	5	6	7	
Typewriters.....1	2	3	4	5	6	7	
Deodorant/Antiperspirant...1	2	3	4	5	6	7	
Clothes Dryers.....1	2	3	4	5	6	7	
Calculators.....1	2	3	4	5	6	7	
Vacuum Cleaners.....1	2	3	4	5	6	7	

2. Please indicate how familiar you are with the following product categories by circling the appropriate number where 1 denotes very low familiarity and 7 denotes very high familiarity. You may consider yourself familiar with a product category for reasons other than personal use. For example, you may have read about it, heard a friend talk about it, etc.

<u>Product</u>	not at all familiar					very familiar	
Bread.....1	2	3	4	5	6	7	
Radios.....1	2	3	4	5	6	7	
Automobiles.....1	2	3	4	5	6	7	
Bicycles.....1	2	3	4	5	6	7	
Stereo Sound Systems.....1	2	3	4	5	6	7	
Blankets.....1	2	3	4	5	6	7	
Blow Dryers.....1	2	3	4	5	6	7	
Video Cameras.....1	2	3	4	5	6	7	
Carpeting.....1	2	3	4	5	6	7	
Luggage.....1	2	3	4	5	6	7	
Colas.....1	2	3	4	5	6	7	
Washing Machines.....1	2	3	4	5	6	7	
Tires.....1	2	3	4	5	6	7	
Bath Soap.....1	2	3	4	5	6	7	
Telephones.....1	2	3	4	5	6	7	
Refrigerators.....1	2	3	4	5	6	7	
Shoes.....1	2	3	4	5	6	7	
TV Sets.....1	2	3	4	5	6	7	
Sweaters.....1	2	3	4	5	6	7	
Vitamins.....1	2	3	4	5	6	7	
Video Cassette Recorder....1	2	3	4	5	6	7	
Beds.....1	2	3	4	5	6	7	
Sofas.....1	2	3	4	5	6	7	
Beer.....1	2	3	4	5	6	7	
Houses.....1	2	3	4	5	6	7	
Watches.....1	2	3	4	5	6	7	
Personal Computers.....1	2	3	4	5	6	7	
35 mm SL Reflex Cameras....1	2	3	4	5	6	7	
Typewriters.....1	2	3	4	5	6	7	
Deodorant/Antiperspirant...1	2	3	4	5	6	7	
Clothes Dryers.....1	2	3	4	5	6	7	
Calculators.....1	2	3	4	5	6	7	
Vacuum Cleaners.....1	2	3	4	5	6	7	

3. Please indicate how frequently you purchase the following products by circling the appropriate number: 1 denotes very infrequently and 7 denotes very frequently. Circle 0 if you have never purchased the product.

<u>Product</u>	<u>very infrequently</u>					<u>very frequently</u>	
Bread.....0	1	2	3	4	5	6	7
Radios.....0	1	2	3	4	5	6	7
Automobiles.....0	1	2	3	4	5	6	7
Bicycles.....0	1	2	3	4	5	6	7
Stereo Sound Systems.....0	1	2	3	4	5	6	7
Blankets.....0	1	2	3	4	5	6	7
Blow Dryers.....0	1	2	3	4	5	6	7
Video Cameras.....0	1	2	3	4	5	6	7
Carpeting.....0	1	2	3	4	5	6	7
Luggage.....0	1	2	3	4	5	6	7
Colas.....0	1	2	3	4	5	6	7
Washing Machines.....0	1	2	3	4	5	6	7
Tires.....0	1	2	3	4	5	6	7
Bath Soap.....0	1	2	3	4	5	6	7
Telephones.....0	1	2	3	4	5	6	7
Refrigerators.....0	1	2	3	4	5	6	7
Shoes.....0	1	2	3	4	5	6	7
TV Sets.....0	1	2	3	4	5	6	7
Sweaters.....0	1	2	3	4	5	6	7
Vitamins.....0	1	2	3	4	5	6	7
Video Cassette Recorder..0	1	2	3	4	5	6	7
Beds.....0	1	2	3	4	5	6	7
Sofas.....0	1	2	3	4	5	6	7
Beer.....0	1	2	3	4	5	6	7
Houses.....0	1	2	3	4	5	6	7
Watches.....0	1	2	3	4	5	6	7
Personal Computers.....0	1	2	3	4	5	6	7
35 mm SL Reflex Cameras..0	1	2	3	4	5	6	7
Typewriters.....0	1	2	3	4	5	6	7
Deodorant/Antiperspirant.0	1	2	3	4	5	6	7
Clothes Dryers.....0	1	2	3	4	5	6	7
Calculators.....0	1	2	3	4	5	6	7
Vacuum Cleaners.....0	1	2	3	4	5	6	7

4. How risky would you say it is to buy an unfamiliar brand of the following products? In other words, how comfortable would you feel about your ability to make a good choice if you were not familiar with any of the brand-names? Please circle the appropriate number for each product category, where 1 denotes no risk at all and 7 denotes extreme risk.

<u>Product</u>	not at all risky					extremely risky	
Bread.....1	2	3	4	5	6	7	
Radios.....1	2	3	4	5	6	7	
Automobiles.....1	2	3	4	5	6	7	
Bicycles.....1	2	3	4	5	6	7	
Stereo Sound Systems.....1	2	3	4	5	6	7	
Blankets.....1	2	3	4	5	6	7	
Blow Dryers.....1	2	3	4	5	6	7	
Video Cameras.....1	2	3	4	5	6	7	
Carpeting.....1	2	3	4	5	6	7	
Luggage.....1	2	3	4	5	6	7	
Colas.....1	2	3	4	5	6	7	
Washing Machines.....1	2	3	4	5	6	7	
Tires.....1	2	3	4	5	6	7	
Bath Soap.....1	2	3	4	5	6	7	
Telephones.....1	2	3	4	5	6	7	
Refrigerators.....1	2	3	4	5	6	7	
Shoes.....1	2	3	4	5	6	7	
TV Sets.....1	2	3	4	5	6	7	
Sweaters.....1	2	3	4	5	6	7	
Vitamins.....1	2	3	4	5	6	7	
Video Cassette Recorder....1	2	3	4	5	6	7	
Beds.....1	2	3	4	5	6	7	
Sofas.....1	2	3	4	5	6	7	
Beer.....1	2	3	4	5	6	7	
Houses.....1	2	3	4	5	6	7	
Watches.....1	2	3	4	5	6	7	
Personal Computers.....1	2	3	4	5	6	7	
35 mm SL Reflex Cameras....1	2	3	4	5	6	7	
Typewriters.....1	2	3	4	5	6	7	
Deodorant/Antiperspirant...1	2	3	4	5	6	7	
Clothes Dryers.....1	2	3	4	5	6	7	
Calculators.....1	2	3	4	5	6	7	
Vacuum Cleaners.....1	2	3	4	5	6	7	

APPENDIX 3.4

RATINGS ON TWELVE PRODUCT CATEGORIES

Product Categories	Perceived non-price differences		Perceived Risk		Purchase Frequency		Familiarity	
	mean	st. dev.	mean	st. dev.	mean	st. dev.	mean	st. dev.
Automobiles								
self	5.7	1.4	6.4	0.7	2.6	1.3	4.9	1.2
judge	6.7	0.5	7.0	0.0	1.9	1.4		
Stereo Sound Systems								
self	5.4	1.1	5.6	1.0	1.7	0.9	3.3	1.6
judge	5.3	1.2	5.4	0.7	1.6	0.7		
Video Cameras								
self	4.6	0.9	5.7	0.7	0.6	0.7	2.7	1.4
judge	5.8	0.7	5.6	0.5	1.3	0.5		
Carpeting								
self	5.4	1.0	5.9	1.2	2.1	2.4	4.1	1.7
judge	4.8	1.2	5.3	0.7	2.0	0.9		
Tires								
self	4.7	1.0	5.6	1.1	3.2	1.8	4.1	1.4
judge	4.6	1.5	5.1	1.1	2.8	1.4		
Video Cassette Recorders								
self	5.0	0.9	5.0	1.5	1.7	1.3	3.8	1.8
judge	4.9	1.5	5.4	0.7	1.6	0.7		
Houses								
self	6.1	1.4	6.8	0.4	0.9	0.8	4.2	2.0
judge	6.8	0.7	7.0	0.0	1.3	0.5		
35 mm. SLR Cameras								
self	5.2	0.8	4.8	0.7	1.2	1.1	3.6	1.7
judge	5.3	0.9	5.3	1.3	1.6	0.5		
TV Sets								
self	5.3	1.0	5.7	0.7	3.1	1.5	4.9	0.8
judge	5.4	0.5	5.1	0.8	2.0	0.7		
Watches								
self	4.7	0.7	3.9	1.4	3.0	0.9	4.4	0.7
judge	5.7	0.9	4.3	1.0	3.2	1.1		
Clothes Dryers								
self	4.0	0.9	4.7	1.3	1.4	1.3	3.8	1.7
judge	4.3	0.9	4.5	1.2	1.7	0.7		
Calculators								
self	3.3	1.3	4.0	1.3	3.3	2.1	4.1	1.5
judge	4.2	1.1	3.6	1.1	2.8	0.8		

APPENDIX 3.5

DECISION MATRIX

Criterion	Product Category			
	VCR	Watch	Video Camera	Clothes Dryer
Perceived Risk Score (16 to 112)	70	74	74	74
Involvement Score (20 to 140)	109	121	97	102
Price Range	\$150-\$800	\$15-\$300	\$700+	\$250-\$750
Category Similarity	same with video cam.	different	same with VCR	different
Ease of matching the number of attributes	OK	too few "real" attributes	OK	OK
Performance with scales	OK	OK	OK	OK
Perceived non-price differences (1 to 7)	4.9	5.2	5.2	4.2
Familiarity	3.8	4.4	2.7	3.8

APPENDIX 3.6

ORIGINAL PERCEIVED RISK SCALE ITEMS

Please indicate your answers to the following questions by circling the appropriate number on the scale immediately to the right of the question.

- | | |
|--|---|
| 1. How certain are you that any brand name of clothes dryers will work satisfactorily? | very
uncertain
1 2 3 4 5 6 7
very
certain |
| 2. How confident would you say you are about judging the quality of clothes dryers? | not at all
confident
1 2 3 4 5 6 7
very
confident |
| 3. How confident are you that the purchase of a clothes dryer is a good investment? | not at all
confident
1 2 3 4 5 6 7
very
confident |
| 4. Can almost any shopper predict what the bad results will be if a clothes dryer fails? | very
unlikely
1 2 3 4 5 6 7
very
likely |
| 5. What are the chances that you stand to lose money if you buy an unfamiliar brand of clothes dryer (either because it will not work at all, or because it costs more than it should to keep it in good shape)? | low
chance
1 2 3 4 5 6 7
high
chance |
| 6. What is the likelihood that there will be something wrong with an unfamiliar brand of clothes dryer or that it will not work properly? | very
unlikely
1 2 3 4 5 6 7
very
likely |
| 7. What are the chances that an unfamiliar brand of clothes dryer may not be safe; i.e., may be (or become) harmful or injurious to you? | low
chance
1 2 3 4 5 6 7
high
chance |
| 8. What are the chances that an unfamiliar brand of clothes dryer will not fit in well with your self-image or self-concept (i.e. the way you think about yourself)? | low
chance
1 2 3 4 5 6 7
high
chance |
| 9. What are the chances that an unfamiliar brand of clothes dryer will affect the way others think of you? | low
chance
1 2 3 4 5 6 7
high
chance |
| 10. We all know that not all products work as well as others; compared to other products, how much danger of unwanted consequences is there in trying a brand of clothes dryer that you have never used before? | low
danger
1 2 3 4 5 6 7
high
danger |
| 11. Buying a product that does not give you bad results may be more important for some products than for others. How important would you say it is for a clothes dryer not to be unsatisfactory? | not at all
important
1 2 3 4 5 6 7
very
important |

