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SEGMENTING THE ELDERLY CONSUMER MARKET: THE APPLICATION OF
AGE-GENDER CATEGORIES DRAWN FROM A TEST OF THE LEVELING
VERSUS DOUBLE JEOPARDY HYPOTHESES

City University of New York

PH.D. 1983

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by
ELAINE SHERMAN

A dissertation submitted to the
Graduate Faculty in Business in
partial fulfillment of the
requirements for the degree of
Doctor of Philosophy,
The City University of New York
1983

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This manuscript has been read and accepted for
the Graduate Faculty in Business in satisfaction
of the dissertation requirement for the degree of
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ABSTRACT

SEGMENTING THE ELDERLY CONSUMER MARKET:
THE APPLICATION OF AGE-GENDER CATEGORIES DRAWN FROM
A TEST OF THE LEVELING VERSUS DOUBLE JEOPARDY HYPOTHESES

by

Elaine Sherman

Adviser: Professor Leon G. Schiffman

This research had as its main objective the exploration of two competing social gerontological viewpoints as a basis for enhancing the segmentation of the elderly-consumer marketplace. One of the two perspectives, leveling, suggests that as men age, their life situation deteriorates at a more rapid rate than is the case for aging women. In contrast, double jeopardy proposes that the greater inequalities that exist among women in society worsen with advancing age; that is, being a female and elderly has the additional effect of belonging to two stigmatized groups.

To empirically examine the merit of these two alternative age-gender explanations of shifts in subjective well-being, and to test a series of relevant hypotheses, a data base consisting of a sample of about 16,000 males and females who were at least 55 years of age was secured.

Matching the variables available from the data base with those identified from the social gerontological literature, suggested specific variables that might serve as substitutes for a standard measure of subjective well-being (the typical dependent variable). The independent variable consisted of six age-gender categories.

At the most general level, the results suggested that leveling occurred substantially more often than double jeopardy. Also, a third pattern, one not originally accounted for in the social gerontological literature, here labelled "parallelism," occurred most often, with respect to the SES income surrogate of subjective well-being. Parallelism was defined as that pattern in which the well-being of men and women remain relatively fixed over time or between different age groups.

To determine if any geographic regularities prevailed, the age-gender patterns for each surrogate of subjective well-being was plotted on a map. The results revealed that some communities were strongly double jeopardy markets; whereas other were completely leveling communities. However, there was not any support for the existence of sectional or regional patterns.

Recommendations as to the marketing and public policy implications of the findings of this research were offered.

DEDICATION

To my parents, Beatrice Goldman, and in loving
memory of my father, Joseph Goldman, for
their love and encouragement throughout my
life.

ACKNOWLEDGEMENTS

A study of this scope was not only the result of my efforts, but also benefitted from the unselfish support of many people. While I could not hope to mention all those individuals who contributed in some way, I would like to take this opportunity to acknowledge those who especially assisted me in this dissertation project, and who encouraged my professional growth.

First, my special thanks are extended to my dissertation chairman, Dr. Leon Schiffman. It is not possible to sufficiently express my gratitude for his unselfish guidance and unending patience throughout all phases of this dissertation research. He has been a source of inspiration to me during my doctoral studies. I will continue to aspire to reach the level of scholarly precision which he has tried, through patience and encouragement, to foster in me.

My sincere appreciation is also offered to Dr. Conrad Berenson for his valuable advice and constant interest in my scholarly development. Throughout my studies, he has had a direct impact on me as my teacher, chairman of my position paper committee, and as a member of my dissertation committee.

His wisdom and friendship will always be a source of motivation for me.

Dr. Edward Wolf has my appreciation for sharing with me his knowledge and expertise in statistics and research design. I would also like to express my deep sense of obligation and appreciation to Dr. William Dillon, of the University of Massachusetts, for taking a great deal of time from his busy schedule to provide counsel and friendly advice. His guidance regarding the causal modeling section, in Chapter 5 of the dissertation, is particularly appreciated.

From outside of the academic community, I owe a very special debt of gratitude to Mr. John J. Veltri, a marketing executive with a major Fortune 500 company. Without his firm's support this dissertation could not have been undertaken. Mr. Veltri's expertise and assistance were critical during the data preparation phase of this dissertation project.

Among the many fine faculty at Baruch College, my sincere appreciation is offered to Dr. Mark Berenson, who suggested a number of useful statistical techniques; to Dr. Harold Shapiro, who gave me friendly advice and comfort throughout my studies at the City University; to Dr. David Rachman, for his keen ability to blend scholarship and real world problems into a

meaningful whole; and to Dr. Sam Ryan, who was the first to give me a sense of confidence that I could manage quantitative analysis.

My friends and colleagues at Hofstra University have also played an important role in offering warm support and friendship. In particular, Dr. Joel Evans inspired my initial interest in an academic career, and encouraged me to pursue the doctorate after completing the MBA. Although his input has been too multifaceted to be fully enumerated, his support as a co-author on various publication assignments has contributed a great deal to my academic and scholarly growth. As my chairman and friend, he has constantly given me the motivation to strive to attain additional professional goals. Dr. Barry Berman has also been a very special friend, as well as a professional colleague and co-author. He has always been a champion and provided wise advice throughout my graduate studies. For this I am much obligated.

