

INDIVIDUAL FINANCIAL RISK TAKING PROPENSITY

IN CONSUMER DECISION MAKING:

A DEVELOPMENT OF MEASURES

By

BEVERLY SUZANNE BAILEY

Bachelor Of Arts  
University of Tulsa  
Tulsa, Oklahoma  
1982

Master of Science  
Oklahoma State University  
Stillwater, Oklahoma  
1985

Submitted to the Faculty of the  
Graduate College of the  
Oklahoma State University  
in partial fulfillment of  
the requirement for  
the Degree of  
DOCTOR OF PHILOSOPHY  
May 1990

INDIVIDUAL FINANCIAL RISK TAKING PROPENSITY IN  
CONSUMER DECISION MAKING:  
A DEVELOPMENT OF MEASURES

Thesis approved:

*Margaret J. Weber*

Thesis Advisor

*Candice Peck*

*John Russo*

*Richard Dodder*

*John C. Mowen*

*Elaine Jorgenson*

*Norman N. Durham*

Dean of the Graduate College

## PREFACE

This study was undertaken to provide a tested construct definition and measure of the financial risk dimension of the risk taking propensity construct. The research provides a finalized scale measuring the financial risk dimensions. Reliability of the instrument was determined by use of Cronbach's Alpha. Factor analysis was used to indicate scale dimensions. Correlation analysis was performed to determine discriminant validity.

The format of this dissertation deviates from the general thesis style used at Oklahoma State University. The purpose of this deviation in style is to provide several manuscripts suitable for publication as well as fulfilling the traditional thesis requirements. For the most part the manuscript style requirements dictated for The Journal of Consumer Affairs were followed for manuscript I. Manuscript style dictated for use by Social Indicators Research was used for manuscript II. Manuscript style recommended by American Psychological Association was used for manuscript III, which will be submitted to Home Economics Research Journal.

I wish to express my sincere gratitude to the individuals who assisted me in this project and during my course work at Oklahoma State University. In particular, I wish to thank my research advisor, Dr. Margaret J. Weber for her guidance and invaluable assistance. I am also grateful to Dr. Claudia J. Peck, who served as my major advisor, and to other committee members, Dr. Elaine Jorgensen, Dr. John Mowen, Dr. Richard Dodder, and Dr. John Rusco for their advisement during the course of this work. Appreciation is extended to Dr. Robert Curry for additional wisdom and guidance and to Iris McPherson and Mikki Ha for lending computer expertise.

Special thanks are due to my parents, Robert and Marjorie Bailey for unending support, moral encouragement and understanding. Appreciation is also extended to my brother, Dr. Robert Bailey, for additional guidance and encouragement.

## TABLE OF CONTENTS

|  | Page |
|--|------|
| MANUSCRIPT I FOR PUBLICATION . . . . .             | 1    |
| Introduction . . . . .                             | 2    |
| Method . . . . .                                   | 5    |
| Construct Definition . . . . .                     | 5    |
| The Development of Items . . . . .                 | 7    |
| The Instrument . . . . .                           | 8    |
| Data Collection . . . . .                          | 9    |
| Results . . . . .                                  | 10   |
| Summary and Conclusions . . . . .                  | 12   |
| References . . . . .                               | 14   |
| Tables . . . . .                                   | 17   |
| MANUSCRIPT II FOR PUBLICATION . . . . .            | 22   |
| Introduction . . . . .                             | 23   |
| Description of the Focus Group Interview . . . . . | 23   |
| Uses of Focus Group Interviewing . . . . .         | 24   |
| Planning the Focus Group Interview . . . . .       | 27   |
| Choice of Participants . . . . .                   | 28   |
| Use of the Moderator . . . . .                     | 29   |
| Interview Structure . . . . .                      | 30   |
| Data Analysis . . . . .                            | 31   |

|   | Page |
|---|------|
| Implications for Further Study . . . . .        | 33   |
| Bibliography . . . . .                          | 34   |
| MANUSCRIPT III FOR PUBLICATION . . . . .        | 35   |
| Introduction . . . . .                          | 36   |
| Purpose and Methodology . . . . .               | 39   |
| The Instrument . . . . .                        | 39   |
| Data Collection . . . . .                       | 40   |
| Findings and Discussion . . . . .               | 41   |
| Demographic Variables and Risk Taking . . . . . | 43   |
| Summary and Conclusions. . . . .                | 46   |
| Bibliography . . . . .                          | 48   |
| Tables . . . . .                                | 50   |
| APPENDIXES . . . . .                            | 54   |
| APPENDIX A - INTRODUCTIONS . . . . .            | 55   |
| APPENDIX B - LITERATURE REVIEW . . . . .        | 63   |
| APPENDIX C - METHODOLOGY . . . . .              | 87   |
| APPENDIX D - THE INSTRUMENT . . . . .           | 100  |
| APPENDIX E - FOCUS GROUP GUIDE . . . . .        | 109  |
| APPENDIX F - SUPPORTIVE DATA . . . . .          | 115  |
| APPENDIX G - BIBLIOGRAPHY . . . . .             | 124  |

## LIST OF TABLES

| Table   | Page |
|---|------|
| 1. Characteristics of Risk Averters and Risk Takers . . . . .   | 116  |
| 2. Demographic Profile of Sample . . . . .  | 117  |
| 3. Pearson Correlation Coefficients for<br>Consumer Financial Risk Scale and<br>Crowne and Marlow's Social Responsibility Scale . . . . . | 118  |
| 4. Pearson Correlation Coefficients for<br>Consumer Financial Risk Scale and<br>Burnett's Guilt Scale . . . . .                           | 118  |
| 5. Analysis of Variance for Gender and<br>Financial Risk Taking . . . . .   | 119  |
| 6. Analysis of Variance for Age and<br>Financial Risk Taking . . . . .  | 119  |
| 7. Analysis of Variance for Education<br>Level and Financial Risk Taking . . . . .  | 120  |
| 8. Analysis of Variance for Income<br>Level and Financial Risk Taking . . . . .   | 120  |
| 9. Factor Pattern for Financial<br>Risk Scale . . . . .   | 121  |
| 10. Factor Loadings for Consumer Financial<br>Risk Taking Scale . . . . .   | 122  |

INDIVIDUAL FINANCIAL RISK TAKING PROPENSITY IN CONSUMER DECISION MAKING:

A DEVELOPMENT OF MEASURES

MANUSCRIPT I FOR PUBLICATION

THE JOURNAL OF CONSUMER AFFAIRS



## INTRODUCTION

Risk is an integral part of life and ranges from the physical to the social. In that life's choices generally require risks, risk has been described as actually being one of life's certainties (MacCrimmon and Wehrung 1986). Numerous studies have attempted to use risk preference to explain such aspects of human behavior as achievement motivation (Weinstein 1969), group versus individual behavior (Rettig 1966; Vinokur 1971), substance abuse (Carney 1971) and managerial decision making (Laughunn, Payne & Crum 1980; MacCrimmon & Wehrung 1986). Whatever an individual's risk persuasion, it appears that the degree of risk one is willing to accept, or wishes to avoid, has a profound effect upon various choices in one's life (Barach 1971; Carney 1971; Kogan & Wallach 1964; MacCrimmon & Wehrung 1986; McKenna 1984; Vroom & Paul 1971).

Dardis (1983) emphasizes the role that individual risk preference may even play in governmental decisions relating to the consumer protection process. Viscusi (1984) also emphasized the importance of considering individual risk preferences in safety standard regulation. Studies exploring the effect of risk upon decision making fall into three groups; (1) the estimation of the degree of risk involved, (2) investigation of the decision maker's risk attitude, and (3) investigation of risk perception (Blaylock, 1985). The majority of studies involving risk and consumer behavior have focused upon perceived risk (Bauer 1960; Cox 1967; Dowling 1986; Fagley & Miller 1987; Kaplan, Szybillo & Jacoby 1974; Popielarz 1967). The concept of perceived risk has been described in general as the amount of risk that consumers discern when considering a purchase. The thesis behind the perceived-risk concept is that all consumers will tend to make risk-minimizing decisions based on their perception of purchase risk. The perceived risk is considered to be a function of possible consequences of a purchase and

the uncertainty involved. Consequences can be thought of as the costs if a given event occurs. The uncertainty element can be phrased in terms of probabilities that a given consequence will occur (Robertson, Zielinski & Ward 1984).

Fewer studies of consumer behavior have comprised the effect of individual risk propensity upon consumer choice. The majority of studies involving risk perception assume an unvarying degree of risk tolerance. They assume, rather that differences occur merely in the amount of risk perceived by the consumer in purchasing processes (Cox 1964; Popielarz 1967; Robertson, Zielinski and Ward 1984). Other studies, however, provide an indication that the role of individual risk propensity in consumer choice cannot be overlooked. Several studies which have touched upon risk propensity have found it to have an effect upon consumer choice behavior (McKenna 1984; Barach 1969).

Using limited measures of individual risk taking propensity, McKenna (1984) studied the relationship between personal, economic and social-psychological characteristics of women and their plans and actions for financial well-being in their older years. McKenna found that financial risk taking and overall risk taking, along with several other variables, made substantial contribution in explaining investment variation. She found that women in the study who were more oriented toward taking financial risks were more likely to be goal setters. She also found that women may consider themselves risk takers in general but not where finances are concerned. Financial risk was also the best single predictor of information seeking behavior.

In a comprehensive analysis of individual risk propensity of business executives, MacCrimmon and Wehrung (1986) found that:

1. Executives were more willing to take risks in business situations than in comparable personal situations.
2. Older managers were more averse to risk. Younger managers were more risk taking.

3. Managers with more dependents seemed to be more averse to risk than managers with fewer dependents.
4. Managers with post-graduate training were greater risk takers than were managers with lower levels of education.
5. Managers with more wealth took more risks for some measures of risk. However, they took less risk when other measures were used. Managers with higher incomes took more risks.
6. Chief executive officers and chief operating officers took more risks than did lower level managers.
7. Managers with more seniority were more averse to risk than managers with less seniority.

MacCrimmon and Wehrung state that some of the stereotypes associated with risk taking, such as the relationship between age and risk propensity tended to have a solid basis in fact according to their findings. Others, including the stereotype that higher education inhibits risk taking, were indicated to be false in their analysis.

Vroom and Pahl (1971), using a subset of the standard Kogan and Wallach (1964) choice-dilemma questionnaire, found a significant relationship between age and measurement of both risk taking and the value placed on risk. In studying managerial risk preferences for below-target returns, Laughunn, Payne and Crum (1980) state that the results from their study, and those of other similar studies indicate the presence of large individual differences in risky decision behavior. They emphasized the significance of such demographic variables as country of origin, firm type and organizational level in managerial decision making involving risk.

In reviewing the few articles that have touched upon individual difference in risk taking, there is an apparent significance in differences in risk taking and risk averse behavior, with several variables being found significant in the explanation of this difference. However, the scientific development and testing of measures exploring

individual difference in consumer risk propensity, particularly in the financial domain, is lacking, thus hindering study in this area. Therefore, the lack of research on consumer financial risk propensity focused the need for a development of measures. This study focuses on construct definition, and development of measures for the financial risk dimension.

Churchill (1979) suggests procedures for the development of measures. This framework emphasizes the development of measures which have desirable reliability and validity properties.

These steps include:

1. Specification of the construct domain
2. Generation of sample items
3. Data collection
4. Purification of the measure
5. Reliability and validity assessments
6. The development of norms

Churchill's framework serves as the guide for this study.

## METHOD

The method section of this article is divided into three sections describing the development of the construct, data collection and development of the instrument, and sampling procedure.

### *Construct Definition*

The domain of the construct, i.e., risk taking propensity in consumer decision making, was developed through an extensive review of previous literature and the development of the construct definition. It is as follows: Risk Taking Propensity - An individual's natural inclination or tendency toward either: (1) seeking out or accepting

situations where there is a desirable goal and a high chance and magnitude of potential loss, or (2) avoiding situations where there is a desirable goal and a high chance or magnitude of potential loss.

In consumer choice, seven dimensions of risk taking propensity are identified (Assael 1981; Jacoby & Kaplan 1972; MacCrimmon & Wehrung 1986; Minkowick 1964; Mowen 1987; Robertson, Zielinski and Ward 1984):

1. Financial risk taking - Behavior in situations where there is a risk of financial gain or loss. Financial risk can involve investment, budgeting, gambling, credit, expenditure, and risk of financial loss associated with product purchase.
2. Social Risk Taking - Behavior in situations where there is a risk of failure to meet the standards and therefore gain and maintain acceptance of an important reference group. Potential loss of self esteem due to repeated failure and changes in familial parent-child relationships and social relationships are involved in social risk.
3. Physical risk taking - Behavior in situations which involve the chance of actual physical harm or discomfort. This risk can take many forms including accidents, disease violence, heredity, diet, exercise, personal habits, etc. , consequences of taking physical risks can range from temporary mild discomfort to permanent disability and even death.
4. Professional risk taking - behavior in situations where risk is inherent in decisions affecting the success or failure in one's establishment and advancement of his or her career. Decisions about education, job choice and work performance all involve professional risk.
5. Performance risk taking - Behavior in situations where there is risk of product failure with a certain product that is purchased.
6. Opportunity cost risk taking - behavior in situations where there is a risk of losing a possible alternative opportunity if a certain option is chosen.

7. Time risk taking - behavior in situations where there is a risk of a loss of time as a resource if a certain option is chosen.

This study focuses on the development of a scale to measure the dimension financial risk propensity. In financial risk, several aspects are identified, including:

1. Investment risk - Chance and magnitude of financial loss involved in putting money into business, real estate, stocks, bonds, banking, etc., for the purpose of gaining income or profit.
2. Budgeting risk - Chance and magnitude of financial loss involved in scheduling expenses for a certain period according to the estimated or fixed income for that period.
3. Credit risk - Chance and magnitude of financial loss involved in the spending of finances.
4. Income Risk - Chance and magnitude of financial loss involved in obtaining financial resources through employment.
5. Product purchase risk - Chance and magnitude of financial loss involved in the buying of goods and services.
6. Expenditure Risk - Chance and magnitude of financial loss involved in the spending of financial resources.

#### *The Development of Items*

The second step in the development of the measure was the generation of items which capture the financial dimension of the domain as specified. The emphasis at this stage was to develop a set of items which define all aspects of the financial risk taking dimension.

Nunnally (1978) and Jessor and Hammond (1957) state that test items intended to indicate a construct should be selected by rational rather than intuitive means.

Therefore an item should be scrutinized for its logical relationship to the construct and grounds for choice of an item should be explicit and public.

Greenbaum (1988), Fern (1982), Cox, Higginbotham and Burton (1976), and Calder (1977) suggest that focus groups can be used to generate or select ideas and hypotheses and to aid in the identification and pilot testing of items that will later be scientifically tested through larger sample surveys. For this study, three focus groups consisting of seven subjects each were conducted (Fern 1982). In addition to the generation of scale items, the groups served in the provision of ideas leading to clarification of the risk taking construct as well as the financial risk taking dimension. The third focus group also aided in the provision of qualitative "pre-pilot" testing of items developed previously through literature review and the author's insight.

Using information gained in the focus group sessions, literature review and the insight of the author, an initial scale with items representing the various aspects of the financial risk taking dimension was developed. This scale contained a total of 31 items. The initial pool of items was pilot tested. This data was used in the initial, pre-scientific evaluation of scale item content. After the initial pilot testing, three of these items were eliminated resulting in 28 items.

### *The Instrument*

Generally the method most frequently used in personality measurement is printed tests in which individuals are required to describe themselves. Such self-inventories can include various types of scales and rating methods (Nunnally 1978). For this study, the initial instrument consisted of items comprising choices involving degrees of financial risk. The first portion of the initial instrument contained a 28-item five point Likert scale in which respondents were asked to indicate degree of agreement or

disagreement with statements comprising choices which involve either financial risk taking or risk averse behavior. For comparison and further indication of validity, another section of the instrument comprised Likert items involving choices of social risk. For purposes of determining discriminant validity, Burnett's (1988) Guilt Scale was included. This scale had a coefficient alpha of .83 indicating a strong degree of reliability (Burnett 1988).

Crowne and Marlow's (1964) Social Desirability scale was also included to attempt to determine the effects of social desirability upon response in the study. This scale was shown to have a coefficient alpha of .88, indicating internal consistent reliability. Items comprising demographic variables, including age, income level, sex, education level and financial investments made was also included.

#### *Data Collection*

One objective for this study was to develop an instrument to measure financial risk taking propensity in the general population. Therefore, the population for the study included males and females age 18 and above. A purposive sample of the population was taken from church congregations and various civic organizations in Tulsa and Payne counties in Oklahoma. Four churches, three civic and three social organizations were used in the sampling process. Sampling was conducted in the spring of 1989. Respondents were chosen until a total sample of 257 was reached.

To test the scale, contact was made with a variety of organizations whose memberships included males and females, older and younger persons with varying educational backgrounds and persons with varying income levels. Copies of the questionnaire were distributed at meetings of these groups. Completed forms were then collected.



Responses were obtained from 257 respondents. Sixty percent of respondents were female, 40% were male. Respondents ranged from age 18 to 83 and were rather evenly distributed across age categories with somewhat lower proportions age 60 and above than in other categories. Respondents were also fairly evenly distributed across annual household income categories with 25% listing income as \$19,999 and below; 18% between \$20,000 and \$29,999; 18% between \$30,000 and \$39,999; 15% between \$40,000 and \$49,999; and 25% \$50,000 and above.

### RESULTS

After administering the scale, principal component factor analysis was performed to confirm the scale dimensions. When eigenvalues fell below 1.0 factoring ceased. Factor loadings are shown in Table 1. Sixteen of the original 28 items loaded into one of the four factors with a factor loading greater than .50. These items were retained, while items with factor loadings of less than .50 were omitted from the final scale.

---

Insert Table 1 Here

---

While initial literature review indicated six prospective dimensions of the financial risk construct, the factor analysis did not totally confirm these dimensions. Results indicated the first factor contained ten items (items 3, 5, 6, 8, 9, 14, 16, 18, 20 and 27) assessing general financial planning risk (Table 2). Factor loadings of those items contained in factor one ranged from .54 to .71. The second factor contained four items (items 11, 13, 15 and 24) designed to assess purchasing risk. Factor loadings ranged from .62 to .71. Factor three contained one item (item 17) designed to assess stock market investment risk. This item loaded at .72. Factor four contained one item (item 1) designed to assess general investment risk. This item loaded at .75.

---

Insert Table 2 Here

---

The difference between expected factors and actual factors points out the need for scientific development and testing of the financial risk taking dimension and measures. Analysis did not support the generally stated components of financial risk, however four related factors emerged from the analysis. Further research is needed to provide additional confirmation of the factors indicated in this study. Future research is also needed to further develop items in factors involving stock market investment risk, general investment risk and insurance coverage risk. This study served as the initial phase in the development of measures. Results of the factor analysis have provided a scientific basis for further definition of the dimension and for additional development of the measure.

After the factor analysis was conducted, a reliability analysis was conducted using the 16-item scale. Cronbach's alpha (Cronbach 1951), a measure of internal consistency, was selected as the test which best summarized the amount of measurement error in the 16-item scale. Cronbach's alpha is a test for homogeneity of items which considers the correlations of all possible pairs of scale items as well as the number of items (Rowland, Dodder and Nickols 1985). The mean inter-item correlation was 0.18, giving an alpha coefficient of 0.78 which indicates a strong degree of consistency.

Discriminant validity of the 16-item scale was assessed by comparing correlations of financial risk taking with the constructs of consumer guilt and social desirability. The data revealed a correlation between the overall financial risk taking scale and social desirability scale (Crowne and Marlow 1964) of  $r=.186$  ( $p<.01$ ). Respondents who

were more risk taking tended to have somewhat higher scores on the social responsibility scale (Table 3), indicating they are more prone to give more socially desirable responses. In studying the relationship between the financial risk taking scale and the consumer guilt scale, the data revealed a correlation between the overall financial risk taking scale and consumer guilt scale (Burnett, 1988) of  $r = -.345$  ( $p < .01$ ). This indicates there is somewhat of an inverse relationship between financial risk propensity and guilt (Table 4). Respondents who were more risk averse according to their responses to the financial risk scale, tended to give somewhat higher guilt scores, while respondents who were greater financial risk takers had somewhat lower guilt scores. Both of these findings indicate the possibility of relationships which warrant further study.

#### SUMMARY AND CONCLUSIONS

This research constructed and tested an instrument Consumer Financial Risk Taking, which was designed to measure individual consumer financial risk taking propensity. Analysis of responses from 257 adults of varied ages, educational attainment, and income levels resulted in a 16-item scale capable of measuring financial risk propensity in four dimensions: general financial planning risk, purchasing risk, stock market investment risk, general and investment risk.

To measure reliability, Cronbach's Alpha was performed. A Cronbach's Alpha of .78 indicated that the scale is a reliable measure of the financial risk taking construct.

Several points should be noted for further scale development and research in this area. The factor loadings did not support the six dimensions of financial risk indicated in the literature search. However, because no previous research was found which had tested these dimensions empirically, this suggests that financial risk components may differ from those developed in the past. Because the final scale contained 16 items with few items in factors three and four, additional research is needed to develop additional items measuring these dimensions.

Information on individual financial risk taking propensity obtained from the use of the financial risk taking scale can be valuable to consumers in gaining an understanding of their own risk styles. This can aid in financial planning and resource management. The scale can be used by educators in teaching financial resource management. It can also be used to expand research efforts in the area of financial risk and consumer risk taking behavior.

Because little empirical research has been conducted in the development of a consumer financial risk taking scale, the purpose of this research was to provide an initial base for construct definition and scale development. Additional research is needed to further develop and investigate validation of the Consumer Financial Risk Taking scale. In studying the factor pattern of the scale, it remains to be seen whether the same items will cluster together. Comparison of the financial risk measure and measures of other constructs could provide further testing of discriminant validity. The data in this study were collected for the primary purpose of scale and construct validation, and respondents were purposive sampled, therefore no conclusions can be drawn regarding financial risk taking propensity of any subgroup of the respondents. Care should be taken before generalizing the results from these data. Additional data collection is needed to provide indications of demographic relationships to financial risk taking propensity.