- | | | |
|---|--|----------------------------|
| 12. How important would you say is the investment you are making to buy a clothes dryer? | not at all
important
1 2 3 4 5 6 7 | very
important
6 7 |
| 13. How annoyed would the typical shopper be if a clothes dryer failed to perform as expected? | not at all
annoyed
1 2 3 4 5 6 7 | very
annoyed
6 7 |
| 14. How undesirable would it be for you if you lost money because the brand of clothes dryer you bought did not perform as expected? | not at all
undesirable
1 2 3 4 5 6 7 | very
undesirable
6 7 |
| 15. How important is it that the clothes dryer you purchase works properly? | not at all
important
1 2 3 4 5 6 7 | very
important
6 7 |
| 16. How important is it that the clothes dryer you purchase does not harm or injure you? | not at all
important
1 2 3 4 5 6 7 | very
important
6 7 |
| 17. How important is it that the clothes dryer you purchase fits in well with your self-image or self-concept? | not at all
important
1 2 3 4 5 6 7 | very
important
6 7 |
| 18. How important is it that the clothes dryer you purchase affects the way others think of you? | not at all
important
1 2 3 4 5 6 7 | very
important
6 7 |
| 19. On the whole, considering all sorts of factors combined, about how risky would you say it is to buy an unfamiliar brand of clothes dryer? | not at all
risky
1 2 3 4 5 6 7 | very
risky
6 7 |
| 20. Given the potential expense, how much risk do you believe would be involved with purchasing a brand of clothes dryer? | none
1 2 3 4 5 6 7 | very much
6 7 |

APPENDIX 3.7

SIXTEEN ITEM PERCEIVED RISK SCALE

SCENARIO: THIS IS THE SITUATION WE WOULD LIKE YOU TO IMAGINE

Imagine that you have decided to buy a clothes dryer.
You would like to spend somewhere in the neighborhood of
\$700 for this clothes dryer.

Please answer the following questions with the above situation in mind. Indicate your answer by circling the appropriate number on the scale immediately to the right of the question.

- | | | |
|--|--------------------------------|-----------------------|
| 1. What are the chances that you stand to lose money if you buy an unfamiliar brand of clothes dryer (either because it will not work at all, or because it costs more than it should to keep it in good shape)? | low
chance
1 2 3 4 5 6 7 | high
chance
6 7 |
| 2. What is the likelihood that there will be something wrong with an unfamiliar brand of clothes dryer or that it will not work properly? | unlikely
1 2 3 4 5 6 7 | likely
6 7 |
| 3. What are the chances that an unfamiliar brand of clothes dryer may not be safe; i.e., may be (or become) harmful or injurious to you? | low
chance
1 2 3 4 5 6 7 | high
chance
6 7 |
| 4. What are the chances that an unfamiliar brand of clothes dryer will not fit in well with your self-image or self-concept (i.e. the way you think about yourself)? | low
chance
1 2 3 4 5 6 7 | high
chance
6 7 |
| 5. What are the chances that an unfamiliar brand of clothes dryer will affect the way others think of you? | low
chance
1 2 3 4 5 6 7 | high
chance
6 7 |
| 6. We all know that not all products work as well as others; compared to other products, how much danger of unwanted consequences is there in trying a brand of clothes dryer that you have never used before? | low
danger
1 2 3 4 5 6 7 | high
danger
6 7 |
| 7. Buying a product that does not give you bad results may be more important for some products than for others. How important would you say it is for a clothes dryer to be satisfactory? | unimportant
1 2 3 4 5 6 7 | important
6 7 |
| 8. How important is the amount of money you are paying to buy this clothes dryer? | unimportant
1 2 3 4 5 6 7 | important
6 7 |

CONTINUED ON NEXT PAGE

RECALL THAT THE SITUATION WAS:

Imagine that you have decided to buy a clothes dryer.
You would like to spend somewhere in the neighborhood of
\$700 for this clothes dryer.

(QUESTIONS CONTINUED)

- | | | |
|--|--|----------------------------|
| 9. How undesirable would it be for you if you lost money because the brand of clothes dryer you bought did not perform as expected? | not at all
undesirable
1 2 3 4 5 6 7 | very
undesirable
6 7 |
| 10. How important is it that the clothes dryer you purchase works properly? | unimportant
1 2 3 4 5 6 7 | important
6 7 |
| 11. How important is it that the clothes dryer you purchase does not harm or injure you? | unimportant
1 2 3 4 5 6 7 | important
6 7 |
| 12. How important is it that the clothes dryer you purchase fits in well with your self-image or self-concept? | unimportant
1 2 3 4 5 6 7 | important
6 7 |
| 13. How important is it that the clothes dryer you purchase affects the way others think of you? | unimportant
1 2 3 4 5 6 7 | important
6 7 |
| 14. On the whole, considering all sorts of factors combined, about how risky would you say it is to buy an unfamiliar brand clothes dryer? | not at all
risky
1 2 3 4 5 6 7 | very
risky
6 7 |
| 15. Given the potential expense, how much risk do you believe would be involved with purchasing a brand of clothes dryer? | very little
1 2 3 4 5 6 7 | very much
6 7 |
| 16. How annoyed would you be if the clothes dryer you bought failed to perform as expected? | not at all
annoyed
1 2 3 4 5 6 7 | very
annoyed
6 7 |

APPENDIX 3.8

PRODUCT KNOWLEDGE SCALE - VCR

Please answer the following questions to the best of your knowledge.

1. In the Lansing area, please name all the stores that you can think of that carry VCR's. _____

2. Have you ever purchased a VCR?
☐ Yes..... How many? _____
☐ No
3. Do you presently own a VCR?
☐ Yes
☐ No
4. Please list all the brands of VCR's that you know of. _____

5. Please list, in their order of importance, the features you think are important when evaluating VCR's.
1. _____ 4. _____ 7. _____
2. _____ 5. _____ 8. _____
3. _____ 6. _____ 9. _____
6. Have you ever read informational material (other than promotional material) such as Consumer Reports or a newspaper article about VCR's?
☐ Yes
☐ No
7. Have you ever received information about VCR's from someone you would consider an expert (other than a salesperson)?
☐ Yes
☐ No
8. Are higher priced VCR's better than lower priced ones with the same features?
☐ Yes
☐ Sometimes
☐ No
☐ Don't know

CONTINUED ON NEXT PAGE

(QUESTIONS CONTINUED)

9. If a friend requested your advice for purchasing a VCR, how confident would you feel in advising this person?

Not at all confident					Very confident	
1	2	3	4	5	6	7

10. How familiar would you consider yourself with VCR's?

Not at all familiar					Very familiar	
1	2	3	4	5	6	7

11. Which of the following VCR technologies is more common?

- ☐ Beta.
- ☐ VHS.
- ☐ Super-VHS.
- ☐ Beta and VHS are equally common.
- ☐ Don't know.

12. Which of the following features is not associated with VCR's?

- ☐ Frame advance.
- ☐ Code modifier.
- ☐ Auto index.
- ☐ Fine edit.
- ☐ Don't know.

13. Which of the following is not a tuner type used in VCR's?

- ☐ Quartz synthesized.
- ☐ Electronic varactor.
- ☐ Voltage synthesized.
- ☐ Transistor-logic monitor.
- ☐ Don't know.

APPENDIX 3.9

PRODUCT KNOWLEDGE SCALE - DRYER

Please answer the following questions to the best of your knowledge.

1. In the Lansing area, please name all the stores that you can think of that carry clothes dryers. _____

2. Have you ever purchased a clothes dryer?
☐ Yes..... How many? _____
☐ No
3. Do you presently own a clothes dryer?
☐ Yes
☐ No
4. Please list all the brands of clothes dryers that you know of. _____

5. Please list, in their order of importance, the features you think are important when evaluating clothes dryers.

1. _____	4. _____	7. _____
2. _____	5. _____	8. _____
3. _____	6. _____	9. _____
6. Have you ever read informational material (other than promotional material) such as Consumer Reports or a newspaper article about clothes dryers?
☐ Yes
☐ No
7. Have you ever received information about clothes dryers from someone you would consider an expert (other than a salesperson)?
☐ Yes
☐ No
8. Are higher priced clothes dryers better than lower priced ones with the same features?
☐ Yes
☐ Sometimes
☐ No
☐ Don't know

CONTINUED ON NEXT PAGE

(QUESTIONS CONTINUED)

9. If a friend requested your advice for purchasing a clothes dryer how confident would you feel in advising this person?

Not at all confident						Very confident
1	2	3	4	5	6	7

10. How familiar would you consider yourself with clothes dryers?

Not at all familiar						Very familiar
1	2	3	4	5	6	7

11. Which type of clothes dryer costs more to purchase?

- ☐ Gas.
- ☐ Electric.
- ☐ No difference
- ☐ Don't know.

12. Which type of clothes dryer costs more to operate?

- ☐ Gas.
- ☐ Electric.
- ☐ No difference
- ☐ Don't know.

13. Which of the following is a feature not associated with clothes dryers?

- ☐ Drum light
- ☐ Moisture sensor
- ☐ Jog-shuttle
- ☐ Microwave technology
- ☐ Don't know.

APPENDIX 3.10

ROLE OF PRICE MEASURE I

Below are a number of ways that you could have arrived at the your choice in this exercise. Please read all of them carefully and indicate the category that best describes the way you made your choice by circling the appropriate number. If you think that none of these categories adequately describes the way you made your choice, then check "other" and describe the way you made your choice in the space provided. Remember that we are asking you how you made your decision.

IMPORTANT: Please make sure that you do not circle more than one number.

1. I bought the least expensive brand available without even considering the features of the alternatives because the prices were too high.
2. I bought the least expensive brand available because after careful consideration I decided that the differences in the brands do not justify the differences in the prices.
3. I bought the brand with the price which matched what I was prepared to pay before I saw the alternatives.
4. First, I eliminated some of the brands because they were too expensive to even consider. Then, for the remaining brands I tried to evaluate which brand offered the best product for the best price.
5. For all the available brands, I tried to evaluate which brand offered the best product for the best price.
6. I bought the most expensive brand available because after careful evaluation I decided that it offered the best product for the best price.
7. I bought the most expensive brand available because I believe that higher priced VCR's offer better quality.
8. I bought the brand which I thought was the best without considering its price.
9. Other (please specify) _____

APPENDIX 3.11

ROLE OF PRICE MEASURE II

We are interested in finding out how you used the price of the VCR in your decision. Below are a number of ways that you could have used price to arrive at the choice that you reported in this exercise. Please read all of them carefully and indicate the one category that best describes the way you used price in your decision. Indicate your answer by circling the appropriate number. If you think that none of these categories adequately describes the way you used price, then circle "other" and describe your way in the space provided.

IMPORTANT: Please make sure that you do not circle more than one number.