I would also like to express my appreciation to my other Hofstra colleagues, in particular to Dr. Herman Berliner, Dr. Dorothy Cohen, Dr. Harold Lazarus, Dr. Russell Moore, and Dr. Nancy Stern.

I owe a special thanks to my family, especially

Bradley, Alan and Melissa, and my parents. I am also grateful to my numerous friends, in particular Myrna Skidell, who have been available in all those frustrating moments. A debt of thanks is also owed to Dr. Martin Schwimmer, who kept reassuring me from the beginning that I would reach this point in my career.

Finally, I wish to thank my typist, Jo Wakefield for her cooperation in the preparation of the dissertation.

Elaine Sherman
Baldwin, New York
April 1983

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Chapter 1

INTRODUCTION

The three primary objectives of this dissertation were: (1) to test within a context applicable to our understanding of the elderly consumer market two competing social gerontological hypotheses, (2) to explore the usefulness of the framework of these two competing hypotheses as a basis for segmenting the elderly consumer market, and (3) to provide further insights on the degree of heterogeneity existing within the overall elderly market.

The remainder of this chapter will introduce the dissertation research. It begins with a discussion of the problem and enumerates the specific research objectives to be considered. This is followed by an examination of the relevance of the research topic, specific questions to be explored, and the scope of the research. The chapter ends with an overview of the organization of the chapters that follow.

The Discussion of the Problem

The examination of patterns of differences and inequalities are of basic interest to all behavioral

science disciplines. For instance, within the context of consumer behavior, market segmentation research has often employed variables such as social class standing that have innate inequality characteristics (e.g., Felson, 1975; Wasson, 1979; Jain, 1975; Myers & Mount, 1973; Myers, et al., 1971; Myers & Gutman, 1974; Hisrich & Peters, 1974, Shrimp & Yokum, 1981). Indeed, most common demographics (e.g., sex, age, employment status, income, occupation, education) measure inequalities within a particular context. For instance, higher income is almost always a better position to be in than lower income; membership in certain religious, ethnic and racial groups may be an advantage or disadvantage for their members; and it is generally better to be younger than older. Thus, common demographics have a function beyond serving merely as descriptor variables; within an appropriate context they function as a barometer of inequality, status and stigma.

Social gerontologists have in recent years become interested in certain types of inequalities that would seem to be of potential importance to consumer behavior, especially as they pertain to studying and segmenting the increasingly important elderly consumer market.

elderly consumer market.

The specific concern is with the interrelationship between age and gender. Two competing "hypotheses" exist that offer very different conclusions as to how men and women respond to the aging process. First, there is the leveling hypothesis which suggests that as men age, their life situations deteriorate at a more rapid rate than is the case for aging women. Thus, advanced age is a leveler, where the situation of elderly men deteriorates to that of or beyond the situation of elderly women.

In contrast, the double jeopardy hypothesis suggests that the greater inequalities that exist among women in society worsen with advancing age. Therefore, being elderly and female creates the additive effect of belonging to two stigmatized groups (i.e., being "old" and being a "woman"). Chapter 3 considers the underlying research that supports and tests each of these two competing hypotheses. It is sufficient to indicate here that if the empirical research that tests these opposing hypotheses does anything, it supports the wisdom of combining age/gender into composite categories, rather than simply and independently examining age and gender as if they were not interrelated.

Wind (1978) has noted that a real restriction in consumer behavior has been the inability to build models which link various segmentation bases to descriptor variables; and, thus, to determine which descriptor variables should be used. With this in mind, this dissertation attempts to recast chronological age and gender into a more robust combined position, one that will potentially make them more useful as segmentation variables, especially when it comes to identifying submarkets of the overall elderly consumer market.

Specific Objectives

From this statement of the problem flows the following specific research objectives:

1. To test within the context of consumer behavior the competing leveling-double jeopardy hypotheses borrowed from social gerontology.
2. To determine if the leveling-double jeopardy hypotheses are influenced by geographic-environmental factors. For instance, are the results of tests of the leveling-double jeopardy hypotheses different in urban than suburban areas? In effect, does the innate age-gender structure required for testing the two competing hypotheses provide a promising basis for geographic segmentation of the elderly consumer market?

3. To systematically identify a number of correlate and proxy variables to function as a replacement for multi-item subjective well-being measures popular in social gerontology. The focus here will be on isolating subjective well-being measures from psychographic items commonly used in carrying out consumer behavior segmentation studies, and using such psychographic scales in testing the leveling-double jeopardy hypotheses.

4. Finally to examine the critical issue of the degree of heterogeneity (or homogeneity) existing within the overall elderly market.

Relevance of the Dissertation Research

This dissertation was designed to make a contribution to both consumer behavior and social gerontology. First, it was anticipated that the research would shed light on a number of important issues pertaining to market segmentation, in general, and segmenting the elderly marketing, in particular. However, unlike commercial marketing assignments that tend to have a very narrow objective, this dissertation research is designed primarily to advance the basic understanding of market segmentation.

Second, being interdisciplinary in scope, this research is also relevant to social gerontology.

In particular, it provides another test of the leveling-double jeopardy hypotheses. In this capacity alone, it is useful to social gerontologists studying various dimensions of age-gender differences. It also represents an extension of the work done in social gerontology, in that psychographic measures of subjective well-being are introduced as a potential substitute for the "adjustment to old age" variables that are commonly employed in gerontological research.