## REFERENCES

- Assael, H. (1981). *Consumer Behavior and Marketing Action.*, Boston: Kent Publishing.
- Barach, J. A. (1969), "Advertising effectiveness and risk in the consumer decision process," *Journal of Marketing Research*, VI: 314-320.
- Bauer, R. A. (1960), "Consumer behavior as risk taking," in *Dynamic Marketing for a Changing World*, R. S. Hancock ed., Chicago: American Marketing Association, 389-398.
- Blaylock, B. K. (1985), "Risk perception: Evidence of an interactive process," *Journal of Business Research*, 13:207-221.
- Brody, R. P. and Cunningham, S. M. (1968), "Personality variables and the consumer decision process," *Journal of Marketing Research*, 5:50-57.
- Burnett, Melissa (1988), *Guilt as an Individual Difference Variable: Scale Development and Predictive Validity Assessment*, Unpublished doctoral dissertation, Oklahoma State University, Stillwater, Oklahoma.
- Calder, B. (1977), "Focus groups and the nature of qualitative marketing research," *Journal of Marketing Research*, 14:353-364.
- Campbell, D. T., and Fiske, D. W. (1959), "Convergent and discriminant validation by the multitrait-multimethod matrix," *Psychological Bulletin*, 56:81-105.
- Carney, R.E. (1971), *Risk taking behavior: concepts, methods and applications to smoking and drug abuse*. Springfield: Charles C. Thomas Publisher.
- Churchill, G. A., Jr. (1979), "A paradigm for developing better measures of marketing constructs," *Journal of Marketing Research*, XVI:64-73.
- Cox, D. F. (1967), *Risk taking and information handling in consumer behavior*, Boston: Division of Research, Graduate School of Business Administration - Harvard University.
- Cox, K. Higginbotham, J, and Burton, J. (1976). "Application of focus group interviews in marketing," *Journal of Marketing*, 40, 77-80.
- Crowne D., and Marlow, D. (1964). "Social Desirability Scale," in *The Approval Motive*, New York: John Wiley and Sons, Inc.
- Dardis, R. (1983), "Consumer risk response and consumer protection: an economic analysis of seat belt usage," *Journal of Consumer Affairs*, 17 (2):245-261.

- Dowling, G. R. (1986), "Perceived risk: the concept and its measurement," *Psychology and Marketing*, 3, 193-210.
- Fagley, N.S. and Miller, P. (1987), "The effects of decision framing on choice of risky vs. certain options," *Organizational Behavior and Human Decision Processes*, 39:264-277.
- Fern, E. (1982). "The use of focus groups for idea generation: the effects of group size, acquaintenship and moderator on response quantity and quality," *Journal of Marketing Research*, XIX, 1, 1-13.
- Greenbaum, T. L. (1988). *The Practical Handbook and Guide to Focus Group Research*, Lexington, MA: Lexington Books.
- Jacoby, J., and Kaplan, L. (1972). "The components of perceived risk," *Advances in Consumer Research III*. M. Venkateson (ed.), Chicago: Association for Consumer Research, 382-383.
- Jessor, R. and Hammond K. (1957), "Construct validity and the Taylor anxiety scale," *Psychological Bulletin*, 54 (3):161-171.
- Kaplan, L. B., Szybillo, G. J. and Jacoby, J. (1974). "Components of perceived risk in product purchase: a cross validation," *Journal of Applied Psychology*, 59, 3, 287-291.
- Kassarjian, H. (1971), "Personality and consumer behavior: a review," *Journal of Marketing Research*, VIII, 409-418.
- Kogan, N. and Wallach, M. (1967), "Risk-taking as a function of the situation, the person and the group," in *New Directions in Psychology III*, New York: Holt Rinehart and Winston, 1967.
- Laughhum, D. J., Payne, J. W. and Crum, R. (1980), "Managerial risk preferences for below-target returns," *Management Science*, 26(13):1239-1249.
- McKenna, J. S. (1984) , *Planning for retirement security: a study of women in the middle years*, Unpublished Doctoral Dissertation, Oklahoma State University, Stillwater, Oklahoma.
- MacCrimmon, K. R. and Wehrung, D. A. (1986), *Taking risks: The management of uncertainty*, New York: The Free Press.
- Minkowick, A. A. (1964), "Correlates of ambivalent risk taking and rigidity," *United States Air Force Document* 64-1486, United States Air Force.
- Mowen, J. C. (1987), *Consumer Behavior*, New York: Macmillan Publishing Company.
- Nunnally, Jum C. (1978), *Psychometric Theory*, New York: McGraw-Hill Book Company.
- Peter, P. (1981), "Construct validity: A review of basic issues and marketing practices," *Journal of Marketing Research*, XVIII:133-145.

- Peter, P. (1981), "Construct validity: A review of basic issues and marketing practices," *Journal of Marketing Research*, XVIII:133-145.
- Popielarz, J. T. (1967), "An exploration of perceived risk and willingness to try new products," *Journal of Marketing Research*, IV:368-372.
- Rettig, S. (1966), "Ethical risk taking in group and individual conditions," *Journal of Personality and Social Psychology*, 4 (6):648-654.
- Robertson, T. S., Zielinski, J. and Ward, S. (1984), *Consumer behavior*, Robertson & Robertson, Inc.
- Rowland, V. T., Dodder, R. A., and Nickols, S. Y. (1985), "Perceived adequacy of resources: development of a scale," *Home Economics Research Journal*, 14 (2), 218-225.
- Vinokur, A. (1969), "Distribution of initial risk levels and group decision involving risk," *Journal of Personality and Social Psychology*, 13 (3):207-214.
- Vroom, V. H. and Pahl, B. (1971), "Relationship between age and risk taking among managers," *Journal of Applied Psychology*, 55, (5):399-405.

TABLE 1

Factor Pattern for Financial Risk Scale

| ITEM<br>(on 28-item scale) | FACTOR 1      | FACTOR 2      | FACTOR 3     | FACTOR 4      |
|----------------------------|---------------|---------------|--------------|---------------|
| 1                          | -0.324        | -0.082        | 0.046        | <b>-0.751</b> |
| 3                          | <b>0.715</b>  | -0.065        | 0.197        | -0.100        |
| 5                          | <b>0.584</b>  | -0.014        | 0.473        | -0.150        |
| 6                          | <b>-0.649</b> | 0.275         | -0.340       | -0.340        |
| 8                          | <b>-0.655</b> | -0.022        | -0.436       | -0.166        |
| 9                          | <b>-0.614</b> | -0.021        | 0.464        | 0.139         |
| 11                         | 0.126         | <b>0.663</b>  | 0.102        | -0.253        |
| 13                         | -0.013        | <b>-0.710</b> | -0.169       | -0.088        |
| 14                         | <b>0.564</b>  | -0.081        | 0.475        | -0.080        |
| 15                         | -0.034        | -0.515        | 0.159        | -0.300        |
| 16                         | <b>-0.543</b> | -0.307        | -0.385       | -0.007        |
| 17                         | 0.190         | 0.227         | <b>0.716</b> | -0.066        |
| 18                         | <b>-0.702</b> | 0.203         | 0.003        | -0.111        |
| 20                         | <b>0.589</b>  | 0.103         | -0.031       | -0.436        |
| 24                         | -0.327        | <b>-0.625</b> | 0.050        | -0.085        |
| 27                         | <b>0.637</b>  | -0.313        | -0.028       | -0.043        |



**TABLE 2**  
**FACTOR LOADINGS FOR CONSUMER FINANCIAL RISK TAKING SCALE**

| ITEM<br>(on 16-item scale)<br>Risk  | FACTOR 1<br>General Financial<br>Planning Risk | FACTOR 2<br>Purchasing Risk | FACTOR 3<br>Stock Market<br>Investment Risk | FACTOR 4<br>General<br>Investment |
|---|--|-----------------------------|---|-----------------------------------|
| 1. In general, I am a financial risk taker.   | 0.715  | -0.065                      | 0.197                                       | 0.100                             |
| 2. I would be willing to invest money in a new business a friend was starting.                            | 0.583  | -0.014                      | 0.473                                       | -0.150                            |
| 3. In general, I prefer to avoid financial risk.  | 0.649  | 0.275                       | 0.119                                       | 0.340                             |
| 4. I avoid running up credit card debt.   | -0.655   | -0.022                      | -0.436                                      | 0.166                             |
| 5. I keep a close eye on my finances.   | -0.614   | -0.021                      | 0.464                                       | 0.139                             |
| 6. I would be willing to join a co-worker in starting a new company if I was interested in the idea.      | 0.564  | -0.081                      | 0.475                                       | -0.080                            |
| 7. I try to find out as much as I can about a product before I buy it.                                    | -0.543   | -0.307                      | 0.385                                       | -0.007                            |
| 8. It is better to be safe and have a moderate income than to take financial risks to make a high income. | -0.702   | 0.203                       | -0.003                                      | -0.111                            |

TABLE 2. (continued)

| ITEM  | FACTOR 1<br>General Financial<br>Planning Risk | FACTOR 2<br>Purchasing Risk | FACTOR 3<br>Stock Market<br>Investment Risk | FACTOR 4<br>General<br>Investment Risk |
|---|--|-----------------------------|---|--|
| 9. I would be willing to use money budgeted for necessities to buy a luxury item I wanted.                                    | 0.589  | 0.103                       | -0.131                                      | -0.436                                 |
| 10. I would put money in an uninsured savings and loan that offered a very high rate of interest.                             | 0.637  | -0.313                      | -0.028                                      | -0.043                                 |
| 11. I would buy a television whose features I really liked but whose performance record I hadn't heard much about.            | 0.126  | 0.663                       | 0.102                                       | -0.253                                 |
| 12. If I were buying a VCR, I would choose one with the best warranty over one with a special feature I liked.                | 0.013  | -0.710                      | -0.169                                      | 0.088                                  |
| 13. I am careful not to spend too much on items I really don't need so that I make sure I have money for things I might need. | -0.327   | -0.625                      | 0.050                                       | -0.085                                 |
| 14. If I had extra money to invest, I would buy stock in a new company I liked.   | 0.190  | 0.277                       | 0.716                                       | -0.066                                 |
| 15. If I had money to invest, I would invest in a low-risk money market fund.   | -0.324   | -0.082                      | 0.046                                       | -0.751                                 |
| 16. If my company didn't offer health insurance, I would buy private insurance.   | -0.034   | -0.515                      | 0.159                                       | -0.300                                 |

---

**TABLE 3**

Pearson Correlation Coefficients for  
Consumer Financial Risk Scale and  
Crowne and Marlow's Social Responsibility Scale

---

|                       | Mean   | Standard Deviation | Correlation |
|-----------------------|--------|--------------------|-------------|
| Risk Propensity       | 30.826 | 7.577              |             |
| Social Responsibility | 49.861 | 5.813              | .186        |

---

\*N=257

TABLE 4

Pearson Correlation Coefficients for  
Consumer Financial Risk Scale and  
Burnett's Consumer Guilt Scale

|                 | Mean    | Standard Deviation | Correlation |
|-----------------|---------|--------------------|-------------|
| Risk Propensity | 30.826  | 7.577              |             |
| Guilt           | 101.401 | 13.473             | -0.345      |

\*N=257

THE APPLICATION OF FOCUS GROUP INTERVIEWS IN SCALE DEVELOPMENT

MANUSCRIPT II FOR PUBLICATION

SOCIAL INDICATORS RESEARCH

## INTRODUCTION

Within the past decade, the focus group interview has become one of the most frequently used forms of qualitative study (Greenbaum, 1988). As with other methods of qualitative research, focus group interviewing does not serve as a replacement for representative sampling and quantitative study. However, taken in its proper perspective, focus group research can aid in the development of quantitative methodology and can provide an in-depth understanding of aspects of particular issues of study.

This article explores the use of focus group interviewing construct definition and scale development, particularly in the generation of items. It examines several viewpoints concerning the value of the focus group interview, guidelines for the use of this form of research in scale development. It also suggests a need for further study of the use of focus group interviewing.

## DESCRIPTION OF THE FOCUS GROUP INTERVIEW

Davidson (1975) provides a description of the focus group interview which encompasses its variety of methods and uses. His definition is as follows:

"A focused group interview is a qualitative tool for collecting information in which a number of respondents simultaneously discuss a given topic under the guidance of a moderator."

Scribner (1987) states that the process for a focus group session involves bringing together approximately eight people for a period of one to two hours to discuss specified topics. In the session, a skilled moderator, using a prepared outline, stimulates discussion that will elicit relevant information.

Morgan (1988) differentiates focus groups from other forms of group interviewing in emphasizing their reliance on group interaction and in the establishment of the discussion topic by the researcher. The data produced by such groups are generally reviewed in the form of transcripts and tapes of the sessions.

While the technique of focus group interviewing has its origins in psychology and sociology (Greenbaum, 1988; Morgan, 1988), it has been primarily used in marketing research. The method has become standard in commercial consumer research (Shimp, 1988) where it often is used in a phenomenological mode (Calder, 1977). Scientific researchers, however, are now studying the uses of focus group research in exploratory study - in the development of hypotheses and constructs, the generation of scale items, interpretation of earlier study results, and in orienting oneself to new fields of study (Calder, 1977; Greenbaum, 1988; Morgan, 1988; Fern, 1982).

#### USES OF FOCUS GROUP INTERVIEWING

Calder (1977) did much to clarify the uses of focus group research in various realms of study. He outlines three approaches to the use of focus groups in qualitative study. The first, "the clinical approach", seeks quasi-scientific knowledge which is meant to have scientific status. Calder is quick to point out that it is not fully scientific because of its lack of exposure to scientific methods. Therefore, the clinical approach results in everyday knowledge "masquerading" as science - yielding a form of quasiscientific knowledge.

The second approach to focus group research, deemed by Calder as "the phenomenological approach" simply seeks everyday knowledge. It involves obtaining the experience and everyday knowledge of those being studied. This knowledge is not meant to have scientific status, and is not touted as such. The majority of focus

groups conducted for commercial consumer research takes the phenomenological approach.

An additional approach, described by Calder as "the exploratory approach" is perhaps most applicable to scale and construct development, and, therefore, is of most interest to the scientific researcher. In the exploratory approach to focus group interviewing, the main purpose is to stimulate the thinking of the researcher. Such groups are conducted in anticipation of scientific quantitative research. Calder states that such groups ". . . . Represent an explicit attempt to use everyday thought to generate or operationalize second-degree constructs and scientific hypotheses." (Calder, 1977, p. 356).

Calder further clarifies the exploratory approach:

"Though the subject of exploratory qualitative research is everyday knowledge, the knowledge desired is best described as prescientific. The rationale of exploratory focus groups is that considering a problem in terms of everyday explanation will somehow facilitate a subsequent scientific approach. Focus groups are a way of accomplishing the construct generation process. . . ." (Calder, 1977, p. 356).

The exploratory approach is concerned with prescientific knowledge. It is a precursor to scientific study. One of the ways it has been utilized has been in construct development and testing, particularly in initial idea and scale item generation (Calder, 1977; Fern, 1982).

Nunnally (1978) and Jessor and Hammond (1957) state that test items intended to indicate a construct should be selected by rational rather than intuitive means. Therefore an item should be scrutinized for its logical relationship to the construct and grounds for choice of an item should be explicit and public.

Greenbaum (1988), Fern (1982), Calder (1977), and Cox, Higginbotham and Burton (1976), suggest that focus groups can be used to generate or select ideas and hypotheses. They can also aid in the identification and pilot testing of items that will



later be scientifically tested through larger sample surveys. By using focus group sessions, it is thought that the group setting encourages various individual opinions to be considered and expanded upon in group discussion. In this way, it is possible for new ideas to develop, for the strength of ideas to be pre-tested and for existing ideas to be expanded.

One of the most obvious ways focus groups can be used in scale development is through giving evidence of how respondents typically talk about the topic in question. More importantly, preliminary focus groups can be used to ensure that the researcher has as complete a picture of participants' thinking as possible (Morgan, 1988). In this way, unanticipated factors can be uncovered, lessening the chances of specification error. At the final stages of survey research, after data has been collected, focus groups can be used as a follow-up to provide deeper insight into certain aspects of the study. This can be especially helpful if there are any areas of confusion or any puzzling results.

An example of use of focus group research in scale development can be seen in Bailey's (1989) development of an instrument to measure consumer financial risk taking propensity. In this study, three groups consisting of seven participants each were conducted. Major objectives of the study in its entirety were to develop and test measures that could be used to determine levels of consumer financial risk propensity; that is, whether a consumer has a tendency toward taking risks in financial decision making, or whether the consumer is risk averse where financial decision making is involved. In this study a literature search was initially conducted, focus groups were conducted, and an instrument was constructed. The instrument was pilot tested and revised. A survey to test the instrument was then conducted using 257 respondents. The sample consisted of males and females age 18 and above. Statistical analysis was then conducted to determine scale reliability and validity.

Focus groups were utilized in this study during the phase in which construct definition and instrument development took place. Prior to the focus group research, a literature review had been conducted to provide initial information in construct definition. Focus groups were used to gain information which could be used to further clarify the financial risk taking construct and its dimensions. The groups also served to provide information used in the development of specific scale items.

In emphasizing the benefit of linking focus groups and survey research, Morgan (1988) states:

" . . . focus groups have a considerable potential for contributing to survey research. . . . Given the importance of surveys to social science research, it makes sense not only to make use of every advantage they offer, but also take advantage of what other methods have to offer. Survey researchers have often noted the potential value of combining their work with focus groups, and it is now time - and past time - to move forward in this regard" (Morgan, 1988, p. 36).

#### PLANNING THE FOCUS GROUP INTERVIEW

As in any other form of research, the key to getting the greatest benefit from focus group interviewing is to have a narrowly defined set of objectives and a thoroughly developed plan of study. Other aspects of planning for focus group sessions include choice of participants, choice of moderator, interview structure, and analysis of collected data.

In Bailey's (1989) research designed to develop and test the financial risk propensity construct, the author used focus group interviewing to achieve the following objectives:

1. To provide ideas possibly leading to clarification of the construct as well as clarification of the dimensions of the construct - In meeting this objective, focus group participants were asked to discuss their definitions of risk taking in general, and of financial risk taking in

particular. They discussed various forms of risk taking behavior, and specifically, forms of financial risk taking. They discussed descriptions of someone who is a risk taker and someone who is risk averse. They debated whether risk taking is a positive, negative or neutral trait. They also discussed their views on relationships between certain demographic variables, such as age and gender, are related to risk taking behavior.

2. To generate ideas to be used in the development of scale items.- Group participants discussed specific incidents of decision making involving financially risky or risk averse behavior. They told of incidents in which they had been involved, and of incidents in which they had not actually been involved but had known that included risk. They discussed aspects of each incident, including whether they thought the incident was one commonly affecting the general population, whether specific age groups might be more involved in the incident, and what specific risk was involved in the situation.
3. To provide qualitative "pre-pilot" testing of previously developed items (items drawn out through literature review and the author's insight) - Participants in the final focus group were given in initial version of the scale. They discussed the items on the scale, giving insight into the readability and applicability of specific items, and providing an "pre-test" view of response to the questions. This information helped in restructuring several items, in deleting several items, and in obtaining ideas for additional items.

#### CHOICE OF PARTICIPANTS

While in the past, groups of 8-12 members were often common, most authors currently suggest that smaller groups, usually involving 4-8 members are more manageable and can generate more ideas of higher quality (Fern 1983, 1982). Group

members should be strangers to, not acquaintances of, the moderator. It is generally thought that each group should be homogeneous in nature (Fern, 1982). In the author's research of risk propensity, age of group members served as the homogeneous trait linking the focus group members.

The author utilized three focus groups of seven members each. Participants were obtained from a social/civic organization. The focus group sessions were conducted in the winter of 1989. The first group consisted of participants over 60 years of age. The second group consisted of participants age 40 to 60. The third group consisted of participants age 21 to 40. Groups consisted of both male and female participants.

#### USE OF THE MODERATOR

Crucial to the success of the focus group interview is the skill of the moderator (Greenbaum, 1988; Axelrod, 1976). The purpose of the moderator in focus group research is to keep the discussion on the subject area in a nondirective manner. The moderator's overall mission is to bring forth input from the focus group that will achieve the objectives of the group session established by the researcher (Greenbaum, 1988). The aim of interviewing techniques should be to make participants comfortable and to encourage interaction (Calder, 1977; Cox, Higginbotham and Burton, 1976). In using such groups in construct development and scale item generation, while interaction between the moderator and participants is not always important, a scientific researcher should moderate the groups (Calder, 1977). Scribner (1987) states that in most cases, the moderator should also be the author of the research report.

Because in this study, the purpose of the focus groups was to examine various aspects of the consumer risk taking construct, its dimensions and scale items, the researcher served as moderator of the groups. A script was developed prior to

conducting the groups and served as an outline for conducting the discussions. In this way, care was taken to maintain objectivity in group interviewing and analysis of information. While the moderator led group discussion, care was taken not to direct the discussion too stringently. Discussion by each participant was encouraged and care was taken not to allow one or two participants dominate the discussion. Participants were encouraged to discuss ideas openly. In this way, new ideas were generated from ideas which had been previously discussed, and a broader perspective of the perceptions of various participants, as well as the group as a whole, could be seen. The main goal in moderating was to encourage and guide discussion while maintaining objectivity throughout the group interview.

#### INTERVIEW STRUCTURE

According to Morgan (1988), an effective focus group should follow four criteria: (1) it should cover a maximum range of relevant topics, (2) it should provide data that is as specific as possible, (3) it should foster interaction that explores the participants feelings in some depth, and (4) it should take into account the personal context that participants use in generating responses to the topic. These require attention to the concrete issues of interview content. The interview should cover the topic at hand while providing observations that meet the larger demands of an effective focus group (Morgan, 1988).

In the author's use of focus group interviewing, a written moderator guide was developed to "script" the progression of the group discussions. Sessions commenced with a few general questions which led into a more specific discussion of the financial risk construct. Participants verbally explored experiences involving their own risk taking and risk averse behavior. Members' interaction provided additional depth of

exploration and aided in the guidance of the discussion. Special care was taken to adhere to the objectives which had been set for the groups.

The general contention by researchers is that groups should be conducted until the responses brought forth in group discussion become predictable. Usually three to four groups are conducted in a study. Groups are audio and/or videotaped for review. Group sessions in this study were audiotaped so that the tapes could be reviewed during the analysis phase.

### DATA ANALYSIS

It is important to remember the qualitative nature of the focus group technique when analyzing results. At the same time, the method of analysis should fit the objectives of the research, therefore, certain quantitative techniques should not always be ruled out (Morgan, 1988). For the most part, however, groups are analyzed for discussion content in a written format.

In the author's use of focus groups, audio tapes and written notes of the sessions were reviewed. Discussion relating specifically to the construct was analyzed for content. Areas of discussion were categorized and aided in the confirmation of the dimensions of the financial risk propensity construct. Finally, discussion contributing to the development of specific scale items was content analyzed.

As stated earlier, an objective of the author's focus group study was to "pre-pilot" test previously developed items. The final focus group fulfilled this objective. Using the information obtained by this group, changes in the initial scale were discussed. As a result of the testing, several items were altered slightly to enhance readability.