1. Price was not a factor in my decision.
2. I used price to guess which brand had the highest quality.
3. I weighed the differences in price with the additional benefits of the more expensive brands to find the best offer.
4. I bought the least expensive brand without considering the additional benefits of the more expensive brands.
5. First, I eliminated some of the brands because they were too expensive. Then, for the remaining brands, I weighed the differences in price with the additional benefits of the more expensive brands to determine the best buy.
6. Other (please specify) _____

APPENDIX 3.12

PRICE & REPAIR RATE INFORMATION FOR THE TREATMENT CONDITIONS

	High Price Difference (15%)	Low Price Difference (3.3%)
High Price (P = \$700)	P = \$547.50, RR = 39% P = \$652.50, RR = 27% P = \$757.50, RR = 16% P = \$862.50, RR = 4%	P = \$665.00, RR = 13% P = \$688.25, RR = 10% P = \$712.50, RR = 7% P = \$735.00, RR = 4%
Medium Price (P = \$500)	P = \$387.50, RR = 39% P = \$462.50, RR = 27% P = \$537.50, RR = 16% P = \$612.50, RR = 4%	P = \$475.25, RR = 13% P = \$491.75, RR = 10% P = \$508.25, RR = 7% P = \$524.75, RR = 4%
Low Price (P = \$300)	P = \$232.50, RR = 39% P = \$277.50, RR = 27% P = \$322.50, RR = 16% P = \$367.50, RR = 4%	P = \$285.00, RR = 13% P = \$295.00, RR = 10% P = \$305.00, RR = 7% P = \$315.00, RR = 4%

RR: Repair Rates

P : Average Price

P : Price

APPENDIX 3.13

REPAIR RATE CALCULATIONS

$$\text{Model: } TC = (1 / (1 - p)) NC$$

Low Price-Difference Levels:

$$\text{Given: } p = .04 \quad @ \quad NC = \$315$$

$$TC = (1 / (1 - .04)) \times 315 = 328$$

$$\text{Given: } TC = 328$$

$$@ \quad NC = 305$$

$$p = 1 - (305 / 328) = 1 - .929 = \underline{.07}$$

$$@ \quad NC = 295$$

$$p = 1 - (295 / 328) = 1 - .899 = \underline{.10}$$

$$@ \quad NC = 285$$

$$p = 1 - (285 / 328) = 1 - .868 = \underline{.13}$$

High Price-Difference Levels:

$$\text{Given: } p = .04 \quad @ \quad NC = \$367.50$$

$$TC = (1 / (1 - .04)) \times 367.50 = 382.20$$

$$\text{Given: } TC = 382.20$$

$$@ \quad NC = 322.50$$

$$p = 1 - (322.50 / 382.20) = 1 - .843 = \underline{.16}$$

$$@ \quad NC = 277.50$$

$$p = 1 - (277.50 / 382.20) = 1 - .726 = \underline{.27}$$

$$@ \quad NC = 232.50$$

$$p = 1 - (232.50 / 382.20) = 1 - .608 = \underline{.31}$$

APPENDIX 3.14

HUMAN SUBJECTS MATERIAL

MICHIGAN STATE UNIVERSITY

UNIVERSITY COMMITTEE ON RESEARCH INVOLVING
HUMAN SUBJECTS (UCRIHS)
306 SERVICE MALL
(517) 353-0730

EAST LANSING • MICHIGAN • 48824-1111

April 6, 1989

IRB# 89-172

Dogan Eroglu
Dept. of Marketing
Eppley Center

Dear Mr. Eroglu:

RE: "AN INVESTIGATION OF THE ALLOCATIVE ROLE OF PRICE IN CHOICE
ACROSS ALTERNATIVES IRB# 89-172"

The above project is exempt from full UCRIHS review. The proposed research protocol has been reviewed by another committee member. The rights and welfare of human subjects appear to be protected and you have approval to conduct the research.

You are reminded that UCRIHS approval is valid for one calendar year. If you plan to continue this project beyond one year, please make provisions for obtaining appropriate UCRIHS approval one month prior to April 6, 1990.

Any changes in procedures involving human subjects must be reviewed by UCRIHS prior to initiation of the change. UCRIHS must also be notified promptly of any problems (unexpected side effects, complaints, etc.) involving human subjects during the course of the work.

Thank you for bringing this project to my attention. If I can be of any future help, please do not hesitate to let me know.

Sincerely,



John K. Hudzik, Ph.D.
Chair, UCRIHS

JKH/sar

cc: R.D. Wilson

MICHIGAN STATE UNIVERSITY

GRADUATE SCHOOL OF BUSINESS ADMINISTRATION
DEPARTMENT OF MARKETING AND
TRANSPORTATION ADMINISTRATION
315 EPPLEY CENTER
TELEPHONE (517) 353-6381

EAST LANSING • MICHIGAN • 48824-1121

March 28, 1989

TO: Dr. John K. Hudzik, Chair, UCRIHS, 206 Berkey Hall
FROM: Dr. R. Dale Wilson, Professor of Marketing *R. Dale Wilson*
RE: Application for Review of a Project Involving Human
Subjects for Dogan Eroglu

As the dissertation chairman for Dogan Eroglu, I have been working closely with him to design an experimental methodology to investigate the role of price in the consumer decision making process. His application for a review of the project is attached.

I have reviewed this application carefully and fully concur with the written description of the project contained in it. The application contains a complete and accurate representation of the project, and it has my support and approval.

I would appreciate your review and approval to proceed with this project. Thanks for your assistance in this matter.

Attachment

APPLICATION FOR REVIEW OF A PROJECT INVOLVING HUMAN SUBJECTS

Submit your proposal for UCRIHS review to:

Dr. John K. Hudzik, Chair
UCRIHS
Michigan State University
206 Berkey Hall
East Lansing, MI 48824-1111

If you have questions, or wish to check the status of your proposal, call: (517) 353-9738

DIRECTIONS: COMPLETE QUESTIONS 1 - 11: Attach additional material as requested.

1. RESPONSIBLE PROJECT INVESTIGATOR:
(faculty or staff supervisor)

Dr. R. Dale Wilson

NAME OF INVESTIGATOR:
(if different)

Dogan Eroglu

2. CAMPUS ADDRESS:

Dept. of Marketing, Eppley Center

PHONE #: 353-6381

CAMPUS ADDRESS: (or address where
approval letter is to be sent)

Dept. of Marketing, Eppley Center

PHONE #: 353-6381

3. TITLE OF PROPOSAL:

An Investigation of the Allocative Role of Price in Choice Across Alternatives

4. A. PROPOSED FUNDING AGENCY (if any) None

B. IS THIS AN FDA PROPOSAL [] YES [x] NO

C. MSU ORD# IF APPLICABLE --

D. DATE ON WHICH YOU PLAN TO BEGIN DATA COLLECTION April 10, 1989

5. EXEMPT/EXPEDITED. If applying for Exempt or Expedited status, indicate the category. SEE INSTRUCTIONS - ITEM 1 (ie. 1-A, 2-D, etc.).

Category: 1-c

For
Office
Use

Subcommittee: _____
Agenda: _____
Comments: _____

Comments to PI: _____
Comments to REV: _____

6. **ABSTRACT.** Summarize the research (its purpose and general design) to be conducted. This can be identical or similar to the summary required when submitting to the NIH (200 words or less). Briefly outline, in particular, what will be done to research subjects.

The study attempts to contribute to understanding the role of price in individuals' choices across alternative brands. The effects of price level, price differences and product category on the role of price will be investigated. The empirical work involves first, pre-testing of scales designed to measure the levels of involvement and perceived risk certain product categories elicit in individuals. Second a questionnaire will be administered to collect data from a different sample. Subjects will be asked to imagine themselves making a brand choice given a product category. A measure of perceived risk will be followed by presenting information on alternative brands and asking for the choice of the subjects. Questions concerning the role of price, quality and value perceptions, involvement, realism of the task, and demographic variables will be asked. Subjects will be asked to respond at their own pace without imposing any time pressure. The product categories, to be determined, will not be legally or otherwise restricted for consumption or purchase to any group of individuals. Only written information about the products will be presented without the physical presence of the products. Actual brand names will not be used and alternatives will be identified by letters.

7. **SUBJECT POPULATION.** Will any of the following be subjects:

	Yes	No		Yes	No
Minors	☐	☒	Students	☒	☐
Pregnant Women	☒	☐	Low Income Persons	☒	☐
Women of Child-bearing age	☒	☐	Minorities	☒	☐
Institutionalized Persons	☐	☒	Incompetent Persons	☐	☒

(or diminished capacity)

"Yes" indicates that screening on these criteria will not occur, inclusion is possible

7a. Number of subjects (including controls)? Approximately 500

7b. Are you associated with the subjects (e.g., your students, employees, or patients.)

☐ yes ☒ no If yes, explain nature of the association.

7c. How will subjects be contacted and selected?

For the scale development phase instructors at MSU will be contacted for permission to contact their students during class hour. In the data collection phase organizations--professional, religious, etc.--will be contacted to recruit adult members who are willing to participate in exchange for compensation to the organization.

7d. Will research subjects be compensated? ☒ Yes ☐ No

If yes, all information concerning payment, including the amount and schedule of payment must be set forth in the informed consent. Upon completion of the survey by all participants, five dollars (US) per participant will be paid to the cooperating organization.

7e. Will you be advertising for research participants? ☐ Yes ☒ No

If yes attach a copy of the advertisement you will use SEE INSTRUCTIONS - ITEM 2

8. **ANONYMITY/CONFIDENTIALITY.** Describe procedures and safeguards for insuring confidentiality or anonymity. SEE INSTRUCTIONS - ITEM 3

Absolute anonymity will be maintained since, 1) unnumbered questionnaires will be administered to individuals in groups; 2) individuals will not be asked to identify themselves on the questionnaire by name, student or security number, or by any other means; 3) checks for compensation will be written to the order of the participating organization and not the individuals. Demographic information such as age, gender, occupation and income will be requested to determine if these variables are related to the role of price in choice. However, identification of the participating individuals from such data will be impossible. Confidentiality will be maintained by 1) storing the survey instruments in a private place; 2) keeping the raw working data file in a computer file. Only the investigators will have access to these files.

9. **RISK/BENEFIT RATIO.** Analyze the risk/benefit ratio. SEE INSTRUCTIONS - ITEM 4. Completely answer items A, B, and C listed in the instructions. ALSO SEE Item 6 in the instructions if your research involves minors or those with diminished capacity.
- A. The proposed survey involves no physical, psychological, social, legal, economic or other risks to the subjects. Product information will be presented in written form and the products will not be physically present, thus eliminating any possible damage that may be caused due to contact with the product. Given the anonymity of the responses and the fact that any overt behavior is not requested, social risk is also unlikely. The choice process is one which the respondent is likely to have experienced--at least, in a similar context--numerous times before and no time pressure is imposed. Given these and the subjects' freedom to discontinue the survey with no recrimination, no psychological risk is expected. The subjects' consent for participation is by no means legally binding for any purpose. Their choice stated on the questionnaire is only hypothetical and involves no expenditure on the part of the subject.
 - B. There is no risk involved in the procedure. Subjects will only incur time costs, which is not expected to be longer than 30 minutes for the majority of respondents.
 - C. The benefit for the subjects in the scale development phase will be a discussion of the research objectives upon completion of the survey. The benefits for the subjects in the data collection phase will be the \$5 compensation paid to the sponsoring organization on their behalf. There are also expected academic benefits of the research leading to a better understanding of the role of price in individuals' choice.

10. **CONSENT PROCEDURES.** Describe consent procedures to be followed, including how and where informed consent will be obtained. SEE INSTRUCTIONS - ITEM 8 on what needs to be included in your consent form. Include a copy of your consent form with your proposal. ALSO SEE item 6 in the instructions if your research involves minors or those with diminished capacity.

The research does not involve minors or those with diminished capacity. The attached consent form will be incorporated as the first page of the questionnaire distributed to the subjects. The subjects will be instructed to "carefully read" the form before they proceed. At the bottom of the first page the statement that completing and returning the questionnaire indicates voluntary participation, will be placed in capital letters. A signed consent form will not be requested since it would jeopardize the absolute anonymity promised to the subjects.

Two different consent forms--one for the scale development subjects and one for the survey respondents-- will be used. The only difference between the two is the explanation of the objectives of the surveys. Both forms are attached.

11. **CHECKLIST.** Check off that you have included each of these items with your proposal. If not applicable, state n/a.

☐ Provide six (6) copies of all information unless applying for exempt or expedited review. Provide two (2) copies if applying for exempt or expedited. Include all questionnaires, surveys, forms, tests, etc. to be used.