Finally, the dissertation also makes an important contribution to both social gerontology and consumer behavior by expanding the level-double jeopardy issue into the realm of examining potential differences between specific major urban centers and their surrounding suburban areas. Within this context, the dissertation represents the most extensive exploration of the impact of geographic-environmental factors on the leveling-double jeopardy controversy.

Questions to be Examined

Based upon the preceding discussion, the following questions have been explored in this dissertation research:

1. Is the double jeopardy hypothesis superior to the leveling hypothesis as an explanation for

age-gender related declines in well-being?

2. Are there meaningful male-female differences with regard to well-being among the elderly?

3. Are there meaningful age subcategory differences with respect to well-being among the elderly?

4. What is the relative importance of age and gender in understanding well-being among the elderly?

5. Is the presence of double jeopardy versus leveling a function of different types of well-being measures?

6. Is the presence of a double jeopardy effect versus a leveling effect influenced by specific geographic-environmental factors (e.g., urban/suburban locations)?

7. Are psychographic scales an adequate surrogate for more traditional multi-item subjective well-being measures?

Scope

This dissertation research derives all of the liabilities and benefits of research that is based on a pre-existing data base. On the liability-side is the absence of a recognized and readily acceptable

measure of life satisfaction or subjective well-being -- such as the kind commonly employed as the dependent variable in social gerontological research. To overcome this real handicap, the researcher was forced to adapt by developing substitutes from a pre-existing battery of psychographic statements (i.e., "lifestyle" measures commonly employed in consumer behavior research); and to employ established socioeconomic-demographic correlates of subjective well-being, especially specific socioeconomic variables.

Strongly on the plus-side is an extremely large and meticulously gathered data base (to be described later), one that would be impossible for an academic researcher to afford. This large representative sample provided a unique opportunity to focus the double jeopardy-leveling controversy on a variety of geographic environments (i.e., specific urban/suburban local market areas). In prior research, such comparisons were discussed, but not really carried out on a scale equivalent to the present study because of insufficient sample size and/or a lack of adequate geographic dispersion of the sample. Thus, a real opportunity existed for expanding the scope of the research by making more

specific geographic comparisons.

Organization of the Remainder of the Dissertation

The remainder of this dissertation is divided into five additional chapters. Chapter 2 reviews the appropriate literature on market segmentation and on the elderly as consumers. Chapter 3 reviews relevant social gerontological theories which serve as the foundation for a discussion of the leveling and double jeopardy hypotheses.

Chapter 4 presents the research design and considers a variety of methodological issues faced in conducting the dissertation research. Chapter 5 displays and discusses the findings. Finally, Chapter 6 provides a summary, conclusion and offers recommendations.

Chapter 2

MARKET SEGMENTATION AND THE ELDERLY AS CONSUMERS:

A REVIEW OF THE LITERATURE

This chapter begins with a discussion of market segmentation; in particular, the issue of selecting variables for inclusion in segmentation analysis. Then the more focused concern of employing demographic descriptors as segmentation variables is considered. The focus then narrows on further with an examination of age segmentation; that is, the use of age (both chronological and nonchronological measures) as a basis of segmentation in consumer behavior research. The final section of this chapter concentrates on the myths and realities of the elderly as consumers (e.g., do they constitute a viable market?), and the important related issue of just how homogeneous of a market the elderly are?

This progressive roll out from market segmentation to demographic segmentation, and then to age segmentation is in keeping with the purpose of this dissertation; that is, the exploration of an unsettled theoretical issue from social gerontology (e.g., leveling

versus double jeopardy), which happens to have innate potential properties to serve as a basis for market segmentation of the elderly consumer market.

Market Segmentation

Since market segmentation was first popularized in the mid-1950s, it has become a consistent topic for both research and marketing strategy. Indeed, segmentation currently occupies a focal place in the field of marketing research, with the application of a profusion of statistical techniques for carrying out segmentation appearing in the literature as a constant stream. Also, it is becoming more common for major marketing-oriented firms (e.g., AT&T, Citicorp and IBM) to organize their marketing development, their marketing strategy and even their marketing-organizational structure around the concept of market segmentation.

Wendell Smith (1965) brought the concept of market segmentation into prominence with his now classic article that provided guidelines for a firm's marketing strategy and resource allocation based on a comparison of the merits of product differentiation and market segmentation. The roots of Smith's conceptualization of market segmentation

can be found in an atmosphere created by the teachings of Wroe Alderson (1957, 1965), who stimulated an environment receptive to developing techniques for identifying segments and determining their feasibility as target markets (Smith, 1978)

Presently, within marketing and consumer research circles, there would be little argument that market segmentation enjoys a central position. In fact, a survey of chief marketing executives undertaken about a decade ago revealed that problems associated with identifying the needs of consumers and selecting the appropriate groups of consumers as a target market is the one issue of greatest relevance to these marketing executives (Waldo, 1973).

Basically, market segmentation is concerned with pinpointing individual and intergroup consumer differences in response to a firm's marketing mix efforts. The practical importance of market segmentation is recognized by marketing managers who are aware that if "response differences exist, can be identified, are reasonably stable over time, and the segments can be efficiently reached, the firm may increase its sales and profits beyond those obtained by assuming market homogeneity" (Green & Tull, 1978, p. 540).