The author found the use of focus group interviewing to be quite beneficial in gaining a greater understanding of the financial risk propensity construct. The interaction among participants led to an in depth discussion that provided insight for study. In development of a construct definition, an intensive literature search was

conducted. The search provided initial information leading to the definition of the construct and the identification of its dimensions. In addition, close to 40 percent of the final scale items were brought out from information obtained in the literature search. Focus groups provided additional data which aided in construct definition and dimension identification. In addition, approximately 60 percent of the final scale items resulted directly from information obtained in the focus group sessions.

Some general conclusions were drawn from the focus group discussions. The majority of group members said they believe that there are people who are "risk takers" and those who prefer to avoid risk. Many believed that propensity toward risk taking was a neutral trait, however, a few participants believed that being a risk taker was a negative trait in many instances while a few others deemed the trait as positive.

The first group conducted, which consisted of participants age 60 and above, believed that younger consumers were generally high risk takers. Some stated that often younger consumers take too many financial risks, especially where using credit and running up debt are concerned. They saw this as negative in most cases. They stated that they believe older consumers are much less willing to take financial risks, mainly because they do not have the years to rebuild a financial base that a younger consumer would have. The third group, which consisted of participants age 20-40, did not see as much difference in risk taking among older and younger consumers. They did say that they believed that taking risks in financial decision making was often necessary to increase wealth. Many in this age group said they saw themselves as moderate to high financial risk takers.

Each group was evenly divided in beliefs concerning the effect of gender in risk taking. Many believed that women were more risk averse financially, while others said they believed men tended to avoid financial risk more often. Some members thought that consumers with more wealth were greater risk takers while others

thought that those with less wealth preferred to take more risks with the wealth they had. Both of these points were debated in each of the group sessions.

The groups discussed many aspects of financial risk. They saw much decision making involving risk, especially where credit and investment was concerned. The majority believed that it is important for consumers to understand their financial risk propensity.

#### FOCUS GROUP INTERVIEWING - A VALUABLE TECHNIQUE NEEDING FURTHER STUDY

The popularity of focus group interviewing has led researchers to analyze the technique itself (McQuarrie and McIntyre, 1988; Fern, 1983, 1982; Shimp, 1982). The value of focus groups versus individual interviewing, moderator use, optimal group size, and the effects of polarization have all come under recent scrutiny (McQuarrie and McIntyre, 1988; Fern, 1983, 1982). Yet focus groups continue to increase in popularity as the variety of disciplines utilizing the technique continues to grow (Morgan, 1988). It is the author's belief that focus groups can indeed be a valuable research technique if utilized correctly. It is important to understand the qualitative nature of the technique. Researchers should also understand the strengths and drawbacks of the technique (as discussed in the article).

It is apparent that there is value in the use of focus group research. It is also apparent that there is a substantial need for further research into the technique itself. Further use and investigation of the focus group interview will serve to strengthen this technique as a useful method of qualitative study.



## BIBLIOGRAPHY

- Axelrod, Myril D.: 1976, "The dynamics of the group interview". Advances in Consumer Research, 3, pp. 437-441.
- Bailey, Beverly: 1989, Consumer Financial Risk Propensity: A Development of Measures, unpublished doctoral dissertation, Oklahoma State University.
- Calder, Bobby J.: 1977, "Focus groups and the nature of qualitative marketing research". Journal of Marketing Research, 14, pp. 353-364.
- Cox, Keith K., Higginbotham, James B., and Burton, John: 1976, "Applications of focus group interviews in marketing". Journal of Marketing, 40, pp. 77-80.
- Davidson, Thomas Lea : 1975, "When . . . if ever . . . are focus groups a valid research tool?" in Edward M. Mazze (ed.), 1975 Combined Proceedings, American Marketing Association Conference, Series No. 37.
- Fern, Edward F.: 1983, "Focus groups: a review of some contradictory evidence, implication, and suggestions for future research". Advances in Consumer Research, 10, pp. 121-126.
- \_\_\_\_\_ : 1982, "The use of focus groups for idea generation: the effects of group size, acquaintanceship, and moderator on response quantity and quality". Journal of Marketing Research, 19, pp. 1-13.
- Goldman, Alfred E. : 1962, "The group depth interview". Journal of Marketing, July, pp.61-68.
- Greenbaum, Thomas L.: 1988, The Practical Handbook and Guide to Focus Group Research, (Lexington, MA: Lexington Books).
- Jessor, R. And Hammond, K.: 1957, "Construct validity and the Taylor anxiety scale". Psychological Bulletin, 54, 3, pp. 161-171.
- McQuarrie, Edward F. and McIntyre, Shelby H.: 1988, "Conceptual underpinnings for the use of group interviews in consumer research". Advances in Consumer Research, 15, pp. 580-586.
- Morgan, David L.: 1988, Focus groups as qualitative research, (Newbury Park CA: Sage Publications).
- Nunnally, Jum C.: 1978, Psychometric Theory, (New York NY: McGraw-Hill Book Company).
- Scribner, Peggy : 1987, "Through the looking glass: using focus groups to gather consumer perspectives". Mobius, VI, 1, pp. 8-12.
- Shimp, Terence A.: 1983, "A potpourri of consumer research methods". Advances in Consumer Research, 10, pp. 127-129.

THE PREDICTIVE VALIDITY OF MEASURES OF INDIVIDUAL  
FINANACIAL RISK TAKING PROPENSITY

MANUSCRIPT III FOR PUBLICATION

HOME ECONOMICS RESEARCH JOURNAL

## The Predictive Validity of Measures of Individual Financial Risk Taking Propensity

### INTRODUCTION

In recent times the study of various aspects of risk and risk taking has served as a topic of continual interest in research designed to determine human behavior. Numerous studies have attempted to use risk preference to explain such aspects of human behavior as achievement motivation (Weinstein, 1969), group versus individual behavior (Rettig, 1966; Vinokur, 1971), substance abuse (Carney, 1971) and managerial decision making (Laughunn, Payne and Crum, 1980; MacCrimmon and Wehrung, 1986). Whatever an individual's risk persuasion it appears that the degree of risk one is willing to accept, or wishes to avoid has a profound effect upon various choices in life (Barach, 1969; Carney, 1971; Kogan and Wallach, 1965; MacCrimmon and Wehrung, 1986; McKenna, 1984).

Studies exploring the effect of risk upon decision making fall into three groups -- (1) exploring how much risk is involved, (2) exploring the decision maker's attitude toward risk, and (3) exploring the degree of risk the decision maker perceives. Most studies involving risk in consumer decision making have focused upon perceived risk (Anderson & Shanteau, 1970; Dowling, 1986; Fagley and Miller, 1987). Most perceived risk theory proposes that consumers generally act to minimize risk in decision making. Risk handling behavior is said to vary among individuals because the amount of risk perceived varies by consumer (Robertson, Zielinski and Ward, 1984). With this perspective, the notion of risk reduction has been repeatedly examined (Dowling, 1986; Peter & Ryan, 1976; Winakor, Canton & Wolins, 1980).

Fewer studies of consumer decision making have comprised the effect of individual risk propensity upon consumer choice. The majority of studies involving risk perception assume an unvarying degree of risk tolerance. They assume rather, that differences occur merely in the amount of risk perceived by the consumer in decision making (Dowling, 1986; Peter & Ryan, 1976; Robertson Zielinski and Ward, 1984), however, the role of individual risk propensity in consumer decision making cannot be overlooked. Even if the amount of risk perceived among consumers is similar in a given situation, risk reduction behavior may vary because individual risk taking behavior may vary (Dardis, 1983; Kogan & Wallach, 1967; MacCrimmon & Wehrung, 1986; McKenna, 1984).

Using limited measures of individual risk taking propensity, McKenna (1984) studied the relationship between personal, economic and social-psychological characteristics of women and their plans and actions for financial well-being in their older years. McKenna found that financial risk taking and overall risk taking, along with other variables, made substantial contribution in explaining investment variation. She found that women in the study who were more oriented toward taking financial risks were more likely to be goal setters. She also found that women may consider themselves risk takers in general but not when finances are concerned. Financial risk was also the best single predictor of information seeking behavior.

In a comprehensive analysis of individual risk propensity of business executives, MacCrimmon and Wehrung (1986) found that:

1. Executives were more willing to take risks in business situations than in comparable personal situations.
2. Older managers were more averse to risk. Younger managers were more risk taking.

3. Managers with more dependents seemed to be more averse to risk than managers with fewer dependents.
4. Managers with post-graduate training were greater risk takers than were managers with lower levels of education.
5. Managers with more wealth took more risks for some measures of risk. However, they took less risk when other measures of risk were used. Managers with higher incomes took more risks.
6. Chief executive officers and chief operating officers took more risks than did lower level managers.
7. Managers with more seniority were more risk averse than managers with less seniority.

MacCrimmon and Wehrung (1986) state that some of the stereotypes associated with risk taking, such as the relationship between age and risk propensity were reinforced by their findings. Others, including the stereotype that higher education inhibits risk taking, were indicated to be false in their analysis.

Vroom and Pahl (1971), using a subset of the standard Kogan and Wallach (1964) choice dilemma questionnaire, found a significant relationship between age and measurement of both risk taking and the value placed on risk. In studying managerial risk preferences for below-target returns, Laughunn, Payne and Crum (1980) state that the results from their study, and those of other similar studies, indicate the presence of large individual differences in risky decision behavior. They emphasized the significance of such demographic variables as country of origin, firm type and organizational level in managerial decision making involving risk.

While several studies have begun to explore consumer risk taking behavior (Barach, 1969; McKenna, 1984), an instrument to measure risk taking propensity in

the realm of consumer behavior had not yet been validated. Therefore a scale to measure consumer financial risk propensity was developed and tested.

#### PURPOSE AND METHODOLOGY

The purpose of this paper is to describe the development of a consumer financial risk taking scale. In investigating the scale, a comparison was made between the consumer financial risk taking scale and T. Rowe Price's Risk Tolerance measure (1989) which is used in financial advisement. In addition, possible relationships between several demographic variables, including age, gender, and income level will be discussed. In this study a scale to measure consumer financial risk taking propensity was constructed and tested. Reliability tests resulted in a Cronbach Alpha of .78 indicating a high degree of scale reliability. Factor analysis indicated four distinct factors, including: general financial planning risk, purchase risk, stock market investment risk, and general investment risk. Sixteen items loaded in the factor analysis and comprised the final scale. This article focuses on additional information and comparisons conducted in the study, particularly the comparison of the final 16-item scale with T. Rowe Price's risk tolerance scale and comparisons between demographic variables and response to the consumer financial risk taking scale.

#### The Instrument

Initially, the consumer financial risk taking scale was developed through literature review and focus group interviewing. Generally the method most frequently used in personality measurement is printed tests in which individuals are required to describe themselves. Such self-inventories can include various types of scales and rating methods (Nunnally, 1978).

For this study, the initial instrument consisted of 28 items comprising choices involving degrees of financial risk. The scale consisted of five-point Likert statements

anchored by strongly agree and strongly disagree. Possible scores ranged from 28 to 140 with higher scores indicating greater levels of financial risk propensity. Included in the questionnaire was also a section of choice dilemma questions (T. Rowe Price, 1989) comprising financial situations. Choices constituted varying levels of risk. Demographic questions including gender, age, income, education level and occupation were also included in the questionnaire. Completed questionnaires were recoded so that on a scale of one to five, a response of one indicated a risk averse response, while a response of five indicated a risk taking response.

As previously discussed, a factor analysis was conducted after the scale was administered. Sixteen of the original 28 items loaded into one of five factors. These items comprised the final scale used in the remainder of the analysis.

#### Data Collection

One objective for this study was to develop an instrument to measure financial risk taking propensity in the general population. Therefore, the population for the study included males and females age 18 and above. A purposive sample of the population was taken from church congregations and various civic and social organizations in Tulsa and Payne counties in Oklahoma. Four churches, three civic and three social organizations were used in the sampling process. Sampling was conducted in the spring of 1989. Respondents were chosen until a total sample of 257 was reached.

To test the scale, contact was made with a variety of organizations whose membership included males and females, older and younger persons with varying educational backgrounds and persons with varying income levels. Copies of the questionnaire were distributed at meetings of these groups. Completed forms were then collected.

Respondents were obtained from 257 respondents. Sixty percent of respondents were female, 40% were male. Respondents ranged from age 18 to 83 and were rather evenly distributed across age categories with somewhat lower proportions age 60 and above than in other categories. Respondents were also fairly evenly distributed across annual household income categories with 25% listing income as \$19,999 and below; 18% between \$20,000 and \$29,999; 18% between \$30,000 and \$39,999; 15% between \$40,000 and \$49,999; and 25% \$50,000 and above.

#### FINDINGS AND DISCUSSION

Initially, a reliability analysis was conducted using the 16-item scale. Cronbach's alpha (Cronbach, 1951), a measure of internal consistency, was selected as the test which best summarized the amount of measurement error in the 16-item scale. Cronbach's alpha is a test for homogeneity of items which considers the correlations of all possible pairs of scale items as well as the number of items (Rowland, Dodder and Nickols, 1985). The mean inter-item correlation was 0.18, giving an alpha coefficient of 0.78 which indicates a strong degree of consistency. Discriminant validity of the 16-item scale was assessed by comparing correlations of financial risk taking with the constructs of consumer guilt and social desirability. The data revealed a correlation between the overall financial risk taking scale and social desirability scale (Crowne and Marlow, 1964) of  $r=.186$  ( $p<.01$ ). This indicates that those with higher risk taking scores had somewhat higher scores on the social responsibility scale. In studying the relationship between the financial risk taking scale and the consumer guilt scale, the data revealed a correlation between the overall financial risk taking scale and consumer guilt scale (Burnett, 1988) of  $r=-.345$  ( $p<.01$ ). This indicates there is somewhat of an inverse relationship between financial risk propensity and guilt. Respondents who were more risk averse according to their responses to the financial risk scale, tended to



give somewhat higher guilt scores, while respondents who were greater financial risk takers had somewhat lower guilt scores. Both of these findings indicate the possibility of relationships which warrant further study.

An across subjects correlation was conducted between the consumer financial risk taking scale and T. Rowe Price's risk tolerance measure to determine whether the two scales are related. Price's scale is given to clients for use in financial advisement, while the consumer financial risk taking scale was developed scientifically to measure the defined construct. Analysis was conducted to determine whether there are differences in findings between the scales.

An across subjects analysis of variance indicated a Pearson correlation coefficient between the consumer risk scale and T. Rowe Price's scale of  $-.132$  which was significant at the  $.03$  level. Subjects who responded with greater risk taking responses on the consumer risk taking scale were more risk averse in their answers to T. Rowe Price's risk tolerance measure. This would indicate that the two scales may not be measuring the same thing, or may not be perceived in the same way. It appears that there is a need for scientifically tested, uniform measures of financial risk taking. Correlations between the demographic variables gender and age and the two scales also indicated differences between the scales. Both gender ( $-.20$ ) and age ( $-.32$ ) were correlated significantly ( $p < .01$ ) with the consumer financial risk scale while neither gender nor age ( $.002$  and  $.042$  respectively) were correlated significantly with T. Rowe Price's measure. It should be noted that in previous literature (MacCrimmon & Wehrung, 1986; McKenna, 1984) age and gender were significant in their relationship to risk taking behavior. Again, there appears to be a need for scientifically tested, uniform measures.

It is the author's contention that the results of this portion of the study indicate the need for further empirical testing of a scale which consumers can use to determine their financial risk propensity. This study is meant to serve as a basis for such research.

#### Demographic Variables and Financial Risk Taking

Though results of this study are not generalizable due to the use of non-random sampling, relationships between financial risk taking and demographic variables were studied to serve as indications for future research. Demographic variables studied included gender, age, income level and education level.

#### Gender and Risk Taking Behavior

Earlier research (McKenna, 1984) stated that males generally are greater financial risk takers, while females are more financially risk averse. An analysis of variance was conducted using gender categories male and female as the independent variable, and subjects' mean response scores to the consumer financial risk taking scale as the dependent variable. This test indicated a significant difference between the two gender categories in their mean response to the consumer financial risk scale (Table 1). There

---

Insert Table 1 Here

---

was a significant difference in risk taking behavior when gender served as the independent variable ( $df=1$ ,  $F=11.12$ ,  $p<.0.1$ ). A subsequent Duncan test indicated that the mean scores of male subjects (39.950) was significantly higher than those of female subjects (36.558). Therefore, in this analysis, male respondents indicated higher risk taking propensity, while female respondents were more averse to

risk. This finding supports McKenna's research in that there does appear gender does appear to have an effect upon financial risk propensity.

#### Age and Risk Taking Behavior

Research conducted by MacCrimmon and Wehrung (1986) indicated that younger business managers tended to take greater financial risks than older managers. Results of a one-way analysis of variance using categories of age as the independent variable and response to the consumer financial risk taking scale as the dependent variable supported these findings (Table 2). Respondents were divided into three age groups,

---

Insert Table 2 Here

---

18-39, 40-59 and 60 and above. An analysis of variance indicated that there was a significant difference between mean risk response scores of at least one of the three age categories ( $df=2$ ,  $F=11.38$ ,  $p<.01$ ). Duncan's multiple range test indicated that mean risk propensity scores of respondents in the age 60 and above category (33.195) were significantly lower than those in the 18-39 and 40-59 categories (39.875 and 37.606 respectively). Therefore respondents age 60 and older tended to be more risk averse than those in the two younger age categories. This would support MacCrimmon and Wehrung's research in saying that age plays a significant role in financial risk propensity.

#### Education Level and Risk Behavior

MacCrimmon and Wehrung's (1986) research indicated that managers with higher levels of education were greater risk takers than those with lower education levels. A one-way analysis of variance using education level as the independent variable and

response to the consumer financial risk taking scale as the dependent variable did not support education level as a significant influence in financial risk behavior (Table 3).

---

Insert Table 3 Here

---

Respondents were asked to indicate the highest level of education completed. Education levels were grouped into three categories: (1) grade school through high school degree, (2) some college completed and college degree, and (3) some graduate school completed and graduate school degree. Results indicated no significant difference in mean responses to the consumer financial risk taking scale among these three groups ( $df=2$ ,  $F=.76$ ,  $p>.47$ ). Duncan's multiple range test indicated no significant difference in mean responses between the categories of education. Therefore, it appears that education is not significant in financial risk taking propensity.

#### Income Level and Risk Taking Behavior

Previous research (MacCrimmon and Wehrung, 1986) indicated that managers with higher levels of income took more risk than those with lower levels of income. A one-way analysis of variance using income level as the independent variable and response to the consumer financial risk taking scale as the dependent variable did not support these findings. In this study, income was divided into three levels: (1) \$14,999 and below, (2) \$15,000 to \$29,999, and (3) \$30,000 and above. The analysis of variance (Table 4) showed a significant difference in response to the risk

---

Insert Table 4 Here

---

scale between the three categories ( $df=2$ ,  $F=4.70$ ,  $p,.01$ ). Duncan's multiple range test indicated that respondents in the highest income level group were significantly more risk averse (Mean=36.776) than those in the lower two income level groups (with means of 39.939 and 37.827). This indicates that those respondents with higher incomes generally prefer to avoid financial risk while those with lower incomes were more willing to take financial risks.

#### SUMMARY AND CONCLUSIONS

This research involved the development of an instrument Consumer Financial Risk Taking, which was designed to measure individual consumer financial risk taking propensity. Analysis of responses from 257 adults of varied ages, educational attainment, and income levels resulted in a 16 item scale capable of measuring financial risk propensity in four dimensions: general financial planning risk, purchasing risk, stock market investment risk, general and investment risk. A Cronbach's Alpha of .78 indicated that the scale is a reliable measure of the financial risk taking construct. Across subjects correlation between the consumer financial risk scale and T. Rowe Price's risk tolerance scale revealed a negative correlation between the two scales. Subjects who were more risk taking according the the consumer financial risk taking scale were more risk averse on T. Rowe Price's scale. The author contends that this points out the need for scientifically tested, uniform measures of financial risk taking propensity. Analysis of variance between

demographic variables and response to the consumer financial risk taking scale indicated that, in this study, gender, age and income level were significant in financial risk propensity. While results of this study may not be generalizable due to sampling methods, it appears that there may be support for earlier findings by McKenna (1984) and MacCrimmon and Wehrung (1986).

Information on individual financial risk taking propensity obtained from the use of the financial risk taking scale can be valuable to families in gaining an understanding of their own risk styles. This can aid in financial planning and resource management. The scale can be used by educators in teaching financial resource management. It can also be used to expand research efforts in the area of financial risk and consumer risk taking behavior.

The purpose of this research was to provide an initial base for construct and scale development concerning consumer financial risk taking propensity. The research pointed out a need for scientifically tested, uniform measures. It also provided possible confirmation of past research findings involving the relationship between age and financial risk taking propensity (MacCrimmon & Wehrung, 1986) and gender and financial risk propensity (McKenna, 1984). It should be noted that because the purpose of this study was to develop and test the instrument, purposive sampling was used. Additional research using random sampling methods are needed before results can be seen as generalizable. Much additional research is needed to further develop and investigate validation of the consumer financial risk taking scale. Further study using random methods of sampling are needed to provide generalizable data concerning relationships between demographic variables and scale response. It is hoped that this study will provide a base for further research and will encourage investigation of consumer financial risk propensity.

## REFERENCES

- Anderson, N. H., and Shanteau, J. C. (1974). Information integration in risky decision making. Journal of Experimental Psychology, 84, 441-451.
- Barach, J. A. Advertising effectiveness and risk in the consumer decision process (1969). Journal of Marketing Research, VI, 314-320.
- Burnett, Melissa (1988). Guilt as an Individual Difference Variable: Scale Development and Predictive Validity Assessment, Unpublished doctoral dissertation, Oklahoma State University, Stillwater, Oklahoma.
- Carney, R.E. (1971). Risk taking behavior: concepts, methods and applications to smoking and drug abuse. Springfield: Charles C. Thomas Publisher.
- Crowne D., and Marlow, D. (1964). Social desirability scale, in The Approval Motive, New York: John Wiley and Sons, Inc.
- Cronbach, L. (1951). Coefficient alpha and the internal structure of tests Psychometrika, 16, 3, 297-334.
- Dardis, R. (1983). Consumer risk response and consumer protection: an economic analysis of seat belt usage. Journal of Consumer Affairs, 17, 2, 245-261.
- Dowling, G. R. (1986). Perceived risk: the concept and its measurement. Psychology and Marketing, 3, 193-210.
- Dyer, J.S., and Sarin, R. (1982). Relative risk aversion. Management Science, 28, 8, 875-886.
- Fagley, N.S. and Miller, P. (1987). The effects of decision framing on choice of risky vs. certain options. Organizational Behavior and Human Decision Processes, 39, 264-277.
- Kogan, N. and Wallach, M. A. (1967). Risk taking as a function of the situation, the person, and the group. In G. Mandler (ed.), New directions in psychology III. New York: Holt Rinehart and Winston, 111-278.
- Laughum, D. J., Payne, J. W. and Crum, R. (1980). Managerial risk preferences for below-target returns. Management Science, 26, 13, 1239-1249.
- McKenna, J. S. (1984). Planning for retirement security: a study of women in the middle years. Unpublished Doctoral Dissertation, Oklahoma State University, Stillwater, Oklahoma.