☒ Proposed graduate and undergraduate student research projects submitted to UCRIHS for review should be accompanied by a signed statement from the student's major professor stating that he/she has reviewed and approves the proposed project.

☒ Provide one complete copy of the full research proposal. Graduate students should furnish one copy of the "Methods" chapter of their thesis/dissertation (if available) in lieu of a research proposal.

☒ Questions 1 - 10 have been filled out completely

☒ Provide the consent form (or instruction sheet, explanatory letter, or the script for oral presentation if signed consent is not to be obtained--See item 8 in the instructions)

N/A: Advertisement included if applicable

YOUR PROPOSAL WILL BE ASSIGNED A UCRIHS PROPOSAL NUMBER. REFER TO THIS NUMBER AND THE TITLE OF YOUR PROPOSAL ON ANY CORRESPONDENCE OR INQUIRIES.

FORM I

PLEASE READ CAREFULLY BEFORE YOU PROCEED!!

RESPONDENT CONSENT FORM

1. The purpose of this survey is to understand your feelings and opinions about a number of product categories. You will be first given a product category and then asked to answer a number of questions about that category. The same process will be repeated for four different product categories. You can work at your own pace and probably will not need more than 30 minutes.
2. Participation in this research involves no physical, social, legal, psychological, or economic risks.
3. You are free to request further explanation about the instructions, the purpose of the survey, or the survey form at any time.
4. Your participation is to be voluntary, and you are free to refuse to participate in the total or parts of the procedure.
5. You are free to discontinue the survey at any time without recrimination.
6. Responses will be treated in confidence and anonymity of subjects will be guaranteed in any report of the research findings.

BY COMPLETING AND RETURNING THIS QUESTIONNAIRE YOU INDICATE THAT:

- A) YOU HAVE READ AND UNDERSTOOD THE ABOVE PROVISIONS AND;
- B) YOU VOLUNTARILY AGREE TO PARTICIPATE IN THE RESEARCH EXPLAINED ABOVE.

FORM 11

PLEASE READ CAREFULLY BEFORE YOU PROCEED!!

RESPONDENT CONSENT FORM

1. The purpose of this survey is to gain a better understanding of how individuals make choices when faced with alternatives. Your task will be to imagine that you are faced with a particular choice situation and to make a choice given the alternatives. Then you will be asked to answer a number of questions ranging from your preference to some demographic information. You can complete the survey at your own pace, however, you will probably not need more than 30 minutes.
2. Participation in this research involves no physical, social, legal, psychological, or economic risks.
3. You are free to request further explanation about the instructions, the purpose of the survey, or the survey form at any time.
4. Your participation is to be voluntary, and you are free to refuse to participate in the total or parts of the procedure.
5. You are free to discontinue the survey at any time without recrimination.
6. Responses will be treated in confidence and anonymity of subjects will be guaranteed in any report of the research findings.

BY COMPLETING AND RETURNING THIS QUESTIONNAIRE YOU INDICATE THAT:

- A) YOU HAVE READ AND UNDERSTOOD THE ABOVE PROVISIONS AND;
- B) YOU VOLUNTARILY AGREE TO PARTICIPATE IN THE RESEARCH EXPLAINED ABOVE.

APPENDIX 3.15

SURVEY INSTRUMENT

PLEASE READ CAREFULLY BEFORE YOU PROCEED!!

RESPONDENT CONSENT FORM

1. The purpose of this survey is to gain a better understanding of how individuals make choices when faced with alternatives. Your task will be to imagine that you are faced with a particular choice situation and to make a choice given the alternatives. Then you will be asked to answer a number of questions ranging from your preference to some demographic information. You can complete the survey at your own pace, however, you will probably not need more than 30 minutes.
2. Participation in this research involves no physical, social, legal, psychological, or economic risks.
3. You are free to request further explanation about the instructions, the purpose of the survey, or the survey form at any time.
4. Your participation is to be voluntary, and you are free to refuse to participate in the total or parts of the procedure.
5. You are free to discontinue the survey at any time without recrimination.
6. Responses will be treated in confidence and anonymity of subjects will be guaranteed in any report of the research findings.

BY COMPLETING AND RETURNING THIS QUESTIONNAIRE YOU INDICATE THAT:

- A) YOU HAVE READ AND UNDERSTOOD THE ABOVE PROVISIONS AND;
- B) YOU VOLUNTARILY AGREE TO PARTICIPATE IN THE RESEARCH EXPLAINED ABOVE.

We sincerely appreciate your help in conducting this study. We hope this exercise will be enjoyable for all of you.

This study is not conducted for any retailer, manufacturer, or other commercial enterprise.

In the following pages, we will introduce to you a specific situation and ask you to assume that you are in the described situation as you answer a series of questions.

Please take care in answering each question. On the other hand, do not worry or puzzle over an individual question. Work at a pace which is most comfortable for you. You will be able to work at a fairly high speed through most of the questions.

Try to answer all the questions. Do not skip any.

PLEASE READ ALL INSTRUCTIONS CAREFULLY!

INSTRUCTIONS FOR ANSWERING THE QUESTIONS

BELOW ARE DIFFERENT TYPES OF QUESTIONS YOU WILL SEE IN THIS QUESTIONNAIRE AND INSTRUCTIONS ON HOW TO ANSWER THEM. PLEASE READ THEM CAREFULLY.

Sometimes you will be asked to answer a question on a seven point scale which appears on the right side of the question. You will indicate your answer by circling the number which best describes your answer to the question.

EXAMPLE: If you feel that the Tigers have a relatively low chance of winning the World Series (like around 25%), you should answer the following question as shown:

What are the chances that the Detroit Tigers will win the world series?	low chance	high chance
	1 ② 3 4 5 6 7	

You would have circled 6 if you thought the chance was relatively high (around 75%).

EXAMPLE: If you feel that it is very important for you that the TIGERS win the World Series, you should answer the following question as shown:

How important is it for you that the Detroit Tigers win the World Series?	unimportant	important
	1 2 3 4 5 6 ⑦	

You would have circled 4 if you felt that it was somewhat important.

Sometimes you will be asked to judge a product against a set of descriptive scales according to how YOU perceive the product.

EXAMPLE: If you feel that a product is very trivial, you should place a check mark as follows:

trivial : X : _ : _ : _ : _ : _ : fundamental

If you feel that it is only slightly fundamental, you should place a check mark as follows:

trivial : _ : _ : _ : X : _ : _ : fundamental

Sometimes you will be asked to fill in some information.

EXAMPLE:

Please list three of your most favorite movies.

1. CASABLANCA 2. RAINMAN 3. E.T.

Sometimes you will be asked to indicate your answer by checking a box.

EXAMPLE:

Do you own a refrigerator?

☒ Yes
☐ No

GENERAL INSTRUCTIONS

In the first portion of this questionnaire you are asked to play a role. First, you will be given a situation which you have possibly encountered at least a few times before. Then you will be asked to assume that you are in exactly the same situation described in the scenario. Follow the instructions and answer as if you are actually living the situation now. Remember, we would like you to put yourself in the situation, with your preferences, dislikes, financial considerations, social concerns, etc.

Please make sure that you clearly understand the role you are asked to play and assume that you are in that situation when answering the questions.

Now, we would like you to go through the following brief example which requires you to play the role of a consumer in a specific situation. Imagine yourself in the following situation and proceed as instructed.

You have just decided to buy a certain watch. Store "X" sells it for \$114.99. As you are reading the newspaper, you see an advertisement stating that store "Y" has exactly the same watch on sale for \$99.99. The sale will continue for the next five days. However, you would have to drive 20 to 25 minutes (about 15 miles) to get to store "Y". On the other hand, store "X" which sells it for \$114.99 is less than five minutes away by car.

Assuming you are in the above situation, please make a decision. From which store are you going to buy the watch? Indicate your answer by checking the appropriate box below.

Some people will answer store "X" some will answer store "Y". There is no right or wrong answer, we are interested in your opinion.

- ☐ Store "X"
- ☐ Store "Y"

This is the end of the example.

NOW TURN THE PAGE AND READ THE SCENARIO WE WOULD LIKE YOU TO IMAGINE

SCENARIO: THIS IS THE SITUATION WE WOULD LIKE YOU TO IMAGINE

Imagine that you have decided to buy a video cassette recorder (VCR). You would like to spend somewhere in the neighborhood of \$700 for this VCR.

Please answer the following questions with the above situation in mind. Indicate your answer by circling the appropriate number on the scale immediately to the right of the question.

- | | | |
|--|--------------------------------|-----------------------|
| 1. What are the chances that you stand to lose money if you buy an unfamiliar brand of VCR (either because it will not work at all, or because it costs more than it should to keep it in good shape)? | low
chance
1 2 3 4 5 6 7 | high
chance
6 7 |
| 2. What is the likelihood that there will be something wrong with an unfamiliar brand of VCR or that it will not work properly? | unlikely
1 2 3 4 5 6 7 | likely
6 7 |
| 3. What are the chances that an unfamiliar brand of VCR may not be safe; i.e., may be (or become) harmful or injurious to you? | low
chance
1 2 3 4 5 6 7 | high
chance
6 7 |
| 4. What are the chances that an unfamiliar brand of VCR will not fit in well with your self-image or self-concept (i.e. the way you think about yourself)? | low
chance
1 2 3 4 5 6 7 | high
chance
6 7 |
| 5. What are the chances that an unfamiliar brand of VCR will affect the way others think of you? | low
chance
1 2 3 4 5 6 7 | high
chance
6 7 |
| 6. We all know that not all products work as well as others; compared to other products, how much danger of unwanted consequences is there in trying a brand of VCR that you have never used before? | low
danger
1 2 3 4 5 6 7 | high
danger
6 7 |
| 7. Buying a product that does not give you bad results may be more important for some products than for others. How important would you say it is for a VCR to be satisfactory? | unimportant
1 2 3 4 5 6 7 | important
6 7 |
| 8. How important is the amount of money you are paying to buy this VCR? | unimportant
1 2 3 4 5 6 7 | important
6 7 |

CONTINUED ON NEXT PAGE

RECALL THAT THE SITUATION WAS:

Imagine that you have decided to buy a video cassette recorder (VCR). You would like to spend somewhere in the neighborhood of \$700 for this VCR.

(QUESTIONS CONTINUED)

- | | | |
|---|--|----------------------------|
| 9. How undesirable would it be for you if you lost money because the brand of VCR you bought did not perform as expected? | not at all
undesirable
1 2 3 4 5 6 7 | very
undesirable
6 7 |
| 10. How important is it that the VCR you purchase works properly? | unimportant
1 2 3 4 5 6 7 | important
6 7 |
| 11. How important is it that the VCR you purchase does not harm or injure you? | unimportant
1 2 3 4 5 6 7 | important
6 7 |
| 12. How important is it that the VCR you purchase fits in well with your self-image or self-concept? | unimportant
1 2 3 4 5 6 7 | important
6 7 |
| 13. How important is it that the VCR you purchase affects the way others think of you? | unimportant
1 2 3 4 5 6 7 | important
6 7 |
| 14. On the whole, considering all sorts of factors combined, about how risky would you say it is to buy an unfamiliar brand of VCR? | not at all
risky
1 2 3 4 5 6 7 | very
risky
6 7 |
| 15. Given the potential expense, how much risk do you believe would be involved with purchasing a brand of VCR? | very little
1 2 3 4 5 6 7 | very much
6 7 |
| 16. How annoyed would you be if the VCR you bought failed to perform as expected? | not at all
annoyed
1 2 3 4 5 6 7 | very
annoyed
6 7 |

SITUATION (continued)

Having previously decided on buying a VCR within the price range of \$700, now imagine that you have collected all the information you need to make a decision. All of this information is provided below. The alternative brands listed on the information sheet include all those available in the local stores. Although there are other brands available nationally, it would cost a lot of extra time and money for you to acquire them. Consequently, you have decided to choose among the alternatives listed on this page.