Given its central position in the marketing and consumer behavior literature, and the fact that market segmentation has been judged to be so important by marketing executives, it is not surprising that considerable descriptive research has been conducted to attempt to determine which segmentation variables are most relevant in particular market situations. However, despite the widespread acceptance of market segmentation and the considerable amount of published and unpublished segmentation research, there is no real agreement as to the appropriate basis upon which to rest a segmentation effort.

Addressing this point, Roscoe, LeClaire and Schiffman (1977) undertook a small-scale study of the leading independent marketing research suppliers in the United States. They found that there was no general agreement in the market research community as to how to select demographic variables (the most commonly used type of market segmentation variables). Instead of well established guidelines or rules for the selection of appropriate demographics, the general procedure seemed to be the routine use of the same basic battery of demographics, with little attention being given to their suitability for a particular

study, and little concern being given to their wording or formatting.

If segmentation is so central to marketing and consumer research, and if demographics is the one type of segmentation variable with which academicians and practitioners have had the greatest amount of experience, it is extremely surprising that not even the most primitive "rules" have emerged for the selection of demographics for particular industries, product categories or types of consumers to be studied. Clearly, if guidelines do not exist in the realm of demographic variables, they certainly do not exist when it comes to newer or less frequently employed groups of variables (e.g., attitudinal variables, personality traits, product usage measures and psychographics).

Given the lack of any suitable guidelines for the selection of variables commonly used in segmentation analysis, it is understandable that periodically there seems to be wholesale disenchantment with certain groups of variables. For instance, psychographics rose to popularity on the back of demographics. Similarly, there has been too little attention given to establishing guidelines as to what are the appropriate bases upon which to

rest a segmentation effort. As Assael and Roscoe (1976) note, "...market segmentation is not a uniform approach but represents several approaches dependent upon marketing objectives" (p. 67). Based upon their extensive experience, Assael and Roscoe (1976) constructed a typology of methods and/or approaches for market segmentation that is based on consumer response-levels at a given point in time, or response sensitivity over time (i.e., elasticity), and takes into consideration both single and multiple behavioral criterion variables. They cite AT&T segmentation studies, dealing with its long-distance residential market, as examples of the implementation of their different approaches to segmentation. In the few years since the appearance of this article, it has been frequently reprinted and heavily quoted. In a sense, this is testimony to the great need for guidelines dealing with various aspects of market segmentation.

Wind (1978) has suggested an alternative typology that follows the two most common segmentation research patterns; that is, the "a priori segmentation design" and the "clustering-based segmentation design." In the a priori design, the segmentation variables are specified in advance, using such criteria as brand

loyalty, product purchase, or customer type. Respondents are then classified and estimates are made of the segment's size based on selected predictor variables (e.g., demographic socioeconomic and psychographic variables). Alternatively, in the clustering-based segmentation design, respondents are grouped according to the similarity of their multi-variate profiles, without prior specification of the specific segmenting variables.

However, although these two designs are most frequently employed, they often fail to disclose important segments (Tull & Hawkins, 1980). Therefore, there is an almost constant effort to introduce "new" or "improved" (sounds like packaged goods marketing) segmentation schemes and statistical approaches. These include "flexible segmentation models," which promised the researcher the ability to examine a large number of alternative segments, each composed of those consumers who exhibit a similar response pattern. One specific flexible segmentation model is based on a combination of results from conjoint analysis and a computer simulation of consumer choice behavior (Green & Wind, 1973). Another, labeled "componential segmentation" (Green, 1971), shifted the emphasis of the segmentation

effort from the partitioning of the market to the prediction of which person-type will be most responsive to a firm's offering and what type of product features to include in the product to satisfy a consumer segment.

In contrasting the selection of variables to serve as a basis for segmentation (i.e., the dependent variables), and the variables to serve as descriptors (i.e., the independent variables), Wind (1978) suggested that selecting descriptors is more complex and difficult than selecting a basis for segmentation. He suggested that the greater complexity of selecting descriptors stems from three factors: (1) the huge number of potential descriptor variables, (2) the uncertain or unknown association between dependent variables (the basis for segmentation) and the descriptor variables, and (3) the lack of consideration as to the ultimate ease (or difficulty) of basing actual strategy in terms of specific descriptor variables (e.g., it is generally acknowledged to be difficult to prepare a strategy based upon personality differences).

Of these factors, the second factor -- the uncertain link between dependent and independent variables -- is most unexpected given the huge body of

consumer behavior literature. However, as Wind (1978) noted, this circumstance is due basically to the following factors: (1) the lack of sufficient attempts to build a store of cumulative findings about consumer behavior, (2) the lack of specific models which can be used to predict which descriptors should be incorporated in a particular study, (3) the relatively small sample and non-representative nature of most segmentation studies, and (4) the lack of commonality of variables across studies.

This brief review of the "state of the art" of selecting segmentation variables, especially descriptor or independent variables, reveals a disappointing lack of sufficient guidelines upon which to select variables for segmentation studies. Thus, keeping in mind the objective of this dissertation research, this brief review supports the need to explore new directions in selecting segmentation variables.

Demographic Segmentation

Among the wide variety of variables a consumer researcher might decide to include in a study, general consumer characteristics such as age, sex, income, education, occupation, religion, family size and social class are most often utilized. These popu-

lation descriptors are examples of a category of variables known as "demographics." Demographics have been defined by Roscoe, LeClaire and Schiffman (1977) as "...population, ecological, and socioeconomic characteristics that may be portrayed statistically and qualitatively to provide information input to management decisions in marketing a product or service" (p. 67).