- MacCrimmon, K. R. and Wehrung, D. A. (1986). Taking risks: The management of uncertainty. New York: The Free Press.
- Nunnally, J. C. (1978). Psychometric Theory. New York: McGraw-Hill Book Company
- Peter, J. P. and Ryan, M. J. (1976). An investigation of perceived risk at the brand level. Journal of Marketing Research, XIII, 184-188.
- Rettig, S. (1966). Ethical risk taking in group and individual conditions. Journal of Personality and Social Psychology, 4, 6, 648-654.
- Robertson, T. S., Zielinski, J. and Ward, S. Consumer behavior. Robertson & Robertson, Inc., 1984.
- T. Rowe Price. (1988). A quick test for risk tolerance. Fortune 1989 Investment Guide, 118, 97.
- Tversky, A. and Kahneman, D. (1981). The framing of decisions and the psychology of choice. Science, 211, 30, 453-458.
- Tversky, A. and Kahneman, D. (1974). Judgment under uncertainty: heuristics and biases. Science, 185, 1124-1131.
- Vinokur, A. Distribution of initial risk levels and group decision involving risk. (1969). Journal of Personality and Social Psychology, 13, 3, 207-214.
- Vroom, V. H. and Pahl, B. Relationship between age and risk taking among managers. Journal of Applied Psychology, 1971, 55, 5, 399-405.
- Weinstein, M. S. (1969). Achievement motivation and risk preference. Journal of Personality and Social Psychology, 13, 2, 153-172.
- Winakor, G., Canton, B., and Wolins, L. (1980). Perceived fashion risk and self-esteem of males and females. Home Economics Research Journal, 9, 1, 45-46.



| Source of error | df  | Sum of Squares | Mean squares | F     | p    |
|-----------------|-----|----------------|--------------|-------|------|
| Gender          | 1   | 701.2536       | 701.2536     | 11.12 | <.01 |
| Error           | 254 | 16021.2308     | 63.0757      |       |      |

Duncan's multiple range test for gender and financial risk taking\*

| Duncan Grouping | Mean   |
|-----------------|--------|
| A (Male)        | 39.950 |
| B (Female)      | 36.558 |

\*Alpha=.05    df=254    MSE=63.076    Critical range=2.021

**Table 2**  
Analysis of variance for age and financial risk taking

| Source of error | df  | Sum of Squares | Mean squares | F     | p    |
|-----------------|-----|----------------|--------------|-------|------|
| Age             | 2   | 1352.5428      | 676.2714     | 11.38 | <.01 |
| Error           | 244 | 14497.1252     | 59.4144      |       |      |

Duncan's multiple range test for age and financial risk taking\*

Duncan Grouping\*\*

| Age              | Mean   |
|------------------|--------|
| A (18-39)        | 39.875 |
| A (40-59)        | 37.606 |
| B (60 and above) | 33.195 |

\*Alpha=.05 df=244 MSE=59.414 Critical range: age 40-59=2.6213  
age 60 and above=2.756

\*\*Means with same letter are not significantly different

**Table 3**  
Analysis of variance for education level and financial risk taking

| Source of error | df  | Sum of Squares | Mean squares | F   | p    |
|-----------------|-----|----------------|--------------|-----|------|
| Education Level | 2   | 99.3114        | 49.6557      | .76 | >.47 |
| Error           | 253 | 16623.1730     | 65.7042      |     |      |

Duncan's multiple range test for education level and financial risk taking\*

Duncan Grouping\*\*

Mean

A (grade school-high school ) 39.020

A (some college-college degree) 37.393

B (some grad school-grad school degree) 38.000

\*Alpha=.05 df=253 MSE=65.704 Critical range: college/college degree=2.810  
grad school/grad school degree=2.672

\*\*Means with same letter are not significantly different

**Table 4**  
Analysis of variance for income level and financial risk taking

| Source of error | df  | Sum of Squares | Mean squares | F    | p    |
|-----------------|-----|----------------|--------------|------|------|
| Income Level    | 2   | 586.1702       | 293.0851     | 4.70 | <.01 |
| Error           | 254 | 15325.9020     | 62.3004      |      |      |

Duncan's multiple range test for income level and financial risk taking\*

Duncan Grouping\*\*

Mean

A (\$14,999 and below)

39.939

A (\$15,000-\$29,999)

37.827

B (\$30,000 and Above)

36.766

\*Alpha=.05    df=246    MSE=62.3004    Critical range: \$15,000-\$29,999=2.884  
\$30,000 and above=3.032

\*\*Means with same letter are not significantly different

## APPENDIXES

APPENDIX A

INTRODUCTION

## Introduction

In recent times, the study of various aspects of risk and risk taking has served as a topic of continual interest in research designed to determine human behavior. In a recent article in U.S. News and World Report the phenomenon is described as "The Cult of Risk Taking." The article states:

In a nation with a penchant for cults, none is more celebrated today than the cult of the risk taker. . . So intense has the cult become that some high-octane Americans carry their zeal for living on the edge into dangerous, and even legally questionable activities (Skrycki, 1987, p. 60).

In this article, Frank Farley, a University of Wisconsin psychologist states the reason some people push on with risky pursuits that might result in failure while others are content to lead more conventional existences is perhaps rooted in basic personality traits or perhaps even "genetic predisposition" (Skrycki, 1987). Indeed, numerous studies, particularly in the area of psychology, have attempted to use risk preference to explain such aspects of human behavior as achievement motivation (Weinstein, 1969), group versus individual behavior (Rettig, 1966; Vinokur, 1971; Wallach & Kogan, 1965), substance abuse (Carney, 1971) and managerial decision making (Laughhunn, Payne & Crum, 1980; MacCrimmon & Wehrung, 1986). Whatever an individual's risk persuasion, it appears that the degree of risk one is willing to accept, or wishes to avoid, has a profound effect upon various choices in their lives (Barach, 1971; Carney, 1971; Kogan & Wallach, 1964; MacCrimmon & Wehrung, 1986; McKenna, 1984; Vroom & Paul, 1971).

Studies exploring the effect of risk upon decision making fall into three groups (Blaylock, 1985). One group, estimating the level of risk, asks "How much risk is there?" Another, investigating risk attitude, inquires "What is the decision maker's

attitude toward risk?" The third, exploring risk perception, queries "How much risk does the decision maker perceive?"

The majority of studies involving risk and consumer behavior have focused upon perceived risk (Bauer, 1960; Cox, 1967; Dowling, 1986; Fagley & Miller, 1987; Kaplan, Szybillo & Jacoby, 1974; Popielarz, 1967). The concept of perceived risk has been described in general as the amount of risk that consumers discern when considering a purchase. The thesis behind the perceived-risk concept is that all consumers will tend to make risk-minimizing decisions based on their perception of purchase risk. The level of perceived risk is considered to be a function of possible consequences of a purchase and the uncertainty involved. Consequences can be thought of as the costs if a given event occurs. The uncertainty element can be phrased in terms of probabilities that a given consequence will occur (Robertson, Zielinski & Ward, 1984).

Most perceived-risk theory proposes that consumers generally act to minimize the risk involved in the purchasing process. Risk-handling behavior is said to vary among individuals because the amount of risk perceived varies by consumer (Robertson, Zielinski & Ward, 1984). Consumers will use risk reduction strategies according to the amount of risk they individually perceive to be involved in the purchase. The concept of perceived risk has been related to a variety of consumer behavior topics. The notion of the risk reduction process has been repeatedly examined (Dowling, 1986; Peter & Ryan, 1976; Winakor, Canton & Wolins, 1980).

Fewer studies of consumer behavior have comprised the effect of individual risk propensity upon consumer choice. The majority of studies involving risk perception assume an unvarying degree of risk tolerance. They assume rather, that differences occur merely in the amount of risk perceived by the consumer in purchasing processes (Cox, 1967; Popielarz, 1967; Robertson, Zielinski & Ward, 1984), the role of



individual risk propensity in consumer choice cannot be overlooked. Even if the amount of risk perceived among consumers is similar in a given situation, risk reduction behavior may vary because individual risk taking behavior may vary (Kogan & Wallach, 1967; MacCrimmon & Wehrung, 1986; McKenna, 1984). Some consumers may accept, or even seek out, purchases or investments involving a high degree of risk, while others -- who are more risk averse -- may avoid such purchases. The amount of risk perceived by each consumer may be the same and may be referenced similarly; however, to the risk taker, the purchase is acceptable -- to the risk averter, it is not. Just as one person may undertake such risk-filled activity as skydiving while another may avoid such activity due to its high degree of physical risk, one consumer may undertake a risky investment, while another prefers to avoid the risk. Few studies have explored the effect of differing risk preferences upon consumer choice. Those which have touched upon this phenomenon (Barach, 1969; McKenna, 1984) have found risk taking behavior to have a significant effect upon consumer choice behavior.

The most prevalent scale measuring risk propensity appears to be that developed by Kogan and Wallach (1967). This scale is directed toward a narrow sample (subjects with "higher" levels of education) and does not necessarily focus upon choices involved in consumer decision making, the purpose of this study will be to develop an instrument to measure individual risk taking in a general population. Items will focus upon choices inherent in consumer decision making. While a construct for risk taking and its domain will be developed, the instrument will focus on the dimension of financial risk taking. Specific objectives of the study are:

1. To define the domain of financial risk taking propensity as it applies to consumer decision making in the financial domain.
2. To develop a measure of the financial risk taking propensity domain.
3. To test validity and reliability of the financial risk domain measure.

4. To assess the financial risk propensity measure with selected demographic variables to be used in the determination of predictive validity.
5. To make recommendations for further study.

### Definitions

Construct - A concept or theory devised to integrate, in an orderly way, the diverse data on a phenomenon.

Domain - Categories of a construct, each of which reflects what its underlying sets of subjects shares in common (Isaac & Michael, 1984).

Risk - To expose to the chance of loss or of injury. There are three components of risk (1) potential loss, (2) chance of loss, and (3) exposure to loss. In risk, there is possibility of some knowledge of probability of occurrence.

Perceived Risk - The degree and magnitude of risk the consumer believes to be inherent in a consumer choice.

Risk Taking Behavior - The act of accepting, seeking out, or averting situations in which there are desirable goals and chances of loss or injury involving the attainment of these goals. This can also involve choice behavior between more desirable goals with higher chances or magnitudes of loss, and less desirable goals with lower chances or magnitudes of loss (Kogan & Wallach, 1974; MacCrimmon & Wehrung, 1986).

Risk Components - The components involved in risk are: (1) the magnitude of loss, (2) the chance of loss, and (3) exposure to loss. To reduce riskiness, it is necessary to

reduce at least one of these three components. The degree of risk can be thought of as being directly proportional to the chances and size of loss (MacCrimmon & Wehrung, 1986).

**Risk-taking Propensity** - An individual's natural inclination or tendency toward either: (1) seeking out or accepting situations in which there are desirable goals and high chances and magnitudes of potential loss, or (2) avoiding situations in which there are desirable goals and high chances and magnitudes of potential loss. The seven dimensions of risk include financial risk taking, social risk taking, physical risk taking, professional risk taking performance risk taking, opportunity cost risk taking, and time risk taking.

**Risk Takers** - Individuals who accept a high chance of loss and a high magnitude of potential loss in choice behavior and decision making (MacCrimmon & Wehrung, 1986).

**Risk Averters** - Individuals who prefer low chances of loss and low magnitudes of potential loss in choice behavior and decision making (MacCrimmon & Wehrung, 1986).

**Financial Risk** - Chance and magnitude of financial loss, involving investment, budgeting, credit, expenditure and risk of financial loss associated with product purchase (Assael, 1981; MacCrimmon & Wehrung, 1986, 1984; Minkowick, 1964).

Investment Risk - Chance and magnitude of financial loss involved in putting money into business, real estate, stocks, bonds, banking, etc., for the purpose of gaining income or profit.

Budgeting Risk - Chance and magnitude of financial loss involved in scheduling expenses for a certain period according to the estimated or fixed income for that period.

Credit Risk - Chance and magnitude of financial loss involved in taking on installment debt.

Expenditure Risk - Chance and magnitude of financial loss involved in the spending of finances.

Product Purchase Risk - Chance and magnitude of financial loss involved in the buying of goods and services.

Social Risk - Chance of failure to meet the standards and therefore resulting in a loss of acceptance, or failure to gain acceptance of an important reference group. Loss of self-esteem due to repeated failure, changes in familial parent-child relationships and social relationships involve social risk (Assael, 1981; MacCrimmon & Wehrung, 1986; Minkowick, 1964; Robertson, Zielinski & Ward, 1984).

Loss - For this study, loss will refer to relative loss. A particular payoff is a "loss" if it considered worse than some particular reference level of payoff (MacCrimmon & Wehrung, 1986).

Potential Loss - Two main forms of possible, or potential loss are considered: (1) an outcome that will make us worse off than some reference status quo position, or (2) an outcome that is not as good as some other outcome that might have been obtained.

Propensity - A natural inclination or tendency toward a behavior, in this case a tendency toward seeking or accepting risk, and averting risk.

#### Assumptions

For this study, the following assumptions are being made:

1. Personality traits exist as consistent sources of individual difference (Nunnally, 1978).

#### Limitations

The limitations affecting the results of this study include:

1. Because the purpose of this study is instrument construction and validation rather than the study of causative relationships between variables, specific, non-random sampling procedures were utilized in this study. Caution, therefore, should be taken in generalizing relationships between demographic and risk variables for the entire population. The relationship between variables was assessed as part of the development and validation of the construct and its measurement.
2. The geographic location of sampling was confined to Payne County and Tulsa County in Oklahoma.

APPENDIX B  
LITERATURE REVIEW

## Review of Literature

### The Study of Personality and Consumer Behavior

Risk taking propensity has been categorized in previous literature as a personality variable (Kogan & Wallach, 1967; MacCrimmon & Wehrung, 1986). Measures of personality dimensions in relation to consumer behavior have been constructed with varying success (Assael, 1981). Because an understanding of theories describing personality and the effect of individual personality traits upon consumer behavior is important in the construction of effective measurement of risk taking propensity (Zaltman & Wallendorf, 1983), existing personality theory, and some of the past difficulties of personality trait measurement are briefly discussed below.

In 1970, Kollat, Engel and Blackwell stated that many attempts had been made to correlate personality attributes with various phases of consumer behavior, most, however, had found little relationship. They attributed this in part to a faulty conceptualization of personality itself. They cited Allport (1960) who argued that problems existed in the depiction of an individual as a closed system essentially beyond the influence of outside stimuli.

Brody and Cunningham (1968) hypothesized that the difficulty may lie in the manner in which data are analyzed. They suggested that respondents should be reclassified into categories depending upon extent of risk perceived in buying the product. In the re-analysis of earlier data, personality was found to correlate much more highly when respondents were classified in this fashion. In this case, then, personality was used as a moderator variable.

Cohen (1967) attempted to correct some of the deficiencies in personality research in consumer behavior through the construction of a sophisticated scale for measuring a person's interpersonal orientations. Kollat, Engel and Blackwell (1970) praised this work in particular for the careful manner in which Cohen evaluated his

scale, hereby setting an early methodological standard for other researchers to take into consideration.

In a more recent discussion on the subject, Zaltman and Wallendorf (1983) describe the difficulty in finding consistent relationships between consumer behavior and personality as being the result of two problems: 1) Most of the personality measures used in consumer research have been developed by psychologists to be used in clinical practice, therefore such scales have been validated using specific populations that may not be similar to the populations used in consumer research, and 2) There has been a lack of the use of theory in the development of measures.

Zaltman and Wallendorf (1983) point out the while some earlier studies found only a weak relationship between personality difference and purchasing behavior, some more recent research (Horton, 1979; Sciglimpaglia, 1981) has more successfully related personality traits to different aspects of consumer decision making. They state still more promising results have been obtained through the use of a number of personality traits together as a personality profile of consumers and nonconsumers. One such study (Percy, 1976) separated owners and nonowners of light durables and found relatively strong correlations between personality profiles and attitudes for each group, thus suggesting a personality-attitude-behavior linkage.

Assael (1981) states that empirical personality measures have been used in consumer-related research based on three theories: trait theory, social theory, and self-concept theory. A fourth school, the psychoanalytic school is also important though not empirically based. Because trait theory lends itself most readily to empirical study, and has been the basis for previous empirical testing, it serves as a backdrop for this study. Though application of social theory, self-concept theory and psychoanalytic theory will not be used in this study, their importance to personality research involving consumer behavior is noteworthy and important to understand when



developing trait measures. Therefore, these theories should also be included in any discussion of personality measurement.

Trait theory has been the most widely used basis for measuring personality because it is the most empirical. This theory proposes that personality is composed of a set of traits that describe general response dispositions (Assael, 1981). Trait theorists construct personality inventories in which respondents are asked to respond to many items. These items are then factor analyzed and a number of personality dimensions are produced that represent some of the original questions (Assael, 1981; Kassarian, 1971; Robertson, Zielinski & Ward, 1984; Walters, 1978).

Psychoanalytic theory, developed by Sigmund Freud, stresses the unconscious nature of personality. Behavior is related in this theory to the stresses between the ego, id, and superego. The manifestation of these conflicts in childhood determine the adult personality and frequently influence behavior in a manner the adult is not aware of (Assael, 1981; Kassarian, 1971; Robertson, Zielinski & Ward, 1984; Walters, 1978).

Because of the emphasis on unconscious motives and repressed needs, application of Freud's theory results in a nonempirical approach to personality. The use of the depth interview and projective techniques are often called for in such research (Assael, 1981). In social theory, social variables rather than biological drives are most important in personality development. In addition, in this theory, conscious motives are more important than unconscious motives; therefore, behavior is most frequently directed to known needs and wants (Assael, 1981; Kassarian, 1971; Robertson, Zielinski & Ward, 1984).

Karen Horney's theory, which contends that personality is developed as an individual learns to cope with basic anxieties stemming from parent-child relationships has been used in the study of consumer behavior. In her theory, Horney hypothesized three approaches to coping with anxiety: compliance, aggressiveness and

detachment. Cohen utilized social theory in the development of a compliance-aggressiveness-detachment (CAD) scale in one of the few studies relying on social theory to explain consumer behavior (Assael, 1981).

Self-concept theory holds that an individual has a concept of "self" measured on such criteria as happy, careful, dependable, confident, social, etc. and on a concept of the "ideal self". The self-concept measures who consumers think they are; the ideal concept measures who consumers think they would like to be (Assael, 1981; Kassarian, 1971).

Self concept theory has taken two directions in the study of consumer behavior. One direction holds that the discrepancy between the self and the ideal self is a measure of personal satisfaction while a second direction holds that consumers buy on the basis of their self image (either actual or ideal) and that there is congruence between brand image and self-image (Assael, 1981).

Walters (1978) assures that while there have been some difficulties in the use of personality measures to predict consumer behavior, researchers should not shy away from such study. He expresses confidence that as measures and the structure of such research develops and improves, so will its application to the study of consumer decision making.

### The Concept of Risk

MacCrimmon and Wehrung (1984) state that risk is a pervasive part of all actions. While eventual death may be certain, every day we engage in activities -- such as driving to work -- that carry a risk of death. While death is the ultimate risk, economic and social risks can be more oppressive. Seemingly secure jobs may disappear in economic hard times. Seemingly stable marriages may shatter for

enumerable reasons. Certain risks such as natural disasters affect many people, while other risks, such as financial decisions, are more personal. In any case, some degree of risk envelopes any action we take, and thus becomes an important consideration in our decision-making process. Life requires choices; choices require risk. While one can choose to minimize risks, they cannot be avoided completely. Risk is actually one of life's certainties (MacCrimmon & Wehrung, 1986). Not only is it virtually impossible to avoid risk totally, but most individuals seek risks in at least some aspects of their lives. Uncertainty about outcomes of virtually all important activities provides excitement as well as creating anxiety. People engage in such hazardous activities as hang gliding and rappelling, they play the stock market, and they gamble perhaps partly because of the stimulation that accompanies the risk. MacCrimmon and Wehrung (1986) state that success itself increases risks as people discover whether they can handle the new opportunities that come available. Bem (1971) and Kogan and Wallach (1972) state that in considering risk, most people think first of obvious situations involving physical danger, such as sky diving; others might cite gambling situations such as poker or horse racing. It is only after they have mentioned more obvious situations that people are likely to broaden their concept of risk to include common everyday activities such as cigarette smoking or driving a car. Finally, it might occur to some people that doing nothing can itself be a risky decision, for example, most couples do not consider their impending marriages as risk-taking situations, though these are events studied by behaviorists as involving risk (Kogan & Wallach, 1972). Similarly, behavioral scientists have discussed making a medical diagnosis as a decision making task which involves risk and uncertainty; they have analyzed the student taking a multiple-choice test as a decision maker, who must risk guessing at an answer, knowing that a percentage of wrong guesses will be subtracted from his score; and finally, social psychologists and therapists are sensitive to the

risks and individual runs when he ventures to speak up in a group or to substitute a turtleneck for a tie in a social situation where the rules of dress are ambiguous.

The concept of risk can be applied to nearly every human action of which the consequences involve chances of loss. Taking a risk, then, may be viewed as a selection of one alternative or cause of action from among many in which the consequences of that choice could leave the individual in a worse situation than if he had selected otherwise or not at all (Bem, 1971).

MacCrimmon and Wehrung (1986) trace their definition of risk back to that in the Oxford dictionary, which defines the verb "risk" as "to expose to the chance of injury or loss." Thus, it is necessary that there be a potential loss of some amount (using loss as a general expression to include "injury"). Second, there must be a chance of loss, sure loss is not a risk. Third, the notion "to expose" means that the decision maker can take actions that can increase or decrease the magnitude or chance of loss. Therefore, "to risk" implies the availability of a choice. There are two main forms of potential loss: 1) an outcome that will make us worse off than some reference status quo position, or, 2) an outcome that is not as good as some other outcome that might have been obtained.