INSTRUCTIONS

Now you are going to make a choice between the available alternatives listed below. Take as much time as you wish to determine the brand you will purchase. The actual brand names are not given and each alternative is designated by a capital letter.

VCR BRAND INFORMATION**BRAND "A":**

4 heads, 8 programs / 1 year programming capability, 110 channels, cable ready, HQ picture-enhancer, on-screen programming, Hi-fi stereo. 13 of the 100 brand "A" VCRs sold needed repairs in the first 2 years.
Price.....\$665.00

BRAND "B":

4 heads, 8 programs / 1 year programming capability, 110 channels, cable ready, HQ picture-enhancer, on-screen programming, Hi-fi stereo. 10 of the 100 brand "B" VCRs sold needed repairs in the first 2 years.
Price.....\$688.25

BRAND "C":

4 heads, 8 programs / 1 year programming capability, 110 channels, cable ready, HQ picture-enhancer, on-screen programming, Hi-fi stereo. 7 of the 100 brand "C" VCRs sold needed repairs in the first 2 years.
Price.....\$712.50

BRAND "D":

4 heads, 8 programs / 1 year programming capability, 110 channels, cable ready, HQ picture-enhancer, on-screen programming, Hi-fi stereo. 4 of the 100 brand "D" VCRs sold needed repairs in the first 2 years.
Price.....\$735.00

Note: The above repair indexes provided for each of the brands were generated by a reliable independent organization.

• PLEASE CIRCLE YOUR CHOICE

A B C D

Below are a number of ways that you could have arrived at the your choice in this exercise. Please read all of them carefully and indicate the category that best describes the way you made your choice by circling the appropriate number. If you think that none of these categories adequately describes the way you made your choice, then check "other" and describe the way you made your choice in the space provided. Remember that we are asking you how you made your decision.

IMPORTANT: Please make sure that you do not circle more than one number.

1. I bought the least expensive brand available without even considering the features of the alternatives because the prices were too high.
2. I bought the least expensive brand available because after careful consideration I decided that the differences in the brands do not justify the differences in the prices.
3. I bought the brand with the price which matched what I was prepared to pay before I saw the alternatives.
4. First, I eliminated some of the brands because they were too expensive to even consider. Then, for the remaining brands I tried to evaluate which brand offered the best product for the best price.
5. For all the available brands, I tried to evaluate which brand offered the best product for the best price.
6. I bought the most expensive brand available because after careful evaluation I decided that it offered the best product for the best price.
7. I bought the most expensive brand available because I believe that higher priced VCR's offer better quality.
8. I bought the brand which I thought was the best without considering its price.
9. Other (please specify) _____

We are interested in finding out how you used the price of the VCR in your decision. Below are a number of ways that you could have used price to arrive at the choice that you reported in this exercise. Please read all of them carefully and indicate the one category that best describes the way you used price in your decision. Indicate your answer by circling the appropriate number. If you think that none of these categories adequately describes the way you used price, then circle "other" and describe your way in the space provided.

IMPORTANT: Please make sure that you do not circle more than one number.

1. Price was not a factor in my decision.
2. I used price to guess which brand had the highest quality.
3. I weighed the differences in price with the additional benefits of the more expensive brands to find the best offer.
4. I bought the least expensive brand without considering the additional benefits of the more expensive brands.
5. First, I eliminated some of the brands because they were too expensive. Then, for the remaining brands, I weighed the differences in price with the additional benefits of the more expensive brands to determine the best buy.
6. Other (please specify) _____

THIS IS THE END OF ROLE PLAYING.

NOW, WE WOULD LIKE YOU TO FORGET
THE "SITUATION" AND ANSWER THE
REMAINING QUESTIONS AS YOU
NORMALLY WOULD.

Please respond to the following statements based on whether you agree or disagree with them. Indicate your answer by circling the appropriate number.

IMPORTANT: Make sure to circle one number for each statement. Do not circle more than one number for a single statement.

	Strongly Disagree				Strongly Agree		
	1	2	3	4	5	6	7
This research study was confusing.							
I took the choice task seriously.							
I had trouble putting myself in the situation that was described.							
The situation that was described was realistic.							
The brand information was not easy to understand.							
The brand information was sufficient to make a reasonably good choice.							

The purchase task described in the situation is

1. much riskier than I normally encounter
2. slightly riskier than I normally encounter
3. about as risky as what I normally encounter
4. less risky than what I normally encounter
5. much less risky than what I normally encounter

The prices of the brands, in general, were

1. much higher than I would expect
2. slightly higher than I would expect
3. about the same as what I would expect
4. slightly lower than I would expect
5. much lower than I would expect

While making your choice in this exercise, how much did you imagine spending on this VCR? \$_____.

How committed were you to paying the amount you wrote on the line above?

Not At All Committed				Very Committed		
1	2	3	4	5	6	7

Please judge video cassette recorders against the following descriptive scales. Respond to each scale based on how YOU perceive VCR's in general. Recall the following example.

EXAMPLE: If you feel that VCR's are very trivial, put your check mark as follows:

trivial :X:__:__:__:__:__:__: fundamental

If you feel they are only slightly fundamental, put your check mark as follows:

trivial :__:__:__:__:X:__:__: fundamental

IMPORTANT: Be sure to put one check mark on all of the following 20 scales.

important	:__:__:__:__:__:__:	unimportant
of no concern to me	:__:__:__:__:__:__:	of concern to me
irrelevant	:__:__:__:__:__:__:	relevant
means a lot to me	:__:__:__:__:__:__:	means nothing to me
useless	:__:__:__:__:__:__:	useful
valuable	:__:__:__:__:__:__:	worthless
trivial	:__:__:__:__:__:__:	fundamental
beneficial	:__:__:__:__:__:__:	not beneficial
matters to me	:__:__:__:__:__:__:	doesn't matter
uninterested	:__:__:__:__:__:__:	interested
significant	:__:__:__:__:__:__:	insignificant
vital	:__:__:__:__:__:__:	superfluous
boring	:__:__:__:__:__:__:	interesting
unexciting	:__:__:__:__:__:__:	exciting
appealing	:__:__:__:__:__:__:	unappealing
mundane	:__:__:__:__:__:__:	fascinating
essential	:__:__:__:__:__:__:	nonessential
undesirable	:__:__:__:__:__:__:	desirable
wanted	:__:__:__:__:__:__:	unwanted
not needed	:__:__:__:__:__:__:	needed

Please answer the following questions to the best of your knowledge.

1. In the Jackson area, please name all the stores that you can think of that carry VCR's. _____

2. Have you ever purchased a VCR?
 ☐ Yes..... How many? _____
 ☐ No
3. Do you presently own a VCR?
 ☐ Yes
 ☐ No
4. Please list all the brands of VCR's that you know of. _____

5. Please list, in their order of importance, the features you think are important when evaluating VCR's.
 1. _____ 4. _____ 7. _____
 2. _____ 5. _____ 8. _____
 3. _____ 6. _____ 9. _____
6. Have you ever read informational material (other than promotional material) such as Consumer Reports or a newspaper article about VCR's?
 ☐ Yes
 ☐ No
7. Have you ever received information about VCR's from someone you would consider an expert (other than a salesperson)?
 ☐ Yes
 ☐ No
8. Are higher priced VCR's better than lower priced ones with the same features?
 ☐ Yes
 ☐ Sometimes
 ☐ No
 ☐ Don't know

CONTINUED ON NEXT PAGE

(QUESTIONS CONTINUED)

9. If a friend requested your advice for purchasing a VCR, how confident would you feel in advising this person?

Not at all confident						Very confident
1	2	3	4	5	6	7

10. How familiar would you consider yourself with VCR's?

Not at all familiar						Very familiar
1	2	3	4	5	6	7

11. Which of the following VCR technologies is more common?

- ☐ Beta.
- ☐ VHS.
- ☐ Super-VHS.
- ☐ Beta and VHS are equally common.
- ☐ Don't know.

12. Which of the following features is not associated with VCR's?

- ☐ Frame advance.
- ☐ Code modifier.
- ☐ Auto index.
- ☐ Fine edit.
- ☐ Don't know.

13. Which of the following is not a tuner type used in VCR's?

- ☐ Quartz synthesized.
- ☐ Electronic varactor.
- ☐ Voltage synthesized.
- ☐ Transistor-logic monitor.
- ☐ Don't know.

Please check or fill in the items below. [We would like to remind you that all responses will be treated with absolute anonymity. We do not represent any company or store. Complete answers will improve the contribution of the study.]

Gender: ☐ Male
 ☐ Female

Marital Status: ☐ Single
 ☐ Married

Employment Status: ☐ Employed
 ☐ Homemaker
 ☐ Seeking employment
 ☐ Retired
 ☐ Student
 ☐ Other. Please specify _____

Occupation: _____

Age: _____ years.

How many people live in your household (including yourself and the children)?
 _____ people.

What is the highest year of education you have completed?
[For example, high school graduate equals 12 years.]
 _____ years of formal education.

Annual Household Income:
Approximately \$ _____

THANK YOU VERY MUCH FOR YOUR PARTICIPATION!

**IF YOU WISH TO MAKE ANY REMARKS ABOUT THIS EXPERIMENT,
PLEASE USE THE BACK OF THIS PAGE TO DO SO.**

APPENDIX 3.16

DATA COLLECTION PLACES AND DATES

Jackson Michigan	June 13 1989	Afternoon
Jackson Michigan	June 13 1989	Evening
Jackson Michigan	June 15 1989	Evening
Tawas Michigan	July 5 1989	Evening
Lansing Michigan	July 9 1989	Noon
Jackson Michigan	July 12 1989	Evening
Tawas Michigan	July 12 1989	Evening

APPENDIX 3.17

SAMPLE LETTER TO FUND RAISERS

April 29, 1989

Mr. & Mrs. Jim Van Conant
2750 Glasgow Road
Jackson, MI 49201

Dear Mr. & Mrs. Van Conant:

Mr. Bill Keep has told me that you may be able to recruit some adults who would be willing to participate in a marketing experiment. I am most pleased and hope we can work the details out in a manner most beneficial to both parties. First, I would like to provide you with some information about the experiment to relieve you of your possible concerns. Then, I will summarize my expectations to facilitate your planning.

The purpose of the study is to improve our understanding of how individuals make purchase choices when faced with alternatives. Participation in this study involves no physical, social, legal, psychological, or economic risk. Participants will be given a hypothetical choice situation with alternative products and will be asked to state their choices on the survey form. This statement is purely hypothetical and cannot be interpreted, under any condition, as the participant's commitment to purchase any product or make any expenditure. The survey form will also include questions asking the participants about their feelings and opinions concerning the products, and some demographic information.

Absolute anonymity of the participants will be maintained. Since questionnaires will be randomly distributed and the individuals will not be asked to identify themselves by any means, it will be impossible to associate any participant with a questionnaire. Confidentiality of the individual information is also ensured since all findings will be reported in aggregate form. The participants are free to complete the questionnaire at their own pace or discontinue at any time without recrimination. The attached consent form will be presented to the participants in order to provide them with information concerning the study. The "30 minutes" survey completion time stated on the consent form (item 1) is a rough estimate which is subject to change. However, I do not expect it to exceed 60 minutes and a more accurate estimate will appear on the consent form at the time of the study.

I need at least two hundred individuals who are willing to participate in this study. I will pay \$5.00 to your organization for every participant you recruit, up to a maximum of 220 individuals. There are, however, some limitations as to who can participate. Due to the nature of the study, I can not employ minors, full-time students, or persons with diminished capacity (incompetent) in the study. Furthermore, I would like to employ only one of the spouses in case your group consists of many married couples. I understand you have implied to Mr. Keep that you may be able to find 100 couples, however, this constitutes some

risks for the study given the similar preferences and decision criteria of most married couples.