The popularity of demographic variables is often attributed to the ease in which they can be collected, measured and communicated to others; as compared to other, more behavioral measures such as personality, attitudes and psychographics. Another reason for their use is their generalizability to the population at large. This is so since population statistics are periodically updated by the U. S. Bureau of Census. Also, public policy issues often center around the socioeconomic-demographic segments of the population (Sheth, 1977). When they work, they are really parsimonious and robust. One of their main benefits is to provide insights as to the location of markets. In this context, demographics are often employed because of their close association with consumers' needs and preferences.

The distinct value of demographics in describing and understanding consumer behavior is vividly captured in an illustrative profile of the heavy users of shotgun ammunition (Wells, 1975). Table 1 reveals the heavy shotgun shell buyers to be different from nonbuyers in a number of meaningful ways; that is, they are younger, have lower income and less education, and are typically drawn from lower-class occupations. Moreover, they are geographically concentrated in rural areas (where hunting is more common), particularly in the Southern section of the country.

According to Schiffman (1982), such information is invaluable when it comes to revealing which portion of the population is the key target market for ammunition, and where they are located. Such a demographic profile is useful to marketers when it comes to decisions as to where to place a concentration of sales representatives, or where to locate a distribution center. Further, the demographic portrait can be contrasted with the available demographics of various national and regional advertising media, allowing the firm marketing ammunition to make more enlightened decisions as to where to spend its advertising budget.

Table 1

DEMOGRAPHIC PROFILE OF THE HEAVY USER OF
SHOTGUN AMMUNITION

	Percent who spend \$11+ per year on shotgun ammunition (141)	Percent who don't buy (395)
Age		
Under 25	9	5
25-34	33	15
35-44	27	22
45-54	18	22
55+	13	36
Occupation		
Professional	6	15
Managerial	23	23
Clerical-Sales	9	17
Craftsman	50	35
Income		
Under \$6,000	26	19
\$6,000-\$10,000	39	36
\$10,000-\$15,000	24	27
\$15,000+	11	18
Population Density		
Rural	34	12
2,500-50,000	11	11
50,000-500,000	16	15
500,000-2 million	21	27
2 million+	13	19
Geographic Division		
New England-Mid Atlantic	21	33
Central (N, W)	22	30
South Atlantic	23	12
E. South Central	10	3
W. South Central	10	5
Mountain	6	3
Pacific	9	15

Source: William D. Wells, "Psychographics: A Critical Review," Journal of Marketing Research, Vol. 12 (May 1975), 197.

Demographic variables also provide information about the "structural characteristics" of consumers. As Green (1977) points out, although demographic and socioeconomic characteristics may change over time, they may be treated as stationary for short time periods. Moreover, one of their advantages is that although demographic and socioeconomic variables moderate a person's decisions about which products to buy, they are still fairly independent of the firm's marketing strategies (Green, 1977); that is, a person's age and sex are not determined by the marketing mix. Still further, as Sheth (1977) indicates, there are important between-group differences in consumption behavior that are discernible in terms of demographic factors. Thus, the vast majority of demographic factors are useful predictors or correlates of consumption behavior, even though some of the differences (e.g., income differences) have narrowed as society as a whole has become better educated and more sophisticated.

Problems in Selecting and Using Demographics

A major dilemma that marketers encounter when using demographics is the decisions as to which particular descriptors to utilize when analyzing a particular market, and what are the most appropriate ways

to define the demographic factors so that they are helpful to management in carrying out specific strategy activities. Thus, not surprisingly, there has been some disenchantment with the use of demographic segmentation among some marketers.

Among the difficulties encountered by marketers is their selection of demographics as either a single predictor or as composite variables. Although some composite demographic variables have been formulated (e.g., family life cycle or social class), little attention has been given by consumer researchers and marketing practitioners to the development of new combinations or composites of simple demographic variables. For example, Shrimp and Yokum (1981) have criticized measures of social class for not taking into account the education and occupation of the wife, as well as the husband, in determining social class. Moreover, Hisrich and Peters (1974) compare the relative performance of income and social class (where social class is determined by a composite index) to account for the use or nonuse, as well as the frequency of use of fourteen entertainment activities. Income was found to be a superior predictor of use versus nonuse, while the composite measure of social class was a

better predictor of frequency of use. This study indicates that composite demographic variables are likely to play a potentially important role in consumer behavior research. As Sheth (1977) suggests there is a need for "good socioeconomic demographic indices that are built with good psychometric procedures" (p. 135).

Consumer researchers also suggest that another reason why demographic descriptors have failed to live up to expectations has been the generally poor operationalization of the descriptors (e.g., solely measuring social class in terms of husband's status scores, even when consumer decisions were jointly made; see Roscoe, et al., 1977; Shrimp & Yokum, 1981).

Although these various limitations have been noted, it should not be assumed that interest in the use of demographic descriptors has diminished. Various researchers, including Carman (1978), Sheth (1977), Zaltman and Wallendoff (1977) and Nicosia and Mayer (1976), all support the idea that demographic descriptors should not be discarded; instead what is needed is more sophisticated measurement and application.