MacCrimmon and Wehrung (1986) thus contend that there are three components of risk: the magnitude of loss, the chance of loss, and the exposure to loss. To reduce riskiness, it is necessary to reduce at least one of these three components. The degree of risk can be thought of as being directly proportional to the chances and size of loss and to the degree of exposure of the decision maker to the chance of loss.

Similarly, Greene (1971) defines risk as the uncertainty that exists in relation to the occurrence of some loss-causing event. Greene divides risk into two categories: "objective risk", which he defines as the variance of a probability distribution of loss-causing events, and "subjective risk" or risks for which no probability

distribution exists, or, if it does exist, it is neither known nor considered by the risk perceiver.

Kogan and Wallach (1967, 1971), pioneers of psychological analysis involving risk behavior, also define risk taking as behavior in situations where there is a desirable goal and a lack of certainty that it can be attained. They state that the situations may take the form of requiring a choice between more and less desirable goals, with the former having a lower probability of attainment before the latter. A further possible (though, according to Kogan and Wallach, not necessary) characteristic of such situations is the threat of negative consequences for failure, so that the individual at the postdecisional stage might find himself worse off than he was before he made the decision. Therefore, uncertainty combined with the prospect of loss or failure lends risky character to decision situations (Kogan and Wallach, 1967).

In addition, the term "risk" is said to refer to situations whose consequences depend upon outcomes of future events having probabilities. When the knowledge of probabilities is lacking entirely, decisions are then seen as being made under ignorance (Joag, Mowen & Gentry, 1988). Most important decisions, including many consumer purchase decisions, fall somewhere along the continuum between full knowledge of probability and absolute ignorance (Joag, Mowen & Gentry, 1988; Lopes, In Press).

One of the problems of previous risk-related measures has been lack of evidence of a general risk propensity across varied situations (MacCrimmon & Wehrung, 1986). Various studies (Bassler, 1972; Greene, 1963, 1964; Maehr & Videbeck, 1968; Weinstein & Martin, 1969) have also found the same lack of agreement on different measures of risk propensity. Slovic (1964) concluded this might be due to the multidimensionality of risk as well as its subjectivity. Kogan and Wallach (1967) especially stressed the influence of the situation upon risk taking behavior. Because of the influence of consequential type of risk upon behavior, it is important to categorize risks accordingly. Recognizing the need to classify various types of risk,

several authors, including Assael, 1981; MacCrimmon and Wehrung, 1986; Minkowick, 1964; Mowen, 1987; and Robertson, Zielinski and Ward, 1984, have broken the general concept of "risk" into several dimensions. These include the following:

1. **Financial Risk** comprises risk of financial gains and losses. Financial risks can involve investments, budgeting, credit, expenditures, and risk of financial loss associated with product purchase. An additional form of financial risk of particular importance to consumers is the purchase of a product that may not be worth its cost, for example the purchase of new technology for which prices are expected to come down, such as the home computer (Assael, 1981; Jacoby & Kaplan, 1972; MacCrimmon & Wehrung, 1986; Minkowick, 1964; Robertson, Zielinski & Ward, 1984).

2. **Physical Risk** involves the chance of actual physical harm or discomfort. This risk can take many forms including accidents, disease, violence, heredity, diet, exercise, personal habits, etc. Consequences of taking physical risks can range from temporary mild discomfort to permanent disability and even death. Certain products, such as cigarettes, are seen as carrying considerable physical risk (Jacoby & Kaplan, 1972; MacCrimmon & Wehrung, 1986; Minkowick, 1964; Robertson, Zielinski & Ward, 1984).

3. **Social Risk** results from the desire of an individual to meet the standards of an important reference group. Loss of self-esteem due to repeated failure, changes in familial parent-child relationships, and even social dating involves consideration of social risk. In consumer decision making, visible items such as clothing, automobiles and household furnishings are particularly subject to social risk. The purchase of such products as cosmetics and deodorants are subject to social risk due to fear that they may not work in enhancing attractiveness and social acceptability (Assael, 1981;

MacCrimmon & Wehrung, 1986; Minkowick, 1964; Peter & Ryan, 1976; Robertson, Zielinski & Ward, 1984).

4. **Professional Risk** is inherent in decisions affecting the success or failure in one's establishment and advancement of his or her career. Decisions about education, job choice and work performance all involve professional risk (Jacoby & Kaplan, 1972; MacCrimmon & Wehrung, 1986).

5. **Performance Risk** (sometimes called functional risk) is uniquely involved in consumer purchase behavior in that there is some risk of product failure with each product that is purchased. Performance risk tends to be viewed by consumers as greater when the product is technically complex. Products such as cars and computers are often perceived as carrying greater performance risk simply because of the number of complex parts which can misperform (Assael, 1981; Jacoby & Kaplan, 1972; Robertson, Zielinski & Ward, 1984).

6. **Opportunity Cost Risk** occurs in situations in which there is a possibility of losing a possible alternative, preferable opportunity if a certain option is chosen. If a consumer buys a product today, she may miss an opportunity to save money if it goes on sale tomorrow (Zikmund & Scott, 1973).

7. **Time Risk** includes the possible loss of time if a certain option is chosen. If computer "A", which uses complicated software, is chosen, time which could be used otherwise as a resource may be spent trying to comprehend the software (Mowen, 1987).

#### Theories Examining Decision Making Regarding Risk

Numerous theories have been developed examining consumer decision making under risk. While these have generally not involved individual risk propensity, they have been instrumental in explaining the consumer decision making process in as it applies to risk. Some of the major theories describing this phenomenon, including expected

utility theory, prospect theory, theory of decision framing, and information integration theory are reviewed below.

### Expected Utility Theory

Perhaps the major theory used in analyzing decision making under risk has been the expected utility model. The foundations of this theory were developed by Bernoulli (1738), Von Neumann and Morgenstern (1947), and Savage (1954). The expected utility model focuses upon choices among risky prospects whose outcomes may be single or multidimensional (MacCrimmon & Wehrung, 1986; Schoemaker, 1982).

Using a set of axioms a representation theorem is developed that requires the choice of the action having the highest expected utility. The expected utility of the behavior is calculated by multiplying the probability of each uncertain event by the utility of the outcome arising from the event and adding up all these mutually exclusive and exhaustive products. Therefore, the utility of a risky prospect is equal to the expected utility of its outcomes, obtained by weighting the utility of each possible outcome by its probability. When faced with a choice, a rational decision maker will prefer the prospect that offers the highest expected utility (Kahnemann & Tversky, 1979; MacCrimmon & Wehrung, 1986; Schoemaker, 1982).

Though not formally a part of Von Neumann/Morgenstern utility theory, inherent in the expected utility model is the traditional risk-aversion assumption in economics and finance, particularly for losses. This proposes that subjects, when faced with a gain/loss problem, will seek to avoid risk. The concept of risk aversion has been important to expected utility theory. However, Schoemaker (1982) points out that recent studies seriously question this pervasive assumption. He states as an example, John Hershey and Schoemaker found that less than 40 percent of their subjects would pay \$100 to protect themselves against a .01 chance of losing \$10,000. Studies by



Slovic et.al. (1977), Kahnemann and Tversky (1979), and Schoemaker and Kunreuther (1979) support these findings (Schoemaker, 1982).

Utility theory has been criticized (Kahnemann & Tversky, 1979; Fishburn & Kochenberger, 1979). However, as Schoemaker emphasizes, much research on decision making under risk would not have resulted without the existence of expected utility theory in the first place. Therefore, it is likely that today's paradoxes and persistent violations of the theory hold the seed of future normative as well as descriptive models of choice under risk (Schoemaker, 1982).

### Prospect Theory

Kahneman and Tversky (1979) state that while expected utility theory has dominated the analysis of decision making under risk, there exists several classes of choice problems in which preferences systematically violate the axioms of expected utility theory. Because of this, these authors propose an alternative account of choice under risk. The central idea of their theory, labeled "prospect theory" is that when faced with an uncertain prospect an individual works out its overall value with reference to some fixed point, such as where she stands right now in respect of the characteristic. Changes in this reference point can alter the relative values which this individual places upon certain options. Prospect theory then assumes that the decision maker's cognitive processes will edit according to a variety of principles the probability scores used in the adding up process (Earl, 1986; Kahnemann & Tversky, 1979).

In expected utility theory, the utilities of outcomes are weighted by their probabilities. Kahneman and Tversky contend, however, that in certain choice problems, people's preferences systematically violate this principle. They state that people tend to overweight outcomes that are considered certain, relative to outcomes which are merely probable - a phenomenon which they label the "certainty effect". In

a situation where the probabilities of winning are substantial, most people choose the prospect where winning is more probable. In a situation where winning is possible but not probable, most people choose the prospect that offers the larger gain (Kahneman & Tversky, 1979).

When the signs of outcome are reversed so that gains are replaced by losses, the preference between negative prospects appears to be the mirror image of the preference between positive prospects. Thus, the reflection of prospects around 0 reverses the preference order. Kahneman and Tversky (1979) label this pattern the "reflection effect". They emphasize three implications of the reflection effect. First, the reflection effect implies that risk aversion in the positive domain is accompanied by risk seeking in the negative domain. Second, in the positive domain, the certainty effect contributes to a risk averse preference for a sure gain over a larger gain that is merely probable. In the negative domain, the same effect leads to a risk seeking preference for a loss that is merely probable over a smaller loss that is certain. Therefore, the same principle - the overweighting of certainty - favors risk aversion in the domain of gains and risk seeking in the domain of losses. Third, the reflection effect eliminates aversion for uncertainty or variability as an explanation of the certainty effect. It appears that certainty increases the aversiveness of losses as well as the desirability of gains (Kahneman & Tversky, 1979).

Tversky (1972) states that in order to simplify the choice between alternatives, people often disregard components that the alternatives share, and focus on the components that distinguish them, therefore leading to different preferences. Kahneman and Tversky (1979) label this the "isolation effect". Prospect theory distinguishes two phases of the choice process: an early phase of editing and a subsequent phase of evaluation. The function of the editing phase is to organize and reformulate the options so as to simplify subsequent evaluation and choice. The major operations of the editing phase include "coding" in which people code outcomes as gains

or losses relative to some reference point (which usually corresponds to some asset position, "combination", in which prospects are sometimes simplified by combining the probabilities associated with identical outcomes, "segregation", in which a riskless component contained in some prospects is segregated from the risky component, a riskless and "cancellation" which is the discarding of components that are shared by the offered prospects. Following the editing phase, the decision maker is assumed to evaluate each of the edited prospects, and to choose the prospect of highest value (Kahneman & Tversky, 1979).

Mowen (1987) describes this theory both as a model of judgment and a model of choice. He states that as a model of judgment, the theory indicates how people are likely to translate information on the actual value of gains and losses to psychological values of gains and losses. Mowen states that as a model of choice, it proposes that individuals select the option that possesses the greatest psychological value. He states that prospect theory also contributes whether an event is framed as a gain or a loss dramatically influences its interpretation.

### The Framing of Decisions

Tversky and Kahneman (1981) state that while psychological principles that govern the perception of decision problems and the evaluation of probabilities and outcomes produce predictable shifts of preference when the same problem is framed in different ways, reversals of preference are demonstrated in certain choices, particularly those involving monetary outcomes or those pertaining to the loss of human life. They state that in such decision problems the elementary requirements of consistency and coherence that must be satisfied in defining rational choice are systematically violated. Tversky and Kahneman trace these violations to the psychological principles that govern the perception of decision problems and the evaluation of options. Tversky and Kahneman use the term "decision frame" to refer to

the decision-maker's conception of the acts, outcomes and contingencies associated with a particular choice. The frame that a decision-maker adopts is controlled partially by the formulation of the problem and partially by the norms, habits and personal characteristics of the decision maker (Tversky & Kahneman, 1981).

In describing the framing of decision, Tversky and Kahneman state:

It is often possible to frame a given decision problem in more than one way. Alternative frames for a decision problem may be compared to alternative perspectives on a visual scene. Veridical perception requires that the perceived relative height of two neighboring mountains, say, should not reverse with changes of vantage point. Similarly, rational choice requires that the preference between options should not reverse with changes of frame. Because of imperfections of human perception and decision, however, changes of perspective often reverse the relative apparent size of objects and the relative desirability of options (Tversky & Kahneman, 1981, p. 453).

In evaluating common preference patterns, Tversky and Kahneman (1981) found that in the framing of decisions involving identical outcomes, with a risk averse option and a risky option presented, in situations shown as involving gains the risk averse options are often chosen. In situations shown as involving losses, the risk taking options are often chosen. Tversky and Kahneman state that these inconsistencies in choice are a result of the "conjunction of a framing effect with contradictory attitudes toward risks involving gains and losses" (Kahneman & Tversky, 1981, p. 453). Underlying these attitudes are the evaluation of prospects (prospect theory), the framing of acts, of contingencies, and of outcomes. In addition, the characteristic nonlinearities of values and decision weights affect the evaluation process.

Kahneman and Tversky (1981) contend that individuals facing choice problems and who have definite preferences might have a different preference if the same problem is framed in a different way, though these individuals are normally unaware of alternative frames and of the potential effects of such frames on the relative attractiveness of

various options. Individuals would wish that preferences were independent of frame but they are often uncertain as to how to resolve detected inconsistencies.

As an example of the effect of decision frames upon choices involving risk, Kahneman and Tversky asked individuals in one problem that if there was a disease outbreak in the country which was expected to kill 600 people, which option would they choose: program A in which 200 people would be saved, or program B in which there is a 2/3 probability in which no people would be saved. In this problem, in which alternatives are stated as involving gains, the majority choice was risk averse, that is, program A was preferred. In problem two, which offered the same outcomes but stated them in terms of losses, a second group was asked to choose between program C, in which 400 people would die, or program D, in which there is a 1/3 probability that nobody will die, and a 2/3 probability that 600 people would die. In this case, the majority choice was program D, the risk taking option.

In testing the effects of framing upon business decision making, Mowen and Mowen (1986) found that upper-division business students displayed decision biases that were induced by framing that were similar to those found by Tversky and Kahneman (1981) in a consumer context. In a study by Fagley and Miller (1987), in which MBA students responded to a decision problem before and after training in decision theory, no reversal in preference as a result of framing was observed. Responses in the negative framing condition were not risk seeking in this study. The framing of the decision problem did not significantly affect whether or not respondents mentioned risk as a factor in their decisions. In explaining possible explanations for this occurrence, Fagley and Miller point out the difference between subjects used in their study and in the Tversky and Kahneman study. They state that MBA students may represent a more risk averse population, though non-business students used in a portion of their study also failed to show the effects of framing in their decisions. Descriptions of problems differed slightly in this study, though seemingly not to a significant degree. Fagley and

Miller contend, based upon their study, that risk-seeking choices in response to negatively framed problems may be rarer than originally believed, and that further research is needed to clarify the effects of framing upon various populations and problems (Fagley & Miller, 1987).

#### Theory of Information Integration

Anderson and Shanteau (1970) apply a theory of information integration to the process of decision making under risk. They state:

Many judgment tasks require  $S$  to combine or integrate diverse pieces of information into one overall judgment. Within the present theory, each piece of information is characterized by two parameters: a value  $s$ ; and a weight or importance  $w$ . The response is then a weighted sum:

$$R = C + w s$$

In this simple linear model, the response  $R$  is assumed to be on a continuous or numerical scale. The constant  $C$ , which may include response biases, is not considered here. The sum is overall relevant stimuli, the subjective value of each being weighted by its subjective importance. Here, as in many applications, no context effects are assumed. In particular, the value of any piece of information is assumed constant no matter with what other items it is combined (Anderson & Shanteau, 1970, p. 441).

In this way, information integration theory distinguishes scale values and the weight of specific information. It then describes various methods for integrating this information into judgments. The scale value associated with the informational stimulus refers to its location on a dimension of judgment.

In applying this theory to risky decision making, Anderson and Shanteau (1970) use duplex bets which include two component bets, lose and gain. These may be schematized as:

(PL to lose \$L) & (PG to gain \$G)

The outcome of each component bet is determined separately, thus, the lose and gain components are completely independent in the context of information integration theory.

It is crucial to realize that in this theory the information is integrated at the subjective level. However, the subjective values of probability and money probably will not equal their objective values.

Information integration theory differs from utility theory in two ways. While utility theory generally includes a normative element, typically an assumption that a subject acts as though he is maximizing something such as expected utility, information integration theory does not impose any such postulate. Therefore, it can handle "irrational" behavior in which subjects do not make their "best" choice, as in probability learning experiments (Anderson & Shanteau, 1970).

In addition to this, a second, more specific difference arises in the interpretation of the weight parameters. Anderson and Shanteau emphasize that integration theory applies to value judgments generally, whether or not they involve chance elements.

They state:

The weight of an informational stimulus represents its importance in the total evaluation, and this may be large or small for a variety of reasons. In personality impression tasks, e.g. a trait adjective might be very revealing or very informative about the person. Or it might be discounted owing to inconsistency or unreliability of the source. (Anderson and Jacobson, 1965)

In decision making with uncertain information, the weight parameter would reflect the reliability or likelihood of the informational stimulus. But other factors would also affect the weight. A potential loss, e.g., might have greater felt importance than an equivalent gain and individual differences in probability preference (Edwards 1961) and in risk preference (Kogan and Wallach, 1967) could also be operative.

As these examples show, the weight parameter of integration theory is a more general concept than subjective probability. In particular, the weight of an event and

its complement need not sum to one, as is required in the standard normative theories (Anderson and Shanteau, 1970).

Information integration theory provides techniques both for testing the integration model and for scaling the stimulus variables at the level of the individual. In addition, it provides a unified treatment of a wide range of decision-making tasks involving configural or interactive effects (Anderson & Shanteau, 1970).

### Risk Takers and Risk Averters

MacCrimmon and Wehrung (1986) state that clearly everyone, to some extent, recognizes risks, evaluates risks, tries to adjust risks, and chooses among alternatives that differ in riskiness. Casual observation, however, has indicated major differences in the way people react to risky environments and risky situations.

MacCrimmon and Wehrung (1986) also propose that we can expect risk takers and risk averters to act differently with regard to the components of risk (Table 1) summarizes these authors comparison of the risk components that risk takers accept and risk averters require. They contend that a risk taker would accept a higher exposure in the sense of taking sole responsibility, acting with less information, and requiring less control than would a risk averter. The risk taker accepts a higher chance of loss, is willing to operate in unfamiliar situations, would tolerate more uncertainty and would require less information about the chances. Risk takers are willing to play for higher states and would tolerate higher maximum possible losses. They would accept higher variability in payoffs and proceed with less information and less control about possible payoffs (MacCrimmon & Wehrung, 1986).



**TABLE I.**  
**Characteristics of Risk Averters and Risk Takers**

| Components of Risk          | Risk Averter Requires  | Risk Taker Accepts  |
|-----------------------------|--|---|
| Magnitude of Potential Loss | Low maximum loss<br>Low stakes, commitment<br>Low variability in payoffs<br>More information on losses<br>More control over losses                         | Higher maximum loss<br>Higher stakes, commitment<br>Higher variability in payoffs<br>Less information on losses<br>Less control over losses                         |
| Chances of Potential Loss   | Low chance of loss<br>Familiar environment<br>Few uncertain events<br>More information on chances<br>More control over uncertain events<br>Low uncertainty | Higher chance of loss<br>Unfamiliar environment<br>Many uncertain events<br>Less information on chances<br>Less control over uncertain events<br>Higher uncertainty |
| Exposure to Potential Loss  | Low exposure<br>Shared responsibility<br>More information on exposure<br>More control over exposure  | Higher exposure<br>Sole responsibility<br>Less information on exposure<br>Less control over exposure  |
| Other Risk Components       | Control by self<br>Contingency plans<br>Consensus<br>Exit from risky situations  | Control by others<br>No contingency plans<br>Conflict<br>Participation in risky   |

(MacCrimmon and Wehrung, 1986, p. 35)

Risk takers tend to choose riskier alternatives than risk averters. While risk averters tend to overrate risks, risk takers tend to underrate risks. In evaluating risks, risk takers tend to accept the information they have on risky situations at face value. They might even adopt optimistic scenarios under the belief that chance is on their side or that they can control the outcomes. Risk averters tend to look at worst-case scenarios, bias probabilities of loss upward and over-emphasize the possible

losses or their exposure. Risk takers tend to give only cursory attention to modifying risks, but risk averters can be expected to devote considerable effort to trying to reduce risk. Risk averters would be more concerned about tracking how the risky situation develops after their choices so they could take further actions to minimize risks (MacCrimmon & Wehrung, 1986).

MacCrimmon and Wehrung stress the need for care in making characterizations specific to particular situations. There is no a priori reason to believe that a person who takes risks in one situation will necessarily take risks in all situations. A commodity broker might display physical risk aversion while a trapeze artist might be financially risk averse.

Differences in the responses made by individuals to similar risky situations could be caused in part by the individual's personal, financial, or business background. It is often claimed that risk takers are younger and have higher wealth and fewer dependents than risk averters. Social factors may also affect risk behavior. There is an apparent cultural bias in favor of taking risks. Some people may take more risks than they are inclined to because they believe it is socially expected of them. Another social factor is what was labeled in early research as the "risky shift phenomenon" (Rettig, 1966; Vinokur, 1971; Fischer and Burdeny, 1974). In the risky shift, when people who are somewhat inclined to take risks are asked to make a group decision, they collectively tend to shift toward an even greater willingness to take risks. Personal exposure to risk is perceived to be lower in the group decision than in the individual decision (MacCrimmon & Wehrung, 1986).

Several studies have included limited measures of individual risk taking propensity in the analysis of consumer and business decision making. In studying the relationship between personal, economic, and social-psychological characteristics of women and their plans and actions for financial well-being in their older years, McKenna (1984) found that financial risk taking and overall risk taking, along with

several other variables made substantial contribution in explaining investment variation. She found that women in the study who were more oriented toward taking financial risks were more likely to be goal setters. She also found that women may consider themselves risk takers in general but not when finances are concerned. Financial risk was also the best single predictor of information-seeking behavior.

In a comprehensive analysis of individual risk propensity of business executives, MacCrimmon & Wehrung (1986) found that:

1. Executives were more willing to take risks in business situations than in comparable personal situations.
2. Older managers were more averse to risk. Younger managers were more risk taking.
3. Managers with more dependents seemed to be more averse to risk than managers with fewer dependents.
4. Managers with post-graduate training were greater risk takers than were managers with lower levels of education.
5. Managers with more wealth took more risks for some measures of risk. However, they took less risk when other measures were used. Managers with higher incomes took more risks.
6. Chief executive officers and chief operating officers took more risks than did lower level managers.
7. Managers with more seniority were more averse to risk than managers with less seniority.