Although the exact date of the study is difficult to fix with certainty at this time, within three to five weeks is a good estimate. I will be able to give you a better estimate as preparations proceed.

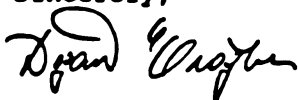
Should you decide your organization can participate in this study, I will need two pieces of information. First, I would like you to give me an approximate number of individuals you may be able to recruit, obviously, after you have a chance to discuss the issue with your members. This will enable me to contact other sources of participants without delay, should the need arise. Second, I would like to know if your group has a "deadline" beyond which it would be impossible to gather the participants. As far as the exact day and time of the study, I will be able to set up alternate days and times to accommodate different preferences. Finally, I would greatly appreciate if you could help me find a hall in which the participants can assemble for the duration of the experiment.

I hope I have been able to furnish you with sufficient information without boring you with many details. The data collection phase is a very significant part of my dissertation research and its smooth completion is crucial. I would like to stress again that the study does not threaten the rights and welfare of the participants. In fact, the research proposal has been submitted in more detail to the University Committee on Research Involving Human Subjects at Michigan State University and has been granted approval. A photocopy of their letter is attached.

I hope to meet with you in person and talk about details after you have had a chance to discuss the issue. In the meantime, please do not hesitate to contact me if you have any further questions. I am certain our cooperation will be mutually beneficial for both parties.

Thank you in advance.

Sincerely,



Dogan Eroglu
Department of Marketing &
Transportation Administration
315 Eppley Center
Michigan State University
East Lansing, Michigan 48823
Tel: (517) 353-6381 (office)
(517) 349-0822 (home)

Attachments

APPENDIX 4.1

DEMOGRAPHIC PROFILE OF THE SUBJECTS (N=286)

SEX	Male: 33.10%	Female: 66.10%
MARITAL STATUS	Married: 77.10%	Single: 22.90%
EMPLOYMENT STATUS	Employed: 56.10%	Homemaker: 12.90%
	Retired : 26.60%	Other : 4.40%
OCCUPATION	Professional: 32.20%	Managerial: 8.00%
	Sales : 3.50%	Clerical : 23.60%
	Semi-skilled: 8.00%	Other : 24.70%
AGE	Mean: 51.28	Median: 49.5
	Mode: 42 (6%)	Range : 22-99
HOUSEHOLD SIZE	Mean: 2.68	Median: 2
	Mode: 2 (44%)	Range : 1-6
EDUCATION (years)	Mean: 15.24	Median: 15
	Mode: 12 (30%)	Range : 4-31
HOUSEHOLD INCOME	Mean: \$41,718	Median: \$37,000
	Mode: \$50,000 (9%)	Range : \$10,000-\$150,00

APPENDIX 4.2

CODING INSTRUCTIONS FOR ROLE OF PRICE

Below are instructions on how to code answers to two questions. Both are multiple choice questions with an "other" option. The coder's task is to classify the "essay" answer appearing under the other category into one of the previously provided categories which best matches the answer. The criterion for matching is provided below.

Both questions are trying to determine how individuals use price in their decision processes. The alternative ways are:

1. Individuals may be engaging in trade-offs between price differences and additional benefits.
2. Individuals may be using price as a constraint where they are not interested in considering the additional benefits of the more expensive brands.
3. Individuals may be using price first as a constraint to eliminate some of the alternatives, then engage in trade-offs between price differences and additional benefits with the remaining brands (i.e., first two roles together.)
4. Individuals may not be using price in their decision.

Use the above guidelines to match the answer provided by the respondent with the other categories. Then write the number of the category which best matches the answer on the appropriate spot on the next page. If you can not match the response with any of the categories, try to match the response with the descriptions provided above and indicate your judgement by writing one of the following letters on the appropriate spot on the next page.

- A for the 1st role where trade-offs take place.
- C for the 2nd role where price is used as a constraint.
- D for the 3rd role where price is used in both roles.
- N for the 4th role where price is used not used.

If you can not find a reasonable match for the answer provided by the respondent, put an "X" on the appropriate spot. The last column on the next page is provided for brief comments if you feel the need. Please do not put any marks on the questionnaire.

Remember: although both questions are asked for the same purpose, your task is to code both questions separately and independently.

APPENDIX 4.3

AGREEMENT BETWEEN JUDGES: ROLE OF PRICE INSTRUMENT I

JUDGE 1

	1	2	3	4	5	6	7	8	T / (P)
1	0 (0)								0 (0)
2	.01	0 (0)							1 (.01)
3			.011 (.0004)	.02					3 (.04)
4				.055 (.0135)	.033				8 (.09)
5				.067	.166 (.06)	.067			27 (.3)
6						.311 (.136)	.01	.01	30 (.34)
7							.022 (.0006)		2 (.02)
8						.02		.188 (.04)	19 (.20)
T/(P)	1/.01	0/0	1/.01	13/.15	18/.20	36/.40	3/.03	18/.2	90

T : Total frequency per column or row

(P): Marginal proportions

Cell content: the proportion of units in which the judges agreed
(the proportion of agreements expected by chance)

P_o = total proportion of units in which the judges agreed

P_c = total proportion of agreements expected by chance

P_{sm} = sum of the smaller of the paired row and column proportions

$$K = P_o - P_c / 1 - P_c$$

$$K_m = P_{sm} - P_c / 1 - P_c$$

$$K = .67$$

$$K_m = .81$$

APPENDIX 4.4

AGREEMENT BETWEEN JUDGES: ROLE OF PRICE INSTRUMENT II

JUDGE 1

J U D G E 2		1	2	3	4	5	T / (P)
	1	.2614 (.0928)		.044	.011		28 (.32)
	2		0 (.0002)	.022			2 (.02)
	3	.022	.011	.4889 (.319)		.056	48 (.55)
	4			.011	0 (.0002)	.011	2 (.02)
	5			.011		.0795 (.0099)	8 (.09)
T/(P)		25/.29	1/.01	51/.58	1/.01	10/.11	88

T : Total frequency per column or row

(P) : Marginal proportions

Cell content : the proportion of units in which the judges agreed
(the proportion of agreements accepted per chance)

P_0 = total proportion of units in which the judges agreed

P_c = total proportion of agreements accepted by chance

P_{sm} = sum of the smaller of the paired row and column proportions

$K = P_0 - P_c / 1 - P_c$

$K_m = P_{sm} - P_c / 1 - P_c$

$K = .71$

$K_m = .91$

APPENDIX 4.5

MATCHING THE DEPENDENT VARIABLE MEASURES

If ROP1* is	and	ROP2 is	then	ROP is
A Priori Matching				
1 or 3**		4		Constraint
2 or 5 or 6		3		Attribute
4		5		Dual
8		1		No Role
Post Hoc Interpretations				
4		4		Constraint
2		1		Attribute
2 or 3 or 5		5		Dual
4		3		Dual
4		1		Dual

* ROP1 is the first dependent variable measure

ROP2 is the seceond dependent variable measure

**The numbers above indicate the number of the statement in the corresponding scale

APPENDIX 4.6

CODING INSTRUCTIONS FOR PAGES 6 AND 9

For each question write the number of points according to the following instructions.

- For question 1: 1 point per correct store name (see list I);
maximum 4 points; 0 points if blank
- 2: Yes=4 points; no=0 points
- 3: if number is 2 to 9, 1 point
- 4: yes=1 point; no=0 points
- 5: 1 point per correct brand name (see list II);
maximum 4 points; 0 points if blank
- 6: 1 point per reasonable attribute (see list III);
0 points if none
- 7: yes=1 point, no=0 points
- 8: yes=1 point, no=0 points
- 9: "sometimes"=1 point, 0 points if else
- 10: 1 point if "yes" to 9
- 11: the number circled on the scale
- 12: the number circled on the scale
- 13: if product is VCR and response = "VHS" 1 point
if product is dryer and response = "gas" 1 point
0 if else
- 14: if product is VCR and response = "code modifier" 1 point
if product is dryer and response = "electric" 1 point
0 if else
- 15: if product is VCR and response = "t-l monitor" 1 point
if product is dryer and response = "jog-shuttle" 1 point
0 if else

LIST I

Jackson

VCR
 Sears
 Pennys
 Wards
 Meijer's
 K-Mart
 Sid Young
 Fretter's
 Curtis Mathes
 Coleman
 Rent To Own
 Hopkins TV
 Radio Shack
 TV Clinic

DRYER
 Sears
 Holda's
 Ward's
 Brockie's Hardware
 Spring Arbor Appliance
 Maytag
 Fretter's

Lansing

Sear's
 Penney's
 Fretter's
 Highland
 Big George
 Best
 Service Merchandise
 Lansing Video
 Penney
 Stereo Shop
 Okemos TV
 Dambro
 Dicker & Deal
 Radio Shack
 Target

Sear's
 Dennis Distribution
 Fretter's
 Highland
 Big George
 Maytag

Tawas

Jacque's
 Young's
 Sear's
 Radio Shack
 K-Mart

Jacque's
 Young's
 Sear's

LIST II

CLOTHES DRYER BRAND NAMES

Admiral
 Amana
 Frigidaire
 GE

 Gibson
 Hotpoint

 Kelvinator
 Kitchen Aid
 Maytag
 Montgomery Ward
 Norge
 Sears
 Speed Queen
 Whirlpool
 White-Westinghouse

VCR BRAND NAMES

Emerson
 Fisher
 GE
 Hitachi
 JC Penny
 JVC
 Magnavox
 MGA
 Mitsubishi
 NEC
 Panasonic
 Quasar
 Realistic
 RCA
 Samsung
 Sanyo
 Sears
 Sharp
 Sony
 Sylvania
 Toshiba
 Zenith

LIST III

CLOTHES DRYER ATTRIBUTES

Dimensions
Depth
Mixed load drying
Permanent press
Delicates
Controls
Temperature settings
Moisture sensor
Temperature sensor
Drum light
End-of-cycle Signal
Drying rack
Porcelain finish
Console light
Type of energy (gas/electric)
Lint filter
No-heat setting
Type of heat pump

VCR ATTRIBUTES

Programming ease
Picture quality
Selectivity
Sensitivity in reception
Flutter (sound quality)
Signal clarity (sound quality)
Video Heads
Sharpness control
Programming capability
On-screen programming
Channel setting (initial)
Number of channels
Auto-index
Slow motion
Frame advance
Fine edit
Remote control
Technology (VHS versus BETA)

APPENDIX 4.7

DISTRIBUTION OF ROLE OF PRICE BY EXPERIMENTAL CONDITION

	Dual	Attribute	Constraint	No Role	Row Total
HP-HPd	18	18	1	4	41
	44	44	2	10	18
	23	15	20	13	
MP-HPd	24	16	2	2	44
	54	36	5	5	19
	31	13	40	7	
LP-HPd	10	24	0	8	42
	24	57	0	19	18
	13	20	0	27	
HP-LPd	8	16	1	5	30
	27	53	3	17	13
	10	13	20	17	
MP-LPd	10	26	0	6	42
	24	62	0	14	18
	13	21	0	20	
LP-LPd	7	22	1	5	35
	20	63	3	14	15
	9	18	20	17	
Column Total	77	122	5	30	234
	33	52	2	13	100

HP : High price condition
 MP : Medium price condition
 LP : Low price condition
 HPd: High price-difference condition
 LPd: Low price-difference condition

Cell content: Count
 Row percentage
 Column percentage

APPENDIX 4.8

ROLE OF PRICE BY EXPERIMENTAL CONDITION

4 X 6 (With medium price level)		
VCR	chi-square = 17.32,	df = 15, p = .30
DRYER	chi-square = 13.82,	df = 15, p = .54
4 X 4 (Without medium price level)		
VCR	chi-square = 8.51,	df = 9, p = .48
DRYER	chi-square = 3.97,	df = 9, p = .68