This discussion leads to another criticism of demographics which centers on problems with the measurement and statistical analysis of demographic descriptors. Often segmentation studies using demographic descriptors have encountered low R^2 values. Despite the existence of low R^2 values, various researchers argue that one should not come to the conclusion that demographic descriptors are inadequate as segmentation variables (Roscoe, LeClaire & Schiffman, 1977; Sheth, 1977). In support of this position, Martin (1973) has concluded that low values of R^2 may simply be due to the number of response categories provided (which would be a measurement problem). Also, Morrison (1972) has shown that when the dependent variable is discrete, the effect on the value of R^2 is insignificant as long as the independent variables are continuous.

Several empirical studies reported by Frank (1968) consider that low R^2 values do not exclude the model from explaining group behavior, only some individual behavior. The significance of group means has encouraged several researchers to recommend using group means in several statistical procedures instead of individual means (Bass, Tigert & Lansdale, 1968). Furthermore, Sheth (1977) indicates

that low R^2 may be due to sampling problems, where the results are skewed because a small percentage of consumers are included whose behavior are random and should actually have been discarded.

The Need for New and Revised Demographics

Many researchers are in accord that demographics are important for the identification and segmentation of markets. Yet new demographic variables or improved versions of existing demographic variables have not received enough attention. As Roscoe, et al. (1977) suggest "Exploratory research designed to identify those demographic variables that perform best as consumer descriptors for specific product categories and particular types of retail patronage patterns is needed" (p. 75).

Roscoe, et al. (1977) also suggest that research should try to expand the range of basic demographic variables by casting them in new roles. To illustrate, the construct of age needs new extensions as variations on the traditional chronological age variable. Specifically, age-related factors that can be expanded on include: (1) age of household, (2) age at birth of first child, (3) age of siblings, (4) birth order, and (5) age at first trial of product.

Other ways of expanding the construct of age may include longitudinal designs of age rather than the cross-sectional methods commonly used, or the use of cohort analysis (Ryder, 1965; Riley, et al., 1972; Glenn, 1977; Reynolds & Dentz, 1981). Also, new combinations of demographics and psychographics can be explored which would create a synergistic effect in terms of forming a new basis for market segmentation.

While it is important to expand and refine existing demographics, equally important is the development of new demographics. The changing nature of our socioeconomic environment and growing interest in topics such as consumer public policy research create a need to construct new demographic variables. In addition to suggesting new measures of age, Roscoe, et al. (1977), also recommend the need for new measures of dual head of household, classifications of new forms of family and household structure, underemployment, new measures of status inconsistency, and new aggregate household measures of social class.

One final avenue for making demographic segmentation more sure-footed is the identification of theoretical issues in consumer behavior and related behavioral disciplines which might provide a useful starting-off

point for tying a conceptual or theoretical framework to the selection of demographic and other types of variables useful in market segmentation. To this end, Wind (1978) suggests that a real limitation in consumer behavior is the inability to build models which link various segmentation bases to descriptor variables; and, thus, to be able to predict which descriptor variables should be used.

Age Segmentation

Just as demographics are an important category of segmentation variable, age is considered to be an important demographic-segmentation variable.

Its popularity, in part, stems from the fact that chronological age is generally an easy variable to capture through a survey questionnaire. However, as Atchley (1972) has noted, it has been difficult to find a satisfactory method of singling out subgroups of older people by means of chronological age.

For this reason, biological and cognitive approaches to measuring age have recently been suggested (Barak & Schiffman, 1981); nevertheless, chronological is still the preferred age measure by most marketing and consumer researchers (Visrabharathy, 1981).

In discussing age segmentation, attention is first focused on chronological age (including a

consideration of its shortcomings). Next, attention is given to a variety of nonchronological age measures which are only first starting to receive attention in the consumer behavior literature (Barak & Schiffman, 1981). Finally, those attempts to construct age-related typologies for segmenting and profiling the elderly are briefly examined.

Chronological Age

Chronological age, which is often defined as the number of years since birth (Jarvik, 1975), or the number of years lived (Hendricks & Hendricks, 1977), is without question the type of age that has received the most attention in both the social gerontological and consumer behavior literature.

In consumer behavior research, specific changes in consumption patterns are quite frequently associated with chronological age. Therefore, chronological age is often used in segmentation studies, and in most profiling efforts to describe consumer behavior. It is also frequently conceived of as a proxy for other behavior variables, or as a summary index measure for more complex variables (i.e., age could be assumed to be related to physical health, mental ability and financial position [Zaltman, et al., 1980]).

However, recent research findings suggest that chronological age may not always correlate with those phenomena it is assumed to be a proxy for (Zaltman, et al., 1980). For example, there are large variations among elderly people as to how "old" they are physically and subjectively (Linn & Hunter, 1979). Also, psychological stress, sex, race, occupation and genetic variations are other important factors which influence the aging process.

Another area where chronological age has frequently been used is as a predictor of life satisfaction and subjective well-being. In this context, various researchers (Palmore & Kivelt, 1977; Larson, 1978) have found that age does not appear to be consistently related to life satisfaction. For example, Palmore and Kivelt (1977) found, after a four-year longitudinal study of people age 55-70, that contrary to the popular belief that life satisfaction tends to decrease with increasing age, that the best predictor of life satisfaction was life satisfaction scores at the beginning of the study.

In a number of other studies where chronological age was initially found to be related to subjective well-being, the introduction of such moderating variables as marital status, financial support of friends and

relatives and activity level, caused the relationship between age and subjective well-being to evaporate (Zaltman, et al., 1980).