MacCrimmon & Wehrung state that some of the stereotypes associated with risk taking, such as the relationship between age and risk propensity tended to have a solid basis in fact according to their findings. Others, including the stereotype that higher education inhibits risk taking, proved to be false in their analysis.

Vroom and Pahl (1971), using a subset of the standard Kogan and Wallach (1964) choice-dilemma questionnaire, found a significant relationship between age and measurement of both risk taking and the value placed on risk. In studying managerial risk preferences for below-target returns, Laughhunn, Payne and Crum (1980) state that the results from their study, and those of other similar studies indicate the presence of large individual differences in risky decision behavior. They emphasize the significance of such demographic variables as country of origin, firm type and organizational level in managerial decision making involving risk.

Weinstein (1969) studied the effect of achievement motivation upon individual risk preference. He states that the theory of achievement motivation attempts to account for the determinants of a direction, magnitude, and persistence of human behavior in activities in which the individual believes his/her performance will be evaluated against some standard of acceptance and where the outcome is one of success or failure. It is further expected that achievement will be accompanied by pride in accomplishment; failure by humiliation. The implication of the model is that in certain situations, individuals high or low in resultant motivation to achieve or to avoid failure will behave differently.

In applying achievement motivation as a moderator variable of individual risk preference, Weinstein (1970) hypothesized that individuals whose resultant achievement motivation is positive would prefer intermediate or 50-50 risks to risks having more extreme probabilities, while in individual with an opposite motive pattern would avoid intermediate risks in favor of extreme ones. A test of this hypothesis however, provided little evidence of convergence among measures of either achievement motivation or risk preference. Weinstein (1970) noted difficulty with measures used to identify these constructs, however, and pointed out a need for further research and stronger development of measures.

In reviewing the few articles that have touched upon individual difference in risk taking, there is an apparent significance in differences in risk taking and risk averse behavior, with several variables being found significant in the explanation of this difference. This also seems to exist the consumer behavior studies touching on individual risk taking behavior. The author believes that the studies which have been done concerning this topic indicate a strong need for further investigation and for the development of measures.

APPENDIX C

METHODOLOGY

## METHODOLOGY

The objectives of this study include the development of a construct of risk taking propensity as it applies to consumer decision making, including definition of the domain of the construct and specification of the dimensions of the construct. They also include the development and validation of a scale by which the dimension of financial risk taking propensity may be measured. Additionally, a scale measuring social risk will also be developed as further means of validating the financial risk scale.

### Type of Research

This study utilizes both qualitative and quantitative methods. The initial portion of instrument development utilizes focus group research, a qualitative form of study. Qualitative research is defined by its use of in-depth methods of interviewing or data gathering, as well as the absence of numerical measurement and statistical analysis. It is often used as a precursor to more quantitative methods of study (Calder, 1977). Testing of the construct and instrument is quantitative in that it involved use of scientific data collection methods and empirical analysis. Quantitative research uses measurement which consists of rules for assigning numbers to objects so as to represent quantities of attributes. Quantification addresses the degree to which an attribute is present in the object (Nunnally, 1978). The study comprises construct definition and testing, therefore, it is developmental in nature.

### The Construct

Peter (1981) describes a construct as a term designed for a specific scientific purpose. It is generally used to organize knowledge and direct research in an attempt to

describe or explain an aspect of nature. The nature of a construct specifies what empirical relationships are worth investigating and determines whether empirical results support or invalidate a measure. Jessor and Howard (1957) emphasize that the theory or properties relating to the construct should determine the nature of the test measuring the construct, as well as the nature of experiments establishing the construct validity of the test.

According to Cronbach and Meehl (1955), a construct has three characteristics: 1) it is a postulated attribute assumed to be reflected in test performances. 2) It has predictive properties. 3) The meaning of a construct is given by the laws in which it occurs with the result that clarity of knowledge of the construct is a positive function of the completeness of that set of laws. A construct is the attribute about which statements are made in interpreting a test within test validation.

Churchill (1979) provides a framework for the development and measure of constructs, emphasizing the development of measures which have desirable reliability and validity properties. This framework shall serve as a guide for the progression of this study.

The first step in developing the instrument was to specify the domain of the construct, i.e., risk taking propensity in consumer decision making. This was done through an extensive review of previous literature and the conceptualization and development of the construct definition.

The construct definition is as follows:

Risk Taking Propensity - An individual's natural inclination or tendency toward either: (1) seeking out or accepting situations where there is a desirable goal and a high chance and magnitude of potential loss, or, (2) avoiding situations where there is a desirable goal and a high chance or magnitude of potential loss.



In consumer choice, seven dimensions of risk taking propensity are identified (Assael, 1981; Jacoby & Kaplan, 1972; MacCrimmon & Wehrung, 1986; Minkowick, 1964; Mowen, 1987; Robertson, Zielinski and Ward, 1984):

1. Financial Risk Taking - Behavior in situations where there is a risk of financial gain or loss. Financial risk can involve investment, budgeting, gambling, credit, expenditures, and risk of financial loss associated with product purchase.
2. Social Risk Taking - Behavior in situations where there is a risk of failure to meet the standards and therefore gain and maintain acceptance of an important reference group. Potential loss of self-esteem due to repeated failure, and changes in familial parent-child relationships and social relationships are involved in social risk.
3. Physical Risk Taking - Behavior in situations which involve the chance of actual physical harm or discomfort. This risk can take many forms including accidents, disease, violence, heredity, diet, exercise, personal habits, etc. Consequences of taking physical risks can range from temporary mild discomfort to permanent disability and even death.
4. Professional Risk Taking - Behavior in situations where risk is inherent in decisions affecting the success or failure in one's establishment and advancement of his or her career. Decisions about education, job choice and work performance all involve professional risk.
5. Performance Risk Taking - Behavior in situations where there is risk of product failure with a certain product that is purchased.
6. Opportunity Cost Risk Taking - Behavior in situations where there is a risk of losing a possible alternative opportunity if a certain option is chosen.
7. Time Risk Taking - Behavior in situations where there is a risk of a loss of time as a resource if a certain option is chosen.

### The Development of Items

The second step in the development of the measure was the generation of items which capture the financial and social dimensions of the domain as specified. The emphasis at this stage was to develop a set of items which draw out all aspect of the financial and social risk propensity dimensions.

Jessor and Hammond (1957) state that test items intended to indicate a construct should be selected by rational rather than intuitive means. Therefore an item should be scrutinized for its logical relationship to the construct and grounds for choice of an item should be explicit and public.

Greenbaum (1988), Fern (1982), Cox, Higginbotham and Burton (1976), and Calder (1977) suggest that focus groups can be used to generate or select ideas and hypotheses and to aid in the identification and pilot testing of items that will later be scientifically tested through larger sample surveys. Calder labels this type of focus group research "exploratory". He states:

When focus groups are conducted in anticipation of stimulate the thinking of researchers they represent an explicit attempt to use everyday thought to generate or operationalize second-degree (sic., scientific) constructs and scientific hypotheses. Though the subject of exploratory qualitative research is everyday knowledge, the knowledge desired is best described as prescientific. The rationale is that considering a problem in terms of everyday explanation will somehow facilitate a subsequent scientific approach (Calder, 1977, p. 356).

Scribner (1987) states that the process for a focus group session involves bringing together eight to ten people for a period of one to two hours to discuss specified topics. In the session, a skilled moderator, using a prepared outline, stimulates discussion that will elicit relevant information. By using the focus group, it is thought that the group setting encourages various individual opinions to be considered and expanded in group discussion. In this way, it is possible for new ideas to develop, for the strength of ideas

to be pre-tested and for existing ideas to be expanded (Greenbaum, 1988; Fern, 1982; Calder, 1977).

Fern (1982) suggests that groups consisting of eight members be used for optimal idea generation. Eight member groups tend to generate more ideas than groups with fewer members (Greenbaum, 1988; Fern, 1982) while groups with larger numbers of participants become more difficult to manage (Greenbaum, 1988). Members should be strangers to, not acquaintances of, the moderator (Fern, 1982). According to Calder (1977) sample generalizability is not necessary in exploratory focus group study because in such qualitative research it is difficult to specify what such generalization to the study's universe will mean in the context of idea generation. He states:

Sample generalizability is a property only of subsequent quantitative research. It is misleading even to speak about the generalizability of exploratory focus groups (Calder, 1977, p. 361).

The purpose of the moderator in focus group research is to focus the discussion on the relative subject area in a nondirective manner. The moderator's overall mission is to bring forth inputs from the focus group that will achieve the objectives of the group session established by the researcher (Greenbaum, 1988). The aim of interviewing techniques should be to make participants comfortable and to encourage interaction (Calder, 1977; Cox, Higginbotham and Burton, 1976). In using such groups in construct development and scale item generation, while interaction between the moderator and participants is not always important, a scientific researcher should moderate the groups (Calder, 1977). Scribner (1987) states that in most cases, the moderator should be the author of the research report. In exploratory focus group research any conclusions made in the report should be based upon the analyst's own reasoning (Calder, 1977).

For this study, three focus groups consisting of eight subjects each were conducted. Subjects for the focus groups were Payne County Cooperative Extension Homemakers.

Each group session lasted approximately two hours. Objectives of the focus group sessions included:

1. The generation of ideas to be used in the development of scale items.
2. The provision of ideas possibly leading to clarification of the risk taking propensity construct as well as the financial risk taking and social risk taking dimensions.
3. The provision of qualitative "pre-pilot" testing of previously developed items (items drawn out through literature review and the author's insight).

The author of this study served as moderator of the focus group sessions. An outline, consisting of questions comprising aspects of risk taking propensity, financial risk and social risk was used as a guideline for direction of discussion. Each session was audiotaped for review. After the sessions, the author constructed a research report of the findings. While information drawn from the focus groups was the preliminary means of item generation, information drawn from the literature review, as well as from the insight of the author was also considered in the development of scale items.

### The Instrument

Generally the method most frequently used in personality measurement is printed tests in which individuals are required to describe themselves. Such self-inventories can include various types of rating scales and rating methods (Nunnally, 1978). For this study, the initial instrument consisted of items comprising choices involving strong degrees of financial risk and items comprising choices involving strong degrees of social risk. For purposes of determining discriminant validity two established trait measures were included in the instrument (Campbell and Fiske, 1959; Peter, 1981). Burnett's (1988) Guilt Scale was also included to aid in the

determination of discriminant validity. This scale had an overall  $r$  of .83, indicating a strong degree of reliability (Burnett, 1988). Crowne and Marlow's (1964) Social Desirability Scale was also included to attempt to determine the effects of social desirability upon response in this study. This scale was shown to have an  $r$  of .88, indicating internal consistent reliability. In measuring financial risk propensity, a five-point Likert scale was utilized. Through the instrument, respondents indicated how likely they would be to take the risk involved. Items were presented in terms of gains to lessen the possible effects of differing decision frames (Tversky and Kahneman, 1981). Items comprising demographic variables, including age, gender, income level, education level and occupation were also be included. Title of occupation variables were grouped into categories according to census titles used to classify occupations by Schmidt and Strauss. They include:

|              |   |
|--------------|---|
| Professional | Professional, technical and kindred workers, managers, officials and proprietors except farm. |
| White Collar | Clerical and kindred workers  |
| Craft        | Craftsmen, foremen and kindred workers, farm managers and farmers                             |
| Blue Collar  | Operatives and kindred workers, laborers, except farm and mine                                |
| Menial       | Private household service workers, except laborers and foremen                                |

A sixth category, homemaker was added to describe the sample occupational distribution on current job. A seventh category includes those listing no occupational title due to retirement.

In addition to the scale portion of the instrument, respondents were presented with an choice dilemma section involving financial investment risk (T.Rowe Price, 1989). This was used in the determination of predictive validity. In addition, results

of this test were compared with demographic data for a preliminary indication of the relationship between demographic data and financial risk taking behavior.

Coefficient alpha was run to determine scale reliability. A factor analysis was run to examine the various factors involved in the construct, further enhancing scale reliability. Correlations between the financial risk taking scale and Burnett's guilt scale, as well as the risk scale and Crowne and Marlow's social responsibility were run to determine discriminant validity. In order to determine predictive validity, comparisons of across subject correlations between the consumer financial risk taking scale and T. Rowe Price's (1989) risk tolerance dilemma response, including comparisons involving age and gender categories and risk categories of the consumer financial risk taking scale, with age and gender categories and T. Rowe Price's (1989) risk tolerance choice dilemma response. To provide indication of possible relationships between demographic variables and risk response, one way analyses of variance (ANOVA) and Duncan's multiple range tests were used. The initial pool of items was pilot tested using 15 Stillwater residents as subjects. This data was used in the initial, prescientific evaluation of scale item content.

#### Sampling Procedure

The population chosen for this study was males and females age 18 and above. A sample of the population was taken from church congregations in Tulsa County and Payne County and Oklahoma County. A minimum of three churches was used in the sampling process. Respondents were chosen until a total sample of 257 was reached. Sampling was done with replacement, that is, if a subject was qualified but refused to participate, he or she was replaced with another subject. The questionnaire was administered to and collected from respondents after church meetings. After the first sampling,

comparisons of the sample's demographic data was made to census demographic data to assess the representativeness of the sample.

### Data Analysis

#### Reliability

Cronbach (1951) states that research based upon measurement must be concerned with the reliability of measurement, that is, the accuracy or dependability of the measure. A measure is considered reliable "to the extent that independent but comparable measures of the same trait or construct of a given object agree" (Churchill, 1979, p. 65). A reliability coefficient is used to demonstrate whether the creator of the test was correct in expected the collection of items to yield interpretable statements about individual differences (Cronbach, 1951).

Churchill (1979) states that coefficient alpha absolutely should be the first measure one calculates to assess the quality of the instrument. He stresses that it has great meaning because the square root of coefficient alpha is the estimated correlation of the k-item test with errorless true scores (Nunnally, 1978). According to Churchill, "thus, a low coefficient alpha indicates the sample of items performs poorly in capturing the construct which motivated the measure. Conversely, a large alpha indicates that the k-item test correlates well with true scores" (Churchill, 1979, p. 68). Therefore, alpha attempts to determine the proportion systematic variance in the measurement scale. It basically correlates scores obtained from a scale with scores from some form of replication (Peter, 1979). By using coefficient alpha, it is possible to determine the mean reliability coefficient for all possible ways of splitting a set of items in half (Peter, 1979). For these reasons, coefficient alpha was calculated to assess reliability. In later stages of analysis, factor analysis was used to confirm whether the number of dimensions of the construct conceptualized can be verified empirically (Churchill, 1979). Items which did not factor were removed from the scale. The final

questionnaire consisted of approximately 16 items comprising financial risk.

### Validity

Nunnally (1978) states that once a model has been chosen for the construction of an instrument of measure, and once the instrument has been constructed, it becomes necessary to inquire whether the instrument is of scientific use. This is referred to as determining the validity of the instrument. A measure can be considered valid when "the differences in observed scores reflect true differences on the characteristic one is attempting to measure and nothing else" (Churchill, 1979, p. 65). In proposing a realistic definition of construct validity Peter (1981) states:

.....it is the degree to which a measure assesses the construct it is purported to assess. In this sense a measure is construct valid (1) to the degree that it assesses the magnitude and direction of a representative sample of the characteristics of the construct and (2) to the degree that the measure is not contaminated with elements from the domain of other constructs or error (Peter, 1981, p. 134)

Cronbach and Meehl (1955) state that construct validation occurs when the investigator believes that the instrument reflects a particular construct to which are attached certain meanings. It is established by showing that the measure is in agreement with other measures of the same construct which involve maximally different methods, i.e., convergent validity, and that the measure does not correlate very highly with measures of other constructs, i.e., discriminant validity (Campbell and Fiske, 1976). Construct validity is inferred if the variance of the measure performs as substantive and as theory postulates they should perform (Peter, 1981).

There are several types of validity with which the researcher should be concerned in the development of measures. *Content validity* is established by showing that test items are a sample of the universe in which the investigator holds his interest. Content



validity is generally established deductively, by defining a universe of items and them through a systematic sampling within the universe (Cronbach and Meehl, 1955).

*Convergent validity* is based upon the correlation between responses which are obtained by very different methods of measurement of the same construct (Peter, 1981). *Discriminant validity* occurs when the correlations between measures designed to capture the same construct are greater than correlations involving those measures and other constructs (Campbell and Fiske, 1959).

In experimental study, *predictive validity* consists of the correlation of scores on a predictor test with scores on a criterion variable. The amount of validity occurring is indicated by the size of the correlation (Nunnally, 1978).

Perhaps the most noted method of determining construct validity has been the multitrait-multimethod matrix in which a minimum of two independent traits and two independent methods of measurement are used. Such testing results in a matrix which presents all of the intercorrelations resulting when each of several traits is measured by each of several methods (Campbell and Fiske, 1959; Peter, 1981)

Several significant problems have been noted concerning the use of the multitrait-multimethod matrix, however (Heeler and Ray, 1972; Peter, 1981). It is very difficult to develop and utilize the necessary "maximally different" methods and to avoid shared method and method-trait variance (Peter, 1981). If measures are not maximally different convergent validities will be spuriously high due to method-variance overlap. Such difficulties impose serious limitations on the use of this method in many studies (Heeler and Ray, 1972).

Because of the serious difficulties involved in the use of methods to determine convergent validity, and because of limited resource availability in this research, convergent validity will not be determined in this study, but will be encouraged in future related validation efforts. This study will then focus upon determining content validity and discriminant validity..

Content validity will be determined through an evaluation of the initial instrument by a panel of experts, as well as a qualitative evaluation of data collected in the pilot study. The determination of content validity will serve as a precursor to the quantitative validation process.

Discriminant validity will be determined through a comparison of correlations between the consumer financial risk taking scale and Burnett's consumer guilt scale, as well as the risk scale and Crowne and Marlow's social responsibility scale. Possible relationships between between risk taking or risk averting behavior, and the demographic variables gender, age, income level and education level will also be studied to aid in future research. After the scale has been developed and tested, conclusions will be drawn and recommendations for further study and use of the scale will be discussed.

**APPENDIX D**

**THE INSTRUMENT**

## CONSUMER DECISION MAKING



DEPARTMENT OF CONSUMER STUDIES  
OKLAHOMA STATE UNIVERSITY  
447 HOME ECONOMICS WEST  
STILLWATER, OK 74078  
PHONE: (405) 744-5048

This questionnaire is designed to identify factors that influence consumer decision making. It will take approximately 20 minutes of your time. We want to know what factors affect the consumer decisions that people make. The questionnaire asks specific questions about traits affecting consumer decisions. There are no right or wrong answers. The information you give will be kept absolutely confidential.

*Thank you for your cooperation.*

**FINANCIAL DECISIONS:** Statements are listed concerning financial risk. Please indicate your agreement or disagreement by circling the number corresponding to your choice.

|   | Strongly<br>Agree | Agree | Neutral | Disagree | Strongly<br>Disagree |
|---|-------------------|-------|---------|----------|----------------------|
| 1. If I had money to invest, I would invest in a low-risk money market fund.  | 1                 | 2     | 3       | 4        | 5                    |
| 2. I like to budget so that I have a little extra money at the end of the month "just in case."   | 1                 | 2     | 3       | 4        | 5                    |
| 3. In general, I am a financial risk taker.   | 1                 | 2     | 3       | 4        | 5                    |
| 4. I would not buy a house in which my monthly house payments would be larger than 1/4 of my monthly income.                            | 1                 | 2     | 3       | 4        | 5                    |
| 5. I would be willing to invest money in a new business a friend was starting.  | 1                 | 2     | 3       | 4        | 5                    |
| 6. In general, I prefer to avoid financial risk.  | 1                 | 2     | 3       | 4        | 5                    |
| 7. I have been putting off having a will made.  | 1                 | 2     | 3       | 4        | 5                    |
| 8. I avoid running up credit card debt.   | 1                 | 2     | 3       | 4        | 5                    |
| 9. I keep a close eye on my finances.   | 1                 | 2     | 3       | 4        | 5                    |
| 10. I would rather have a job I liked only somewhat that offered good job security than one I liked a lot but that was not very secure. | 1                 | 2     | 3       | 4        | 5                    |
| 11. I would buy a television whose features I really liked but whose performance record I hadn't heard much about.                      | 1                 | 2     | 3       | 4        | 5                    |
| 12. I would be willing to take a job I loved but that offered few benefits.   | 1                 | 2     | 3       | 4        | 5                    |
| 13. If I were buying a VCR, I would choose one with the best warranty over one with a special feature I liked.                          | 1                 | 2     | 3       | 4        | 5                    |
| 14. I would be willing to join a co-worker in starting a new company if I was interested in the idea.                                   | 1                 | 2     | 3       | 4        | 5                    |

|   | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|---|----------------|-------|---------|----------|-------------------|
| 15. If my company didn't offer health insurance, I would buy private insurance.   | 1              | 2     | 3       | 4        | 5                 |
| 16. I try to find out as much as I can about a product before I buy it.   | 1              | 2     | 3       | 4        | 5                 |
| 17. If I had extra money to invest, I would buy stock in a new company I liked.   | 1              | 2     | 3       | 4        | 5                 |
| 18. It is better to be safe and have a moderate income than to take financial risks to make a high income.                    | 1              | 2     | 3       | 4        | 5                 |
| 19. I would be willing to go heavily into debt to buy a car I really wanted.  | 1              | 2     | 3       | 4        | 5                 |
| 20. I would be willing to use money budgeted for necessities to buy a luxury item I wanted.                                   | 1              | 2     | 3       | 4        | 5                 |
| 21. If I were going to college, I would pursue a degree in a field I loved but that was very competitive.                     | 1              | 2     | 3       | 4        | 5                 |
| 22. If my budget were tight, I would postpone buying comprehensive car insurance.   | 1              | 2     | 3       | 4        | 5                 |
| 23. I would not take early retirement, even if I wanted to, if it meant risking future financial security.                    | 1              | 2     | 3       | 4        | 5                 |
| 24. I am careful not to spend too much on items I really don't need so that I make sure I have money for things I might need. | 1              | 2     | 3       | 4        | 5                 |
| 25. I buy whatever I can by cash rather than credit.  | 1              | 2     | 3       | 4        | 5                 |
| 26. If I had a child who wanted to start a restaurant but needed a co-signer for a loan, I would co-sign the loan.            | 1              | 2     | 3       | 4        | 5                 |
| 27. I would put money in an uninsured savings and loan that offered a very high rate of interest.                             | 1              | 2     | 3       | 4        | 5                 |
| 28. I keep my checkbook balance up-to-date so I know exactly how much money I have in it.                                     | 1              | 2     | 3       | 4        | 5                 |

A description of a situation that is likely to occur in everyday life is listed. Assume you are the person in the situation. Read the situation and circle the letter for your choice.