APPENDIX 4.9

ANOVA: EFFECTS OF INDEPENDENT VARIABLES ON ROLE OF PRICE

Source of Variation	SS	DF	MS	F	Sig. of F
Main Effects	2.91	4	.73	3.15	.016
Price	1.12	2	.60	2.58	.078
Price difference	1.47	1	1.47	6.38	.012
Product	.13	1	.13	.55	.459
Two-way interactions	1.10	5	.22	.95	.450
Price by Price difference	.85	2	.43	1.85	.161
Price by Product	.21	2	.10	.45	.637
Product by Price difference	.05	1	.05	.21	.651
3-way interactions	.26	2	.13	.57	.568
Price by Product by Price difference	.26	2	.13	.57	.568
Explained	4.68	11	.43	1.84	.050
Residual	44.37	192	.23		
Total	49.04	203	.24		

176
APPENDIX 4.10A

ANCOVA: ORIGINAL DESIGN WITH VCR

Source of Variation	SS	DF	MS	F	Sig. of F
Within Cells	22.73	100	.23		
Regression	.14	2	.07	.30	.74
Price	.25	2	.12	.55	.58
Price Difference	1.16	1	1.16	5.12	.03
Price by Price Diff.	.65	2	.32	1.43	.25

APPENDIX 4.10B

ANCOVA: ORIGINAL DESIGN WITH DRYER

Source of Variation	SS	DF	MS	F	Sig. of F
Within Cells	17.30	78	.22		
Regression	1.22	2	.61	2.74	.07
Price	.99	2	.50	2.24	.11
Price Difference	.61	1	.61	2.77	.10
Price by Price Diff.	.29	2	.14	.65	.53

APPENDIX 5.1A

BRAND CHOICE BY ROLE OF PRICE: DEPENDENT MEASURE I

	Constraint	Attribute	Dual	Minimal
Brand A (Least Expensive)	4	7	2	1
	29	50	14	7
	31	4	5	3
Brand B	3	12	16	2
	9	36	49	6
	23	7	42	5
Brand C	6	52	16	1
	8	69	21	1
	46	30	42	3
Brand D (Most Expensive)	0	104	4	34
		73	3	24
		59	11	90

Cell content: Count
Row percentage
Column percentage

Chi-square = 94.08

df = 9

p = .0001

APPENDIX 5.1B

BRAND CHOICE BY ROLE OF PRICE: DEPENDENT MEASURE II

	Constraint	Attribute	Dual	Minimal
Brand A (Least Expensive)	4	3	6	1
	29	21	43	7
	57	2	9	2
Brand B	1	11	17	2
	3	36	55	7
	14	8	26	4
Brand C	2	41	30	3
	3	54	40	4
	29	30	46	5
Brand D (Most Expensive)	0	81	12	50
		57	8	35
		60	19	89

Cell content: Count
Row percentage
Column percentage

Chi-square = 107.54
df = 9
p = .0001

APPENDIX 5.2

ANOVA: EFFECTS OF PRICE & PRODUCT CATEGORY ON PERCEIVED RISK

Source of Variation	SS	DF	MS	F	Sig. of F
Main Effects	367.07	3	122.36	1.73	.162
Price	362.81	2	181.14	2.56	.080
Product	6.01	1	6.01	.09	.771
2-Way Interaction					
Price by Product	428.93	2	214.46	3.03	.050
Explained	819.53	5	163.91	2.31	.044
Residual	18786.40	265	70.89		
Total	19605.93	270	72.62		

BIBLIOGRAPHY

BIBLIOGRAPHY

- Allen, Chris T. and Thomas J. Madden (1984), "Gauging and Explaining Advertising Effects: Emerging Concerns Regarding Construct/Ecological Validity," Advertising and Consumer Psychology, A. Tybout and P. Cafferates, eds. Cambridge, MA: Lexington Books.
- Alreck, Pamela L. and Robert B. Settle (1985), The Survey Research Handbook. Homewood, IL: Richard D. Irwin Inc.
- Anderson, Dan R. (1974), "The National Flood Insurance Program: Problems and Potentials," Journal of Risk & Insurance, 41 (4), 579-99.
- Arndt, Johan (1967), "Perceived Risk, Sociometric Integration, and Word of Mouth in the Adoption of a New Food Product," in Risk Taking and Information Handling in Consumer Behavior, Donald F. Cox, ed. Boston, MA: Harvard University Press.
- Aronson, Elliot and J. Merrill Carlsmith, (1968), "Experimentation in Social Psychology", in The Handbook of Social Psychology, G. Lindzey and E. Aronson, eds., 2. Reading, MA: Addison Wesley.
- Assael, Henry (1987), Consumer Behavior and Marketing Action, third ed. Boston, MA: Kent Publishing Co.
- Bain, Joe S. (1952), Price Theory. New York: Henry Holt and Co.
- Bauer, Raymond A. (1960), "Consumer Behavior as Risk Taking," in Risk Taking and Information Handling in Consumer Behavior, Donald F. Cox, ed. 1967, Boston, MA: Harvard University Press, 23-33.
- Bearden, William O. and Terence A. Shimp (1982), "The Use of Extrinsic Cues to Facilitate Product Adoption," Journal of Marketing Research, 19 (May), 229-39.

- Belk, Russell W. (1975), "Situational Variables and Consumer Behavior," Journal of Consumer Research, 10 (September), 181-96.
- Bem, Daryl J. (1967), "Self Perception: An Alternative Interpretation of Cognitive Phenomena," Psychological Review, 74, 184-200.
- Bem, Daryl J. (1968), "The Epistemological Status of Interpersonal Simulations: A Reply to Jones, Linder, Kiesler, Zanalt and Brehm," Journal of Experimental Social Psychology, 4, 270-6.
- Berkowitz, Leonard and Edward Donnerstein, (1982), "External Validity is More Than Skin Deep," American Psychologist, 37 (March), 265-7.
- Bettman, James R. (1972), "Perceived Risk: A Measurement Methodology and Preliminary Findings," in Proceedings, Third Annual Conference, M. Venkatesan, ed. Chicago: Association for Consumer Research, 394-403.
- Bettman, James R. (1973), "Perceived Risk and Its Components: A Model and Empirical Test," Journal of Marketing Research, 10, 184-90.
- Bettman, James R. (1979), An Information Processing Theory of Consumer Choice. Reading, MA: Addison Wesley Publishing Co., Inc.
- Bettman, James R. and Michael A. Zins (1977), "Constructive Processes in Consumer Choice," Journal of Consumer Research, 4 (September), 75-85.
- Bettman, James R. and Mita Sujun (1987), "Effects of Framing on Evaluation of Comparable and Noncomparable Alternatives by Expert and Novice Consumers," Journal of Consumer Research, 14 (September), 151-4.
- Biehal, Gabriel and Dipankar Chakravarti, (1982), "Experience With the Bettman-Park Verbal-Protocol Coding Scheme," Journal of Consumer Research, 8, 442-8.
- Biehal, Gabriel and Dipankar Chakravarti (1986), "Consumers, Use of Memory and External Information in Choice: Macro and Micro Perspectives," Journal of Consumer Research, 12 (March), 382-405.
- Bronner, Rolf (1982), Decision Making Under Time Pressure. Lexington, MA: Lexington Books, D.C. Heath and Co.

- Cacioppo, John T., Richard E. Petty, Chuang Feng Kao, and Regina Rodriguez (1986), "Central and Peripheral Routes to Persuasion: An Individual Difference Perspective," Journal of Personality and Social Psychology, 51 (5), 1032-43.
- Capon, Noel and Roger Davis (1984), "Basic Cognitive Ability Measures as Predictors of Consumer Information Processing Strategies," Journal of Consumer Research, 11 (June), 551-63.
- Cohen, Jacob (1960), "A Coefficient of Agreement for Nominal Scales," Educational and Psychological Measurement, 20 (1), 37-46.
- Cox, Donald F. (1967), "Risk Handling in Consumer Behavior -- An Intensive Study of Two Cases," in Risk Taking and Information Handling in Consumer Behavior, Donald F. Cox, ed. Boston, MA.: Harvard University Press, 34-81.
- Cox, Donald F. and Stuart U. Rich (1964), "Perceived Risk and Consumer Decision Making -- The Case of Telephone Shopping," Journal of Marketing Research, 4, 32-9.
- Cranach, Mario Von, Urs Kalbermatten, Katrin Indermuhle, and Gugler, Beat (1982), Goal-Directed Action. New York: Academic Press.
- Crow, Lowell E., Richard W. Olshawski, and John O. Summers (1980), "Industrial Buyers Choice Strategies: A Protocol Analysis," Journal of Marketing Research, 17 (February), 34-44.
- Deering, Barbara J. and Jacob Jacoby, (1972), "Risk Enhancement and Risk Reduction As Strategies for Handling Perceived Risk," Proceedings, Third Annual Convention of the Association for Consumer Research. Chicago: Association for Consumer Research, 404-16.
- Dowling, Grahame R. (1985), "The Effectiveness of Advertising Explicit Warranties," Journal of Public Policy & Marketing, 4, 142-52.
- Dowling, Grahame R. (1986), "Perceived Risk: The Concept and Its Measurement," Psychology & Marketing, 3, 193-210.
- Edwards, Ward (1954), "The Theory of Decision Making," Psychological Bulletin, 54 (4), 380-417.
- Eisner, Robert and Robert H. Strotz (1961), "Flight Insurance and The Theory of Choice," Journal of Political Economy, 69, 355-68.

- Eliashberg, Jehoshua, A. Stephen LaTour, Arvind Rangeswamy, and Louis W. Stern (1986), "Assessing the Predictive Accuracy of Two Utility-Based Theories in a Marketing Channel Negotiation Context," Journal of Marketing Research, 23 (May), 101-10.
- Ericson, Gary M. and Johnny K. Johansson (1985), "The Role of Price in Multi-Attribute Product Evaluations," Journal of Consumer Research, 12 (September), 195-9.
- Ericsson, Anders K. and Herbert, A. Simon (1980), "Verbal Reports as Data," Psychological Review, 87, 215-51.
- Ericson, Anders K. and Herbert A. Simon (1984), Protocol Analysis. Cambridge, MA: MIT Press.
- Eroglu, Sevgin (1987), "The Scenario Method: A Theoretical, Not Theatrical, Approach," Proceedings of the AMA Summer Educators Conference, S.P. Douglas et. al., eds. Chicago: American Marketing Association, 236.
- Fine, Seymour H. (1980), "Toward a Theory of Segmentation by Objectives in Social Marketing," Journal of Consumer Research, 7, 1-13.
- Frese, Michael and John Sabini (1985), Goal Directed Behavior: The Concept of Action in Psychology. Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.
- Geller, Daniel M. (1978), "Involvement in Role Playing Simulations: A Demonstration With Studies on Obedience," Journal of Personality and Social Psychology, 36 (3), 219-35.
- Gensch, Dennis N. and Rajshekhar G. Savalgi (1987), "The Influence of Involvement on Disaggregate Attribute Choice Models," Journal of Consumer Research, 14 (June), 71-82.
- Goering, Patricia A. (1985), "Effects of Product Trial on Consumer Expectations, Demand, and Prices," Journal of Consumer Research, 12 (June), 74-82.
- Gould, John P. and Subrata K. Sen (1984), "Issues in Pricing Research," Journal of Business, 57 (1), 4-8.
- Granger, Charles H. (1964), "The Hierarchy of Objectives," Harvard Business Review, 42, 63-74.
- Greenberg, Martin S. (1967), "Role Playing: An Alternative to Deception?," Journal of Personality and Social Psychology, 7, 152-7.