These findings tend to support the notion that despite its great popularity, the use of chronological age has many difficulties in age-related research (particularly when it deals with both attitudinal and behavioral patterns of the elderly). For example, it is almost always inappropriate and awkward to use chronological age as a criterion or dependent variable (Barak & Schiffman, 1980).

The preceding discussion of the limitations of chronological age supports the view of several gerontologists that a multidimensional approach to the measurement of age would be beneficial to increasing knowledge of the various segments that comprise the elderly market. Specifically, Neugarten and Hagestad (1976) suggest that social, biological and psychological age should be considered individually and in tandem, because many factors influence the aging process. This view has also provided credence to Bengtson and Cutler's (1976) premise that individuals who have aged at different rates should not be grouped together just because they are of the same chronological age. Their findings

reveal attitudinal and perceptual differences among the elderly, with those who subjectively identify themselves as "old" responding differently than other members of the same chronological age cohorts who perceived of themselves as "not old."

The limitations of chronological age as a construct have also inspired researchers to attempt to develop nonchronological measures of age, often to be used in conjunction with chronological age.

Nonchronological Age Variables*

Various researchers have devised alternatives to chronological age. Zaltman, et al. (1980) have proposed the continued examination of the relationship between chronological and nonchronological age variables, and a variety of marketing variables. In the same vein, the construct of age and multiple operational measures of this construct need to be carefully defined.

Among possible age alternatives, biological age, functional age, social age and social-psychological age have been offered as the principal alternatives.

* This discussion was heavily influenced by Barak (1979) and Barak and Schiffman (1981).

Biological Age

An estimate of a person's present position with respect to his potential life span is frequently referred to as biological age (Birren & Renner, 1977; Jarvik, 1975).

Various biological theories of aging (Strehler, 1960; Bjorksten, 1969; Verzar, 1964) have been proposed. These theories are frequently evaluated in terms of their approximation to the exponential mortality curve or Gompertz plot (Hendricks & Hendricks, 1977). Biological explanations are also sometimes linked to the notion of entropy, which alludes to the degeneration of the human body, viewed in the context of a system, just like other systems. Thus, indexes of biological age tend to be based on accumulation of stress or wear and tear on the system. Other recent biological explanations of age focus on genetic or cellular level changes, or the proliferation of age pigments.

These measures are not really good alternatives for chronological age, for they are difficult to measure in a real-world marketplace situation.

Functional Age

Functional age is a measure of an individual's capacity, relative to others of the same age, to

function as a member of society (Birren & Renner, 1977). An index of functional age is often comprised of how one performs on a variety of tests. In studies by Heron and Chown (1967), and others, psychological and physiological age-related variables were found to cluster together in a relationship with chronological age (Birren & Renner, 1977).

Bell and his associates (1972) have proposed a multivariate measure consisting of components of auditory age, biochemical age, anthropometric age, ability age, personality age and social age. Although it shows potential, the construct of functional age needs further refinement as an applied measure before it can be used in consumer research.

Social Age

As a distinct age variable, social age focuses on patterns of social interaction, and the different roles a person takes as he progresses throughout life (Blau, 1973). This behavior in each role is influenced by society's expectations of behavior appropriate for that role (Neugarten, 1972; Moore & Lowe, 1968). Thus, an individual's age expresses his place in the social structure, and can be indexed by such variables as socioeconomic status, occupation, race, education, and sex, as well as other

life events that can lead to the need for change (Bengtson, et al., 1977).

Social age differs from chronological age because the latter may become an objective indicator if certain cultural events occur (for example, age when one can get social security). On the other hand, social age is more subjective and is based on roles and social positions. For instance, as a person moves through the family life cycle, his family roles help to define whether the person is "young," "middle aged" or "old." These social roles also affect the individual's self-concept and, therefore, his perceptions of his age and what is age-appropriate behavior. In addition to social roles, social age is affected by the individual's lifestyles and education which combine to develop different age patterns (Bengtson, et al., 1977).

Various researchers have developed specific measures of social age; among them are Blau (1973) and Rosow (1974), who both used a subjective age measure related to reference groups; and Rose (1972) who developed a measure of social age relating to lifestyle factors associated with the family, work and retirement.

Social age has important implications for marketing, particularly given today's emphasis on psychographic measures and certain demographics such as socioeconomic variables and the family life cycle.

Social-Psychological Age

Social-psychological age measures are of three major types: (1) subjective age, (2) personal or cognitive age, and (3) other-perceived age.

Subjective Age. Subjective age establishes how a person feels in terms of broad reference age groupings (e.g., "middle aged," "elderly") (Blau, 1956, 1973; Rosow, 1967, 1974; Ward, 1977).

Some of the research findings regarding this type of perceived age have led to conclusions that social class influences the extent of self-identification with a younger group (Rosow, 1967; Bengtson, Masschau & Regan, 1977); that the majority of elderly see themselves as younger than their chronological age (Blau, 1973; Rosow, 1974); that women are more sensitive to the negative stereotypes associated with "elderly" and "old," and tend to see their age differently from their male counterparts (Bengtson, Kasschau & Regan, 1977); and that loss of critical roles and states, such as sudden widowhood may

initiate changes in subjective age perceptions.