You have a steady job paying \$25,000 a year and are married with two children. You can easily afford life's necessities but few of its luxuries. You have recently inherited \$10,000. Choose one of four investment opportunities. Circle your response.

I would:

- A. Put the money in an insured bank in a savings account that paid a sure \$600 a year with no chance of losing the money.
- B. Invest in a mutual fund that paid \$1,200 a year but in which there was a ten percent chance of losing \$2,000.
- C. Invest in a stock in which there is a 50 percent chance of earning \$5,000 a year but a 50 percent chance of losing one-half of the original investment.
- D. Invest in a new business in which there is a 25 percent chance of doubling the investment (earning \$10,000) a year but a 75 percent chance of losing the entire investment.

If you won \$50,000, what would you do with the money?

---



---



---



---



---

Please mark one response for each of the following questions.

1. You're the winner on a TV game show. Which prize would you choose?
  - \$2,000 in cash
  - A 50% chance to win \$4,000
  - A 20% chance to win \$10,000
  - A 2% chance to win \$100,000
  
2. You're down \$500 in a poker game. How much more would you be willing to put up to win the \$500 back?
  - More than \$500
  - \$500
  - \$250
  - \$100
  - Nothing - you'll cut your losses now
  
3. A month after you invest in a stock, it suddenly goes up 15%. With no further information, what would you do?
  - Hold it, hoping for further gains
  - Sell it and take your gains
  - Buy more - it will probably go higher
  
4. Your investment suddenly goes down 15% one month after you invest. Its fundamentals still look good. What would you do?
  - Buy more. If it looked good at the original price, it looks even better now
  - Hold on to it and wait for it to come back
  - Sell it to avoid losing even more
  
5. You're a key employee in a startup company. You can choose one of two ways to take your year-end bonus. Which would you pick?
  - \$1,500 in cash
  - Company stock options that could bring you \$15,000 next year if the company succeeds, but will be worthless if it fails

**SOCIAL RESPONSE:** After each statement indicate your agreement or disagreement by circling the number of your choice.

- |  | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|--|----------------|-------|---------|----------|-------------------|
| 1. I would publicly voice an opinion that was important to me even if friends might reject me because of it.             | 1              | 2     | 3       | 4        | 5                 |
| 2. I am often influenced by ads that say that buying a certain product will make me more popular.                        | 1              | 2     | 3       | 4        | 5                 |
| 3. When I am around friends, I try to behave in a way that is acceptable to them.  | 1              | 2     | 3       | 4        | 5                 |
| 4. I would wear a certain type of clothing I like, even though it was very much out of style.                            | 1              | 2     | 3       | 4        | 5                 |
| 5. I try to wear clothing that is similar in style to that my friends wear.  | 1              | 2     | 3       | 4        | 5                 |
| 6. I prefer to avoid "going against the crowd."  | 1              | 2     | 3       | 4        | 5                 |
| 7. If my friends all voted Republican and I voted Democrat, I would let them know this, even though it might upset them. | 1              | 2     | 3       | 4        | 5                 |
| 8. I would not marry someone my family did not approve of.   | 1              | 2     | 3       | 4        | 5                 |
| 9. I would buy a product simply because my friends were using it.  | 1              | 2     | 3       | 4        | 5                 |
| 10. If friends were telling jokes I found offensive, I would let them know how I felt.                                   | 1              | 2     | 3       | 4        | 5                 |
| 11. I make sure I drive a car similar to the ones my friends drive.  | 1              | 2     | 3       | 4        | 5                 |
| 12. I would pursue a career I enjoyed, even if my family disapproved highly of my choice.                                | 1              | 2     | 3       | 4        | 5                 |

|   | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|---|----------------|-------|---------|----------|-------------------|
| 13. I pay a lot of attention to the media to find out what is in style before I shop for clothes.   | 1              | 2     | 3       | 4        | 5                 |
| 14. I would participate in a sports activity I didn't enjoy if all my friends were doing it.  | 1              | 2     | 3       | 4        | 5                 |
| 15. I am concerned with whether others find my appearance acceptable.   | 1              | 2     | 3       | 4        | 5                 |
| 16. I would stop a habit if it was seen as socially unacceptable.   | 1              | 2     | 3       | 4        | 5                 |
| 17. If I were in love with someone of another race, I would marry him/her even though it might result in being rejected by family and friends.    | 1              | 2     | 3       | 4        | 5                 |
| 18. I would not marry someone who was much younger or older than I if it were viewed by family and friends as socially unacceptable.              | 1              | 2     | 3       | 4        | 5                 |
| 19. If I lost my job, I would keep it a secret from people who might look down upon me because of it.   | 1              | 2     | 3       | 4        | 5                 |
| 20. If I saw a co-worker stealing money from the company, I would let the boss know, even though it might mean I would be rejected by co-workers. | 1              | 2     | 3       | 4        | 5                 |
| 21. If I were having a party and preferred that guests not smoke, I would tell them even though it might displease them.                          | 1              | 2     | 3       | 4        | 5                 |
| 22. I would not join a religious organization I believed in if it meant my family might reject me.  | 1              | 2     | 3       | 4        | 5                 |

CONSUMER CHOICE: Indicate how strongly you agree with each statement by circling its corresponding number.

|  | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|--|----------------|-------|---------|----------|-------------------|
| 1. I sometimes feel guilty if I purchase a product I don't really need.                              | 1              | 2     | 3       | 4        | 5                 |
| 2. I feel guilty for not managing my finances better.  | 1              | 2     | 3       | 4        | 5                 |
| 3. I do not feel bad about making purchases that are viewed by some people as extravagant.           | 1              | 2     | 3       | 4        | 5                 |
| 4. I do not regret making purchases that I am unable to logically justify.                           | 1              | 2     | 3       | 4        | 5                 |
| 5. I only buy luxury products when I feel that I have earned them.                                   | 1              | 2     | 3       | 4        | 5                 |
| 6. In some instances, I have felt like returning a product that I didn't need because I felt guilty. | 1              | 2     | 3       | 4        | 5                 |
| 7. I feel guilty for not saving more money.  | 1              | 2     | 3       | 4        | 5                 |
| 8. I do not feel guilty when I make impulse purchases.   | 1              | 2     | 3       | 4        | 5                 |
| 9. Unless I shop around for the best buy, I feel guilty.   | 1              | 2     | 3       | 4        | 5                 |
| 10. I feel bad about myself if I eat things that are not healthy.                                    | 1              | 2     | 3       | 4        | 5                 |
| 11. I am disappointed in myself when I do not exercise regularly.                                    | 1              | 2     | 3       | 4        | 5                 |
| 12. I feel guilty when I eat too many foods rich in cholesterol.                                     | 1              | 2     | 3       | 4        | 5                 |
| 13. I feel guilty if I do not have a yearly physical examination.                                    | 1              | 2     | 3       | 4        | 5                 |
| 14. I am disappointed in myself when I overeat.  | 1              | 2     | 3       | 4        | 5                 |
| 15. I feel disappointed in myself when I eat junk food.  | 1              | 2     | 3       | 4        | 5                 |



|  | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|--|----------------|-------|---------|----------|-------------------|
| 16. I will not buy a product if it is against my religious beliefs.  | 1              | 2     | 3       | 4        | 5                 |
| 17. I will not buy a product if I believe it is morally wrong.   | 1              | 2     | 3       | 4        | 5                 |
| 18. If I were to buy a product that is in conflict with my religious beliefs, I would not feel so bad.     | 1              | 2     | 3       | 4        | 5                 |
| 19. I feel guilty if I purchase sexually explicit products.  | 1              | 2     | 3       | 4        | 5                 |
| 20. Moral issues do not influence my purchase decisions.   | 1              | 2     | 3       | 4        | 5                 |
| 21. I would not take drugs because I've been taught that it is wrong.                                      | 1              | 2     | 3       | 4        | 5                 |
| 22. If I did not buy insurance to provide financial support for my family, I would feel guilty.            | 1              | 2     | 3       | 4        | 5                 |
| 23. It bothers me if I fail to contribute to charities.  | 1              | 2     | 3       | 4        | 5                 |
| 24. If I went on vacation, I would feel bad if I didn't bring back something for a friend.                 | 1              | 2     | 3       | 4        | 5                 |
| 25. I would not feel guilty if someone gave me a Christmas present and I had not given them one in return. | 1              | 2     | 3       | 4        | 5                 |
| 26. I feel that I have a responsibility to contribute time to help those less fortunate than me.           | 1              | 2     | 3       | 4        | 5                 |
| 27. I regret not being able to spend more time with loved ones.  | 1              | 2     | 3       | 4        | 5                 |
| 28. I feel guilty if I fail to help those in need by giving my time to them.                               | 1              | 2     | 3       | 4        | 5                 |
| 29. It is my social responsibility to support organizations that seek to conserve the environment.         | 1              | 2     | 3       | 4        | 5                 |
| 30. I feel guilty if I do not buy American products.   | 1              | 2     | 3       | 4        | 5                 |
| 31. I feel guilty if I violate a posted speed limit.   | 1              | 2     | 3       | 4        | 5                 |

**SOCIAL INTERACTION:** Read each item and decide whether the statement is true or false. Circle T for True and F for False.

|  |   |   |
|--|---|---|
| 1. Before voting I thoroughly investigate the qualifications of all the candidates.                                  | T | F |
| 2. I never hesitate to go out of my way to help someone in trouble.  | T | F |
| 3. It is sometimes hard for me to go on with my work if I am not encouraged.   | T | F |
| 4. I have never intensely disliked anyone.   | T | F |
| 5. On occasion I have had doubts about my ability to succeed in life.  | T | F |
| 6. I sometimes feel resentful when I don't get my way.   | T | F |
| 7. I am always careful about my manner of dress.   | T | F |
| 8. My table manners at home are as good as when I eat out in a restaurant.   | T | F |
| 9. If I could get into a movie without paying for it and be sure I was not seen, I would probably do it.             | T | F |
| 10. On a few occasions, I have given up doing something because I thought too little of my ability.                  | T | F |
| 11. I like to gossip at times.   | T | F |
| 12. There have been times when I felt like rebelling against people in authority even though I knew they were right. | T | F |
| 13. No matter who I'm talking to, I'm always a good listener.  | T | F |
| 14. I can remember "playing sick" to get out of something.   | T | F |
| 15. There have been occasions when I took advantage of someone.  | T | F |
| 16. I'm always willing to admit it when I make a mistake.  | T | F |
| 17. I always try to practice what I preach.  | T | F |
| 18. I don't find it particularly difficult to get along with loud mouthed, obnoxious people.                         | T | F |

- |   |   |   |
|---|---|---|
| 19. I sometimes try to get even, rather than forgive and forget.                    | T | F |
| 20. When I don't know something I don't at all mind admitting it.                   | T | F |
| 21. I am always courteous, even to people who are disagreeable.                     | T | F |
| 22. At times I have really insisted on having things my own way.                    | T | F |
| 23. There have been occasions when I felt like smashing things.                     | T | F |
| 24. I would never think of letting someone else be punished for my wrongdoings.     | T | F |
| 25. I never resent being asked to return a favor.                                   | T | F |
| 26. I have never been irked when people expressed ideas very different from my own. | T | F |
| 27. I never make a long trip without checking the safety of my car.                 | T | F |
| 28. There have been times when I was quite jealous of the good fortune of others.   | T | F |
| 29. I have almost never felt the urge to tell someone off.                          | T | F |
| 30. I am sometimes irritated by people who ask me favors.                           | T | F |
| 31. I have never felt that I was punished without cause.                            | T | F |
| 32. I sometimes think when people have misfortune they only got what they deserved. | T | F |
| 33. I have never deliberately said something that hurt someone's feelings.          | T | F |

10

DEMOGRAPHIC DATA

The following information is for classification purposes only. Results will be kept completely confidential.

1. Are you: \_\_\_\_\_ Male \_\_\_\_\_ Female

2. Age: \_\_\_\_\_

3. Education: Please indicate highest grade completed.

- \_\_\_\_\_ Elementary School
- \_\_\_\_\_ Some High School
- \_\_\_\_\_ High School Degree
- \_\_\_\_\_ Some College
- \_\_\_\_\_ College Degree
- \_\_\_\_\_ Some Graduate School
- \_\_\_\_\_ Graduate School Degree

4. Income: Please indicate which of the following ranges of income represents your family household's total annual income.

- \_\_\_\_\_ Less than \$5,000
- \_\_\_\_\_ \$ 5,000 to \$ 9,999
- \_\_\_\_\_ \$10,000 to \$14,999
- \_\_\_\_\_ \$15,000 to \$19,999
- \_\_\_\_\_ \$20,000 to \$24,999
- \_\_\_\_\_ \$25,000 to \$29,999
- \_\_\_\_\_ \$30,000 to \$39,999
- \_\_\_\_\_ \$40,000 to \$49,999
- \_\_\_\_\_ \$50,000 and greater

5. Please list your occupation \_\_\_\_\_

11

6. In which of the following have you invested? (Please check all that apply.)

- Savings Account In an Insured Bank
- Money Market Fund
- Certificates of Deposit
- Mutual Funds
- Stock Market
- Company Pension Fund
- Real Estate (Your Own Home)
- Real Estate other than your home
- Bonds
- Treasury Bills
- Self-owned Business
- Other (please list) \_\_\_\_\_
- Have not made financial investments

APPENDIX E

FOCUS GROUP GUIDE

## FOCUS GROUP GUIDE

I. Group Objectives of the focus group session - to discuss various aspects of risk taking behavior - risk takers and risk avoiders, especially as this effects consumer behavior. Will be focusing upon financial risk taking behavior and then on social risk taking behavior.

The ultimate goal will be to use this information to develop a scale that will measure financial risk taking behavior (that will indicate the degree to which someone is a risk taker or a risk avoider).

II. Group Composition - Each focus group will consist of 6 to 8 participants. Participants will consist of male and female Payne County Cooperative Extension Homemakers.

III. Statement of Purpose of the Group (as explained to participants). The purpose of this focus group session is to discuss various aspects of risk taking behavior. We will be talking about risk taking. We will be especially interested in consumer behavior and the risk that is involved as we act as consumers. Our **special** focus will be on **financial** risk taking behavior and then on **social** risk taking behavior.

The information that you give today will be used to help develop a way to measure whether someone is a financial risk taker or risk avoider, and whether he or she is a social risk taker or a social risk avoider. This will be of great help in the development of financial counseling plans, of budgeting lessons, and of many other ways to help consumers understand themselves and learn to act in a way that works best for them. Your information will help us know what questions to ask.

IV. Tape Recorder - Let me point out the tape recorder that is set up. This is so that I can be less concerned with written note taking and can review our discussion after the meeting.

V. "Rules" of the Group - So that we can get the best discussion possible from our meeting, I would ask that one person speak at a time and that you speak loudly enough for us all to hear. This also helps us get a good tape of the discussion. During our session, please feel free to make any comments you wish about ideas or experiences you have had concerning risk taking; don't worry, there are no "right " or "wrong" statements. We are interested in getting ideas, any comments you may have are very important to us.

VI. This session will last for about 1 1/2 to 2 hours. Since we won't be taking any scheduled breaks, if you need to take a few minutes at any time, that's fine.

VII. Warm-up - Participants introduce themselves

VIII. Questions concerning Risk Taking in general:

1. How would you define the word "risk"?
2. Do you think that there are people who generally are risk takers in their lives?
3. What do you think these people are like in general? Describe a "risk taker".
4. Do you think that there are people who generally avoid risk in their lives? Describe someone who is a risk avoider.
5. Do you think that being a risk taker is a positive, negative, or neutral trait? In what way?
6. Do you think that being prone to staying away from risk is a positive, negative or neutral trait? In what way?
7. Do you think that people who are risk takers "see" something as less risky than someone who avoids risk, or do they see something as risky but do it anyway?
8. What are some different types of risk taking behavior? For example, one might be physical risk (rock climbing or maybe even smoking). Another might be financial risk as we discussed earlier. Think of some examples of different types of risk in your life and the lives of people you know.
9. Do you think that someone might be a risk taker in one area and a risk avoider in another, for example someone might like hang gliding but might never take financial risks? Or do you think that people are either risk takers or risk avoiders in all aspects of their lives?
10. In general, who do you think are greater risk takers, men or women? Why?
11. In general, who do you think are greater risk takers, younger or older adults?
12. What other factors do you think might influence someone to be a risk taker or a risk avoider?

## IX. Financial Risk Taking

1. Describe some general areas in which someone might be a financial risk taker or risk avoider, for example, investment behavior is one area. What are some others?
2. What are some examples of risky financial investments?
3. What are some examples of financial investments that hold little risk?
4. Are there any situations that you can think of where you, your friend, anyone you have heard about took great financial risks? Describe the situation.
5. What are some examples of risky credit actions?
6. What are some examples of credit actions that hold little risk?
7. What are some specific examples you can think of where someone has taken a credit risk?
8. How would you describe the term "spending risk"? What are some examples of spending risk?
9. What are some of the risks that can be involved in budgeting and/or financial planning? Give some specific examples.
10. What are the possible positive effects of being a financial risk taker?
11. What are the possible negative effects of being a financial risk taker?
12. Do you see yourself as a financial risk taker? Why or why not?
13. In general, do you think men or women tend to be greater financial risk takers or do they tend to take the same degree of financial risk?
14. In general, do you think older or younger adults take greater financial risks, or do they tend to take the same degree of financial risk?
15. In general, do you think that the amount of money you have affects the financial risk you are willing to take? In what way?



16. Do you think those selling financial services try to use our desire to either take or avoid financial risks when trying to sell financial products and services? What are some examples of this?

17. Any other thoughts on financial risk taking?

#### X. Social Risk Taking

1. Moderator - Because is is not a common term, give a general definition of social risk taking.

2. What are some general types of social risk taking?

3. What are some specific examples of social risk taking? Think of some times when you have risked social acceptance in your life.

4. Why might someone take social risks?

5. In general, are men or women greater social risk takers or do they tend to take the same amount of social risk? Why? When might this differ, give some examples.

6. In general, are older or younger adults greater social risk takers or do they tend to take the same amount of social risk? Why? When might this differ, give some examples.

7. Do you think that being a social risk taker is a positive or a negative or neutral trait?

8. Do you think that avoiding social risk is positive, negative, or neutral?

9. How might social risk taking affect consumer behavior? Give some examples.

10. Do advertisers use social risk or the wish to avoid social risk, to sell us products? What are some examples of this?

#### XI. Closing remarks

APPENDIX F

SUPPORTIVE DATA

**TABLE 1.**  
**Characteristics of Risk Averters and Risk Takers**

| Components of Risk          | Risk Averter Requires  | Risk Taker Accepts  |
|-----------------------------|--|---|
| Magnitude of Potential Loss | Low maximum loss<br>Low stakes, commitment<br>Low variability in payoffs<br>More information on losses<br>More control over losses                         | Higher maximum loss<br>Higher stakes, commitment<br>Higher variability in payoffs<br>Less information on losses<br>Less control over losses                         |
| Chances of Potential Loss   | Low chance of loss<br>Familiar environment<br>Few uncertain events<br>More information on chances<br>More control over uncertain events<br>Low uncertainty | Higher chance of loss<br>Unfamiliar environment<br>Many uncertain events<br>Less information on chances<br>Less control over uncertain events<br>Higher uncertainty |
| Exposure to Potential Loss  | Low exposure<br>Shared responsibility<br>More information on exposure<br>More control over exposure  | Higher exposure<br>Sole responsibility<br>Less information on exposure<br>Less control over exposure  |
| Other Risk Components       | Control by self<br>Contingency plans<br>Consensus<br>Exit from risky situations  | Control by others<br>No contingency plans<br>Conflict<br>Participation in risky   |

(MacCrimmon and Wehrung, 1986, p. 35)

TABLE 2

## Demographic Profile of Sample

Age Category

|                 |     |
|-----------------|-----|
| 18-39           | 112 |
| 40-59           | 94  |
| 60 and above    | 41  |
| Did not respond | 12  |

Highest Level of Education

|                        |    |
|------------------------|----|
| Some High School       | 11 |
| High School Degree     | 40 |
| Some College           | 82 |
| College Degree         | 53 |
| Some Graduate School   | 22 |
| Graduate School Degree | 48 |
| Did not respond        | 3  |

Income Level

|                    |    |
|--------------------|----|
| Below \$5,000      | 1  |
| \$5,000-\$9,999    | 11 |
| \$10,000-\$14,999  | 21 |
| \$15,000-\$19,999  | 28 |
| \$20,000-\$24,999  | 20 |
| \$25,000-\$24,999  | 27 |
| \$25,000-\$29,999  | 44 |
| \$30,000-\$39,999  | 36 |
| \$40,000-\$49,999  | 36 |
| \$50,000 and above | 61 |
| Did not respond    | 10 |

Occupation

|              |     |
|--------------|-----|
| Professional | 104 |
| White Collar | 46  |
| Craft        | 7   |
| Blue Collar  | 12  |
| Menial       | 0   |
| Homemaker    | 31  |
| Retired      | 25  |

TABLE 3

Pearson Correlation Coefficients for  
Consumer Financial Risk Scale and  
Crowne and Marlow's Social Responsibility Scale

|                       | Mean   | Standard Deviation | Correlation |
|-----------------------|--------|--------------------|-------------|
| Risk Propensity       | 30.826 | 7.577              | .186        |
| Social Responsibility | 49.861 | 5.813              |             |

\*N=257

TABLE 4

Pearson Correlation Coefficients for  
Consumer Financial Risk Scale and  
Burnett's Consumer Guilt Scale

|                 | Mean    | Standard Deviation | Correlation |
|-----------------|---------|--------------------|-------------|
| Risk Propensity | 30.826  | 7.577              | -0.345      |
| Guilt           | 101.401 | 13.473             |             |

\*N=257

**Table 5**  
Analysis of variance for gender and financial risk taking

| Source of error | df  | Sum of Squares | Mean squares | F     | p    |
|-----------------|-----|----------------|--------------|-------|------|
| Gender          | 1   | 701.2536       | 701.2536     | 11.12 | <.01 |
| Error           | 254 | 16021.2308     | 63.0757      |       |      |

Duncan's multiple range test for gender and financial risk taking\*

| Duncan Grouping | Mean   |
|-----------------|--------|
| A (Male)        | 39.950 |
| B (Female)      | 36.558 |

\*Alpha=.05    df=254    MSE=63.076    Critical range=2.021

**Table 6**  
Analysis of variance for age and financial risk taking

| Source of error | df  | Sum of Squares | Mean squares | F     | p    |
|-----------------|-----|----------------|--------------|-------|------|
| Age             | 2   | 1352.5428      | 676.2714     | 11.38 | <.01 |
| Error           | 244 | 14497.1252     | 59.4144      |       |      |