- Haley, Russell I. (1968), "Benefit Segmentation: A Decision-Oriented Research Tool," Journal of Marketing, July, 30-5.
- Hansen, Fleming (1972), Consumer Choice Behavior: A Cognitive Theory. New York: Free Press.
- Heider, F. (1958), The Psychology of Interpersonal Relations. New York: Wiley.
- Hershey, John C. and Paul J. H. Schoemaker (1980), "Risk-Taking and Problem Context in the Domain of Losses," Journal of Risk Insurance, 47 (1), 111-32.
- Hirshleifer, Jack (1980), Price Theory and Applications. Englewood Cliffs, NJ: Prentice Hall, Inc.
- Howard, John A. and Jagdish N. Sheth (1969), The Theory of Buyer Behavior. New York: Wiley and Sons.
- Jackson, Darrald W., Janet Keith, and Richard K. Burdick (1986), "Purchasing Agents, Perceptions: A Situational Approach," Journal of Marketing, 48 (4), 75-83.
- Jacoby, Jacob and Leon B. Kaplan (1972), "The Components of Perceived Risk," in M. Venkatesan, ed., Proceedings, 3rd Annual Conference. Chicago: Association for Consumer Research, 382-93.
- Johnson, Rose L. and James L. Kellaris (1988), "An Exploratory Study of Price/Perceived Quality Relationships Among Consumer Services," in Advances in Consumer Research, Michael J. Houston, ed. Association for Consumer Research, 15, 316-27.
- Kahneman, Daniel and Amos Tversky (1979), "Prospect Theory: An Analysis of Decision Under Risk," Econometrica, 47 (2), 263-91.
- Kamen, Joseph and Robert Toman (1970), "Psychophysics of Prices," Journal of Marketing Research, 7 (February), 27-35.
- Kamen, Joseph and Robert Toman (1971), "Psychophysics of Prices: A Reaffirmation," Journal of Marketing Research, 8 (May), 35-40.
- Keppel, Geoffrey (1982), Design & Analysis, 2nd ed. Englewood Cliffs, NJ: Prentice Hall.
- King, Bert and Irving L. Janis (1956), "Comparison of Effectiveness of Improvised Role Playing in Producing Opinion Changes," Human Relations, 9, 177-86.

- Mahajan, Vijay, Paul E. Green, and Stephen Goldberg (1982), "A Conjoint Model for Measuring Self- and Cross-Price/Demand Relationships," Journal of Marketing Research, 19 (August), 334-42.
- Malhotra, Naresh K. (1982), "Multi-Stage Information Processing Behavior: An Empirical Investigation," Journal of The Academy of Marketing Science, 10 (1), 54-71.
- Mazis, Michael B. and Timothy W. Sweeney (1973), "Novelty and Personality With Risk as a Moderating Variable," in Combined Proceedings, Boris W. Berkers and Helmut Becker, eds. Chicago: American Marketing Association, 401-11.
- Mead, George H. (1956), On Social Psychology. Chicago: Chicago University Press.
- Meyer, Robert J. and Thomas C. Eagle (1982), "Context-Induced Parameter Instability in a Disaggregate-Stochastic Model of Store Choice," Journal of Marketing Research, 19 (February), 62-71.
- Miller, George A., Eugene Galanter, Karl H. Pribram (1960), Plans and the Structure of Behavior. New York: Holt.
- Mixon, Donald (1971), "Behavior Analysis Teaching Subjects as Actors Rather Than Organizations," Journal of The Theory for Social Behavior, 1, 19-31.
- Monroe, Kent (1973), "Buyers, Subjective Perceptions of Price," Journal of Marketing Research, 10 (February), 70-80.
- Monroe, Kent (1977), "Objective and Subjective Contextual Influences on Price Perception," in Consumer and Industrial Buying Behavior, Arch G. Woodside, Jagdish N. Sheth, Peter D. Bennett, eds. New York: Elsevier North-Holland Inc., 287-96.
- Nagle, Thomas T. (1987), The Strategy and Tactics of Pricing. Englewood Cliffs, NJ: Prentice Hall.
- Newell, Allen and Herbert Simon (1972), Human Problem Solving. Englewood Cliffs, NJ: Prentice Hall.
- Nisbett, Richard E. and Timothy D. Wilson (1977), "Telling More Than We Can Know: Verbal Reports on Mental Processes," Psychological Review, 84, 231-59.

- Olshavsky, Richard W. (1985), "Towards a More Comprehensive Theory of Choice," in Proceedings of the Association for Consumer Research, E. C. Hirschman and M. B. Holbrook, eds. Provo, UT: Association for Consumer Research, 12, 465-70.
- Park, C. Whan, Robert W. Hughes Vinod Thukral, and Roberto Friedman (1981), "Consumers' Decision Plans and Subsequent Choice Behavior," Journal of Marketing, 45 (Spring), 33-47.
- Payne, John W. (1976), "Task Complexity and Contingent Processing in Decision Making: An Information Search and Protocol Analysis," Organizational Behavior and Human Performance, 16, 366-87.
- Payne, John W., Myron L. Braunstein and John S. Carroll, (1978), "Exploring Predecisional Behavior: An Alternative Approach To Decision Research," Organizational Behavior and Human Performance, 22, 17-44.
- Perry, Michael and B. Curtis Hamm (1969), "Canonical Analysis of Relations Between Socioeconomic Risk and Personal Influence in Purchase Decisions," Journal of Marketing Research, 6, 351-4.
- Peter, J. Paul and Lawrence X. Tarpey, Sr. (1975), "A Comparative Analysis of Three Consumer Decision Strategies," Journal of Consumer Research, 2 (June), 29-37.
- Peter, J. Paul and Jerry Olson (1987), Consumer Behavior: Marketing Strategy Perspectives. Homewood, IL: Irwin.
- Petroshius, Susan M. and Kent B. Monroe (1987), "Effect of Product-Line Pricing Characteristics on Product Evaluations," Journal of Consumer Research, 13 (March), 511-9.
- Punj, Girish N. and David W. Stewart (1983), "An Interaction Framework of Consumer Decision Making," Journal of Consumer Research, 10 (September), 181-96.
- Perdue, Barbara J. and John O. Summers (1986), "Checking the Success of Manipulations in Marketing Experiments," Journal of Marketing Research, 22, 317-26.
- Puto, Christopher P. (1987), "The Framing of Buying Decisions," Journal of Consumer Research, 14 (3), 301-15.

- Rao, Akshay R. and Kent B. Monroe, (1988), "The Moderating Effect of Prior Knowledge on Cue Utilization in Product Evaluations," Journal of Consumer Research, 15 (September), 253-64.
- Rao, Vithala R. (1984), "Pricing Research in Marketing: The State of the Art," Journal of Business, 57 (1), 39-60.
- Roselius, Ted (1971), "Consumer Rankings of Risk Reduction Methods," Journal of Marketing, 35, 56-61.
- Sarbin, Theodore R. and Vernon L. Allen (1968), "Role Theory," in The Handbook of Social Psychology, G Lindzey and E. Aronson, eds. Reading, MA: Addison Wesley.
- Sarel, Dan (1981), "Advances in Environmental Psychology-A New Perspective on Consumer Behavior," Proceedings of Educators Conference, K. Bernhardt, J. Dolich, M. Etzel, W. Kehoe, T. Kinnear, W. Perrault, and K. Roering, eds. Chicago: American Marketing Association, 135-8.
- Savage, Leonard J. (1954), The Foundations of Statistics. New York: Wiley.
- Schiffman, Leon and Leslie L. Kanuk (1983), Consumer Behavior. Englewood Cliffs, NJ: Prentice Hall, Inc.
- Schoemaker, Paul J. H. (1982), "The Expected Utility Model: Its Variants, Purposes, Evidence and Limitations," Journal of Economic Literature, 20, 529-63.
- Schoemaker, Paul J. H. and Howard C. Kunreuther, (1979), "An Experimental Study of Insurance Decisions," Journal of Risk Insurance, 46 (4), 603-18.
- Silver, Maury (1985), "Purposive Behavior in Psychology and Philosophy: A History," in Goal Directed Behavior: The Concept of Action in Psychology, Michael Frese and John Sabini, eds. Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers, 3-19.
- Simon, Herbert (1955), "A Behavioral Model of Rational Quarterly Journal of Economics, 69, 174-83.
- Simon, Herbert and Allen Newell (1971), "Human Problem Solving: The State of The Art in 1970," American Psychologist, 26 (2), 145-59.

- Slovic, Paul and Sarah Lichtenstein (1983), "Preference Reversals: A Broader Perspective," American Economic Review, 83 (4), 596-605.
- Solem, Allen R. (1960), "Human Relations Training," Personnel Administration, 23 (5), 29-37.
- Spencer, Charles D. (1978), "Two Types of Role Playing Threats to Internal and External Validity," American Psychologist, March, 265-8.
- Stapel, Jan (1972), " 'Fair' or 'Psychological' Pricing?" Journal of Marketing Research, 9 (February), 109-10.
- Sternthal, Brian and C. Samuel Craig (1982), Consumer Behavior: An Information Processing Perspective. Englewood Cliffs, NJ: Prentice Hall Inc.
- Suprenant, Carol F. and Michael R. Solomon (1987), "Predictability and Personalization in The Service Encounter," Journal of Marketing, 51 (April), 86-96.
- Svenson, Ola (1979), "Process Descriptions of Decision Making," Organizational Behavior and Human Performance, 23, 86-102.
- Sujan, Mita (1985), "Consumer Knowledge: Effects on Evaluation Strategies Mediating Consumer Judgements," Journal of Consumer Research, 12 (June), 31-46.
- Taylor, James W. (1974), "The Role Of Risk in Consumer Behavior," Journal Of Marketing, 38, 54-60.
- Todd, Peter and Izak Benbasat (1987), "Process Tracing Methods in Decision Support Systems Research: Exploring The Black Box," MIS Quarterly, 11 (4), 493-512.
- Tversky, Amos (1972), "Elimination by Aspects: A Theory of Choice," Psychological Review, 79 (July), 281-99.
- Tversky, Amos and Daniel Kahneman (1981), "The Framing of Decisions and the Psychology of Choice," Science, 211 (30 January), 453-58.
- Urbany, Joel E. (1985), "An Experimental Methodology for Studying Buyer Price Behavior," in AMA Proceedings, Marketing Communications: Theory and Research, Michael J. Houston and Richard J. Cuty, eds. Chicago: American Marketing Association, 119-23.

- Vincent, Mark and W. G. Zikmund (1976), "An Experimental Investigation of Situational Effects on Risk Perception," Advances in Consumer Research, B. B. Anderson, ed. Chicago: Association for Consumer Research, 3, 125-9.
- von Neumann, John and Oskar Morgenstern (1944), Theory of Games and Economic Behavior. Princeton, NJ: Princeton University Press.
- Watson, Donald S. and Mary A. Holman (1977), Price Theory and Its Uses. Boston, MA: Houghton Mifflin Co.
- Wilkie, William L. (1986), Consumer Behavior. New York: John Wiley & Sons, Inc.
- Wilkie, William L. and Edgar A. Pessemier (1973), "Issues in Marketing's Use of Multi-Attribute Attitude Models," Journal of Marketing Research, 10 (November), 428-41.
- Winer, Russell S. (1986), "A Reference Price Model of Price Choice for Frequently Purchased Products," Journal of Consumer Research, 13 (September), 250-6.
- Wright, Peter L. (1975), "Consumer Choice Strategies: Simplifying Versus Optimizing," Journal of Marketing Research, 11 (1), 60-7.
- Zikmund, William G. and Jerome E. Scott, (1973), "A Multivariate Analysis of Perceived Risk, Self-Confidence and Information Sources," Advances in Consumer Research, S. Ward and P. Wright eds., 1. Chicago: Association for Consumer Research, 404-16.

MICHIGAN STATE UNIV. LIBRARIES



31293009096540