Duncan's multiple range test for age and financial risk taking\*

| Duncan Grouping** | Age | Mean   |
|-------------------|-----|--------|
| A (18-39)         |     | 39.875 |
| A (40-59)         |     | 37.606 |
| B (60 and above)  |     | 33.195 |

\*Alpha=.05    df=244    MSE=59.414    Critical range: age 40-59=2.6213  
age 60 and above=2.756

\*\*Means with same letter are not significantly different

**Table 7**  
Analysis of variance for education level and financial risk taking

| Source of error | df  | Sum of Squares | Mean squares | F   | p    |
|-----------------|-----|----------------|--------------|-----|------|
| Education Level | 2   | 99.3114        | 49.6557      | .76 | >.47 |
| Error           | 253 | 16623.1730     | 65.7042      |     |      |

Duncan's multiple range test for education level and financial risk taking\*

| Duncan Grouping**                       | Mean   |
|---|--------|
| A (grade school-high school )           | 39.020 |
| A (some college-college degree)         | 37.393 |
| B (some grad school-grad school degree) | 38.000 |

\*Alpha=.05    df=253    MSE=65.704    Critical range: college/college degree=2.810  
grad school/grad school degree=2.672

\*\*Means with same letter are not significantly different

**Table 8**  
Analysis of variance for income level and financial risk taking

| Source of error | df  | Sum of Squares | Mean squares | F    | p    |
|-----------------|-----|----------------|--------------|------|------|
| Income Level    | 2   | 586.1702       | 293.0851     | 4.70 | <.01 |
| Error           | 254 | 15325.9020     | 62.3004      |      |      |

Duncan's multiple range test for income level and financial risk taking\*

| Duncan Grouping**      | Mean   |
|------------------------|--------|
| A (\$14,999 and below) | 39.939 |
| A (\$15,000-\$29,999)  | 37.827 |
| B (\$30,000 and Above) | 36.766 |

\*Alpha=.05    df=246    MSE=62.3004    Critical range: \$15,000-\$29,999=2.884  
\$30,000 and above=3.032

\*\*Means with same letter are not significantly different

TABLE 9

## Factor Pattern for Financial Risk Scale

| ITEM<br>(on 28-item scale) | FACTOR 1 | FACTOR 2 | FACTOR 3 | FACTOR 4 |
|----------------------------|----------|----------|----------|----------|
| 1                          | -0.324   | -0.082   | 0.046    | -0.751   |
| 3                          | 0.715    | -0.065   | 0.197    | -0.100   |
| 5                          | 0.584    | -0.014   | 0.473    | -0.150   |
| 6                          | -0.649   | 0.275    | -0.340   | -0.340   |
| 8                          | -0.655   | -0.022   | -0.436   | -0.166   |
| 9                          | -0.614   | -0.021   | 0.464    | 0.139    |
| 11                         | 0.126    | 0.663    | 0.102    | -0.253   |
| 13                         | -0.013   | -0.710   | -0.169   | -0.088   |
| 14                         | 0.564    | -0.081   | 0.475    | -0.080   |
| 15                         | -0.034   | -0.515   | 0.159    | -0.300   |
| 16                         | -0.543   | -0.307   | -0.385   | -0.007   |
| 17                         | 0.190    | 0.227    | 0.716    | -0.066   |
| 18                         | -0.702   | 0.203    | 0.003    | -0.111   |
| 20                         | 0.589    | 0.103    | -0.031   | -0.436   |
| 24                         | -0.327   | -0.625   | 0.050    | -0.085   |
| 27                         | 0.637    | -0.313   | -0.028   | -0.043   |



**TABLE 10**  
**FACTOR LOADINGS FOR CONSUMER FINANCIAL RISK TAKING SCALE**

| ITEM<br>(on 16-item scale)<br>Risk  | FACTOR 1<br>General Financial<br>Planning Risk | FACTOR 2<br>Purchasing Risk | FACTOR 3<br>Stock Market<br>Investment Risk | FACTOR 4<br>General<br>Investment |
|---|--|-----------------------------|---|-----------------------------------|
| 1. In general, I am a financial risk taker.   | 0.715  | -0.065                      | 0.197                                       | 0.100                             |
| 2. I would be willing to invest money in a new business a friend was starting.                            | 0.583  | -0.014                      | 0.473                                       | -0.150                            |
| 3. In general, I prefer to avoid financial risk.  | 0.649  | 0.275                       | 0.119                                       | 0.340                             |
| 4. I avoid running up credit card debt.   | -0.655   | -0.022                      | -0.436                                      | 0.166                             |
| 5. I keep a close eye on my finances.   | -0.614   | -0.021                      | 0.464                                       | 0.139                             |
| 6. I would be willing to join a co-worker in starting a new company if I was interested in the idea.      | 0.564  | -0.081                      | 0.475                                       | -0.080                            |
| 7. I try to find out as much as I can about a product before I buy it.                                    | -0.543   | -0.307                      | 0.385                                       | -0.007                            |
| 8. It is better to be safe and have a moderate income than to take financial risks to make a high income. | -0.702   | 0.203                       | -0.003                                      | -0.111                            |

TABLE 10. (continued)

| ITEM  | FACTOR 1<br>General Financial<br>Planning Risk | FACTOR 2<br>Purchasing Risk | FACTOR 3<br>Stock Market<br>Investment Risk | FACTOR 4<br>General<br>Investment Risk |
|---|--|-----------------------------|---|--|
| 9. I would be willing to use money budgeted for necessities to buy a luxury item I wanted.                                    | 0.589  | 0.103                       | -0.131                                      | -0.436                                 |
| 10. I would put money in an uninsured savings and loan that offered a very high rate of interest.                             | 0.637  | -0.313                      | -0.028                                      | -0.043                                 |
| 11. I would buy a television whose features I really liked but whose performance record I hadn't heard much about.            | 0.126  | 0.663                       | 0.102                                       | -0.253                                 |
| 12. If I were buying a VCR, I would choose one with the best warranty over one with a special feature I liked.                | 0.013  | -0.710                      | -0.169                                      | 0.088                                  |
| 13. I am careful not to spend too much on items I really don't need so that I make sure I have money for things I might need. | -0.327   | -0.625                      | 0.050                                       | -0.085                                 |
| 14. If I had extra money to invest, I would buy stock in a new company I liked.   | 0.190  | 0.277                       | 0.716                                       | -0.066                                 |
| 15. If I had money to invest, I would invest in a low-risk money market fund.   | -0.324   | -0.082                      | 0.046                                       | -0.751                                 |
| 16. If my company didn't offer health insurance, I would buy private insurance.   | -0.034   | -0.515                      | 0.159                                       | -0.300                                 |

APPENDIX G  
BIBLIOGRAPHY

## BIBLIOGRAPHY

- Aharoni, Y. (1981). The no-risk society. Chatham, N.J.: Chatham House Publishers, Inc.
- Anderson, N. H., and Shanteau, J. C. (1970). "Information integration in risky decision making. Journal of Experimental Psychology, 84, 3, 441-451.
- Assael, H. (1981). Consumer behavior and marketing action. Boston: Kent Publishing.
- Barach, J. A. (1969). Advertising effectiveness and risk in the consumer decision process. Journal of Marketing Research, VI, 314-320.
- Bassler, J. F. (1972), The consistency of risk attitudes in decision-making under uncertainty, unpublished Ph.D dissertation, Carnegie-Mellon University.
- Bauer, R. A. (1960), "Consumer behavior as risk taking," in Dynamic Marketing for a Changing World, R. S. Hancock, ed., (Chicago: American Marketing Association), 389-398.
- Bem, D. J. (1971). The concept of risk in the study of human behavior,"in Carney, R. E. (ed.), Risk taking behavior: Concepts, methods and applications to smoking and drug abuse. Springfield: Charles C. Thomas, Publisher.
- Bernoulli, D. (1738). Specimen theoriae novae de mensura sortis. Comentarii Academiae Scientiarum Imperiales Petropolitanae, 5, 175-192. (Translated by L. Sommer (1954), Econometrica, 22, 23-26.
- Bettman, J. R. and Sujan, M. (1987)). Effects of framing on evaluation of comparable and noncomparable alternatives by expert and novice consumers. Journal of Consumer Research, 14, 2, 141-153.
- Blaylock, B. K. (1985). Risk perception: Evidence of an interactive process. Journal of Business Research, 13, 207-221.
- Brody, R. P. and Cunningham, S. M. (1968). Personality variables and the consumer decision process. Journal of Marketing Research, 5, 50-57.
- Brown, R. (1965). Social Psychology. New York: The Free Press.
- Burnett, Melissa (1988). Guilt as an Individual Difference Variable: Scale Development and Productive Validity Assessment, Unpublished doctoral dissertation, Oklahoma State University, Stillwater, Oklahoma.

- Calder, B. J. (1977). Focus groups and the nature of qualitative marketing research. Journal of Marketing Research, XIV, 353-364.
- Campbell, D. T., and Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. Psychological Bulletin, 56, 81-105.
- Carney, R.E. (1971). Risk taking behavior: concepts, methods and applications to smoking and drug abuse. Springfield: Charles C. Thomas Publisher.
- Churchill, G. A., Jr. (1979). A paradigm for developing better measures of marketing constructs. Journal of Marketing Research, XVI, 64-73.
- Cohen, Joel B. (1972). Behavioral science foundations of consumer behavior. New York: The Free Press.
- Cohen, M., Jaffray, J.Y., and Said, T. (1985). Individual behavior under risk and uncertainty: An experimental study. Theory and Decision, 18, 203-228.
- Cox, D. F. (1967). Risk taking and information handling in consumer behavior. Boston: Division of Research, Graduate School of Business Administration - Harvard University.
- Cox, K., Higginbotham, J., and Burton, J. (1976). Applications of focus group interviews in marketing. Journal of Marketing, 40, 77-80.
- Cronbach, L. (1951). Coefficient alpha and the internal structure of tests. Psychometrika, 16, 3, 297-334.
- Cronbach, Lee J. (1963). Educational psychology. New York and Burlingame: Harcourt, Brace & World, Inc.
- Cronbach, L.J. and Meehl, P.E. (1955). Construct validity in psychological tests. Psychological Bulletin, 52, 281-302.
- Crowne, D., and Marlow, D. (1964). Social desirability scale, in The Approval Motive. New York: John Wiley and Sons, Inc.
- Dardis, R. (1983). Consumer risk response and consumer protection: an economic analysis of seat belt usage. Journal of Consumer Affairs, 17, 2, 245-261.
- Dowling, G. R. (1986). Perceived risk: the concept and its measurement. Psychology and Marketing, 3, 193-210.
- Dyer, J.S., and Sarin, R. (1982). Relative risk aversion. Management Science, 28, 8, 875-886.
- Earl, Peter (1986). Lifestyle economics: Consumer behavior in a turbulent world. New York: St. Martin's Press.

- Edwards, W. (1961). Behavioral decision theory. American Review of Psychology, 12, 473-498.
- Engel, J. F., Kollat, D. T., Blackwell, R. D. (1978). Consumer behavior. New York: Holt, Rinehart and Winston, Inc.
- Fagley, N.S. and Miller, P. (1987). The effects of decision framing on choice of risky vs. certain options. Organizational Behavior and Human Decision Processes, 39, 264-277.
- Fern, E. (1983). Focus groups: a review of some contradictory evidence, implications and suggestions for future research. Advances in Consumer Research, 101, 121-126.
- Fern, E. (1982). The use of focus groups for idea generation: the effects of group size, acquaintanceship and moderator on response quantity and quality. Journal of Marketing Research, XIX, 1, 1-13.
- Fishburn, P. C. and Kochenberger, G. A. (1979). Two-piece Von Neumann-Morgenstern utility functions. Decision Sciences, 10, 4, 503-518.
- Fischer, D. G., and Burdeny, T. C. (1974). Individual shifts and the group shift phenomenon. Perceptual and Motor Skills, 39, 939-954.
- Goldman, A. E. (1962). The group interview. Journal of Marketing, July, 61-68.
- Greene, M.R. (1971). Risk aversion, insurance and the future. Bloomington: The Foundation for the School of Business, Indiana University.
- Greenbaum, T L. (1988). The Practical Handbook and Guide to Focus Group Research, Lexington, MA: Lexington Books.
- Heeler, R.M. and Ray, M. L. (1972). Measure validation in marketing. Journal of Marketing Research, IX, 361-370.
- Horton, R. L. (1979). "Some relationships between personality and consumer decision making," Journal of Marketing Research, 26, 233-246.
- Jessor, R. and Hammond K. (1957). Construct validity and the Taylor anxiety scale. Psychological Bulletin, 54, 3, 161-171.
- Jacoby, J., and Kaplan, L. (1972). The components of perceived risk. Advances in Consumer Research III. M Venkatesan (ed.), Chicago: Association for Consumer Research, 382-383.
- Joag, S. G., Mowen, J. C., and Gentry, J. (1988). Risk perception in a simulated industrial purchasing task: the effects of single versus multiplay decision trials.

- Kahneman, D. and Tversky, A. (1979). Prospect theory: an analysis of decision under risk. Econometrica, 47, 2, 263-291.
- Kaplan, L. B., Szybillo, G. J. and Jacoby, J. (1974). Components of perceived risk in product purchase: a cross validation. Journal of Applied Psychology, 59, 3, pp. 287-291.
- Kassarjian, H. (1971). Personality and consumer behavior: a review. Journal of Marketing Research, VIII, 409-418.
- Keinan, G., Meir, E. and Gome-Nemirovsky, T. (1984). Measurement of risk takers' personality. Psychological Reports, 55, 163-176.
- Kogan, N. and Wallach, M. A. (1972). Risk taking. in Behavioral Science Foundations of Consumer Behavior. New York: The Free Press.
- Kogan, N. and Wallach, M. A. (1967). Risk taking as a function of the situation, the person, and the group. In G. Mandler (ed.), New directions in Psychology III. New York: Holt Rinehart and Winston, 1967, 111-278.
- Kogan, N. and Wallach, M.A. (1964). Risk Taking: A Study in Cognition and Personality. New York: Holt, Rinehart and Winston.
- Krause, M. (1972). The implications of convergent and discriminant validity for instrument validation. Psychometrika, 37, 2, 179-186.
- Laughum, D. J., Payne, J. W. and Crum, R. (1980). Managerial risk preferences for below-target returns. Management Science, 26 13, 1239-1249.
- Lopes, L. L. (in press). Between hope and fears: the psychology of risk. Advances in Experimental Social Psychology, Leonard Berkowitz (ed.).
- McKenna, J. S. (1984) . Planning for retirement security: a study of women in the middle years. Unpublished Doctoral Dissertation, Oklahoma State University, Stillwater, Oklahoma.
- McQuarrie, E.F. and McIntyre, S. H. (1988). Conceptual underpinnings for the use of group interviews in consumer research. Advances in Consumer Research, 15, 580-586.
- MacCrimmon, K. R. and Wehrung, D. A. (1986). Taking risks: The management of uncertainty. New York: The Free Press.
- Maehr, M. L., and Videbeck, R. (1968). "Predisposition to risk and persistence under varying reinforcement success schedules," Journal of Personality and Social Psychology, 9, 96-100.

- Minkowick, A. A. (1964). Correlates of ambivalent risk taking and rigidity. United States Air Force Document 64-1486, United States Air Force.
- Morgan, D. L. (1988). Focus groups as qualitative research. Newbury Park, CA: Sage Publications.
- Mowen, J. C. (1987). Consumer Behavior. New York: Macmillan Publishing Company.
- Mowen, J. C. (1987). On understanding judgment and choice via the preference detection model with applications to single-choice loss domain problems. Unpublished research proposal, Oklahoma State University, Office of Business and Economic Research.
- Nunnally, Jum C. (1978). Psychometric Theory. New York: McGraw-Hill Book Company.
- Osgood, Charles E., Suci, George J. and Tannenbaum, Percy H. (1957). The Measurement of Meaning. Urbana: University of Illinois Press.
- Percy, L., et. al. (1976). "A look at personality profiles and the personality-attitude-behavior link in predicting consumer behavior," Advances in Consumer Research, 3, 119-124.
- Peter, J. P. and Ryan, M. J. (1976). An investigation of perceived risk at the brand level. Journal of Marketing Research, XIII, 184-188.
- Peter, P. (1981). Construct validity: A review of basic issues and marketing practices. Journal of Marketing Research, XVIII, 133-145.
- Popielarz, J. T. (1967). An exploration of perceived risk and willingness to try new products. Journal of Marketing Research, IV, 368-372.
- Pras, B. and Summers, J. O. (1978). Perceived risk and composition models for multiattribute decision. Journal of Marketing Research, XV, 429- 437.
- Rettig, S. (1966). Ethical risk taking in group and individual conditions. Journal of Personality and Social Psychology, 4, 6, 648-654.
- Rettig, S. and Turoff, S.J. (1967). Exposure to group discussion and predicted ethical risk taking. Journal of Personality and Social Psychology, 7, 2, 177-180.
- Robertson, T. S., Zielinski, J. and Ward, S. (1984). Consumer behavior. Robertson & Robertson, Inc.
- Rowland, V. T., Dodder, R. A. and Nickols, S. Y. (1985). Perceived adequacy of resources: Development of a scale. Home Economics Research Journal, 14, 2, 218-225.



- Ruekert, R. W. and Churchill, G. A. (1984). Reliability and validity of alternative measures of channel member satisfaction. Journal of Marketing Research, XXI, 226-233.
- Savage, L. J. (1954). The Foundations of Statistics. New York: Wiley.
- Schaninger, C. M., and Sciglimpaglia, D. (1981). "The influence of cognitive personality traits and demographics on consumer information acquisition," Journal of Consumer Research, 8, 208-216.
- Schoemaker, P. J. H. (1982). The expected utility model: its variants, purposes, evidence and limitations. Journal of Economic Literature, XX, 529-563.
- Schmidt, P. and Strauss, R. (1975). The prediction of occupation using multiple logit models. Industrial Economic Review, 16, 471-486.
- Scribner, P. (1987). Through the looking glass. Mobius, VI, 1, 8-10.
- Sheth, Jagnish N. (1974). Models of buyer behavior: conceptual, quantitative and empirical. New York: Harper & Row, Publishers.
- Shimp, T. A. (1987). A potpourri of consumer research methods. Advances in Consumer Research, 10, 127-129.
- Skrycki, C. (1987). Risk takers. Newsweek, 102, 3, 60-67.
- Slovic, P. (1964). Assessment of risk taking behavior. Psychological Bulletin, 6, 220-233.
- Slovic, P. (1962). Convergent validation of risk taking measures. Journal of Abnormal Psychology, 65, 68-71.
- Slovic P., et. al. (1977). Preference for insuring against probable small losses: insurance implications. Journal of Risk and Insurance, 44, 237-258.
- Taylor, J. W. (1974). The role of risk in consumer behavior. Journal of Marketing, 38, 54-60.
- Tesser, A. and Drauss, H. (1976). On validating a relationship between constructs. Educational and psychological measurement, 36, 111-121.
- Torgerson, Warren S. (1958). Theory and Methods of Scaling. New York: John Wiley & Sons, Inc.
- Tryon, R. C. (1957). Reliability and behavior domain validity reformulation and historical critique. Psychological Bulletin, 54, 3, 229-249.
- Tversky, A. (1972). Elimination by aspects: a theory of choice. Psychological Review, 79, 281-299.

- Tversky, A. and Kahneman, D. (1981). The framing of decisions and the psychology of choice. Science, 211, 30, 453-458.
- Tversky, A. and Kahneman, D. (1974). Judgment under uncertainty: heuristics and biases. Science, 185, 1124-1131.
- Vinokur, A. (1969). Distribution of initial risk levels and group decision involving risk. Journal of Personality and Social Psychology, 13, 3, 207-214.
- Von Neumann, J. and Morgenstern, O. (1947). Theory of Games and Economic Behavior. Princeton, N.J.: Princeton University Press.
- Vroom, V. H. and Pahl, B. (1971). Relationship between age and risk taking among managers. Journal of Applied Psychology, 55, 5, 399-405.
- Wallach, M. A. and Kogan, N. (1965). The roles of information, discussion and consensus in group risk taking. Journal of Experimental Social Psychology, 1, 1-19.
- Walters, C. Glenn (1978). Consumer Behavior: theory and practice. Homewood: Richard D. Irwin, Inc.
- Walter, C. G. and Paul, G. W. (1970). Consumer behavior: an integrated framework. Homewood, Richard D. Irwin, Inc.
- Weinstein, E., and Martin, J., (1969), "Generality of willingness to take risks," Psychological Reports, 24, 499-501.
- Weinstein, M. S. (1969). Achievement motivation and risk preference. Journal of Personality and Social Psychology, 13, 2, 153-172.
- Winakor, G., Canton, B., and Wolins, L. (1980). Perceived fashion risk and self-esteem of males and females. Home Economics Research Journal, 9, 1, 45- 46.
- Zaleski, Z. (1984). Sensation-seeking and risk taking behavior. Journal of Individual Difference, 5, 5, 607-608.
- Zaltman, G., and Wallendorf, M. (1983). Consumer behavior. basic findings and management implications. New York: John Wiley and Sons.
- Zikmund, William and Scott, Jerome (1973). A factor analysis of the multidimensional nature of perceived risk. Proceedings of the Southern Marketing Association, Houston: Southern Marketing Association, 1036.

VITA<sup>2</sup>

Beverly Suzanne Bailey

Candidate for the Degree of

Doctor of Philosophy

Thesis: INDIVIDUAL FINANCIAL RISK PROPENSITY IN CONSUMER DECISION  
MAKING: A DEVELOPMENT OF MEASURES

Major Field: Home Economics

Biographical:

Personal Data: Born in Cincinnati, Ohio, January 21, 1960, the daughter of Robert and Marjorie Bailey.

Education: Graduated from Memorial Senior High School, Tulsa, Oklahoma, in May, 1978; received Bachelor of Science Degree in Advertising/Public Relations from University of Tulsa at Tulsa in May 1982; received Master of Science Degree in Mass Communications from Oklahoma State University in Stillwater in July 1985; completed requirements of the Doctor of Philosophy Degree in Consumer Studies at Oklahoma State University in May 1990.

Professional Experience: Instructor of Journalism, 1989-Present, Arkansas State University; Graduate Teaching Associate, 1987-89, Oklahoma State University; Graduate Research Associate, 1985-1987, Oklahoma State University; Graduate Teaching Assistant, 1982-1985, Oklahoma State University.