Other-Perceived Age. This socio-psychological age measure is established by others' assessment of the age status of an individual. It is particularly useful for examining the stereotyping of age groupings often based on perceived physical looks and perceived social roles of the observed person (Lawrence, 1972).

Cognitive or Personal Age. One of the more recently developed nonchronological age measures to gaining attention is self-perceived age. Barak and Schiffman (1981) suggest that chronological age does not consider the fact "that people frequently perceive themselves to be at an age other than their birth age, and that this cognitive age affects purchase behavior" (p. 1). This line of thinking would suggest that consumers use many products connected with their perceived age, rather than their chronological age.

In this context, Barak and Schiffman (1981) devised a scale which measured how older individuals identify their ages psychologically, rather than chronologically. They operationalized this measure to correspond to the four dimensions of personal age suggested by Kastenbaum, Derbin, Sabatini and Aritt (1972),

which included feel-age (how old a person feels), look-age (how old a person looks), do-age (how involved a person is in doing things favored by a certain age group) and interest-age (how similar a person's interest are to members of a certain age group). A recent Needham, Harper and Steers Advertising Survey (Ross, 1982) supports Barak and Schiffman's (1981) contention that a large number of older people look, feel, act and have interests of younger persons.

Other gerontologists have indicated that sex, social class and race are variables that influence discrepancies observed between perceived age and chronological age. For instance, several studies have confirmed that the lower social class elderly are more likely than higher social class elderly to see themselves as older (Neugarten & Patterson, 1957). Also, McTavish (1971) concluded that women in general hold more negative attitudes than men do about aging.

These suggestions for refining and extending the construct of age illustrate the need for a closer examination of the concept, including the limitations of chronological age and some of the alternative measures proposed in the literature.

Age-Related Segmentation Typologies of the Elderly

It is the purpose of the present discussion to review the small number of studies that propose age-related typologies which recognize that growing old is a dynamic process, one in which people do not move at a uniform pace, nor respond in the same way. Since these typologies have functioned, or are innately capable of functioning, as frameworks for market segmentation, their consideration here is especially relevant.

A logical starting place is to examine the literature dealing with the issue of age divisions; that is, how to distinguish between "younger" and "older" subgroups of elderly.

Age-Subdivisions of Elderly

While most age-related researchers have designated old age as beginning at age 65 because of the eligibility criteria for many social welfare programs, some researchers identify the "elderly market" as beginning at age 45 (Schultz, et al., 1979), or at age 49 (Bartos, 1979), or any age over 50 (Edwards, 1973).

Interestingly, a trend to treat younger age groups, particularly those in the 60-64 age group, as

"elderly" may be problematic. Brotman (1972), in his analysis of this trend, warns that the 60-to-64 age segment is not that similar to the 65-plus age segment. For instance, many more of the 60-64 age group are still working, still married; whereas the members of the 65-plus group are more likely to be economically poor, with many of them living alone. Therefore, distinctions need to be made between various segments of the elderly.

A review of the empirical gerontological literature reveals that it is common practice to divide the elderly into two broad age categories (i.e., the young/old and the old/old). For instance, Glick (1979) defines the young/old as those 65-79 and those 80-plus as old/old; and Neugarten (1974) defines young/old as 65-75 and old-old as over 75. While a good number of gerontologists have favored Neugarten's 75 years of age demarcation as the turning point between the young/old and old/old, other particularly popular breaking points are 70 or 80 years of age (Wigdor, 1978; Havens & Thompson, 1975).

A major reason why the 75 years of age breaking point is often used by gerontologists to distinguish between the young/old and the old/old is that research

has indicated that a substantial proportion of people over-65 continue to describe themselves as "middle aged," rather than "old" or "elderly." Thus they continue to identify with what they consider the main trends and thinking of the American population. Only when they reach 75 do they begin to describe themselves as "old" or "elderly." Shanas (1970) and Drevenstedt (1976) have also suggested that old people tend to judge "old age" as occurring later than do young people.

Still others have distinguished between three groups of elderly; that is, the young/elderly, the middle/elderly and the old/elderly (Randall, 1966; Schreiber, 1972; Havens & Thompson, 1975). The sequence of these distinctions is that various age categories can be identified as potential sub-segments of the elderly market.

Age-Related Types of Elderly Consumers

Age-related schemes for segmenting or partitioning the elderly into subgroups have not only been based on searching for a break-point that captures major age-related behavioral and physiological differences. Within the consumer behavior literature, for instance, Towle and Martin (1976) have reported one of the few studies to attempt to find segments within the

overall elderly consumer market. They cluster the 65-plus age data provided from a Garget Group Index Study. The results not only revealed that elderly consumers differ from their younger counterparts, but that there are also significant differences between subgroups of elderly consumers. The study identifies the following six subsegments of elderly consumers: (1) saver/planners, (2) brand loyalists, (3) information seekers, (4) economy shoppers, (5) laggards, and (6) conspicuous consumers.

Psychographic characteristics were then employed to profile each of the six subsegments. The largest of these were the conspicuous consumers, who were shown to be relatively more stubborn, egotistical and dominating than the rest of the groups. The second largest segment, the saver/planners, were found to buy unknown brands and to be more self-confident and content. These two segments constituted almost 60 percent of the elderly consumers.

Fela (1977), as part of his doctoral dissertation research, segmented a sample of elderly consumers (age 65 years and older) on the basis of psychographics into three segments: traditionalists (53.5 percent), (outgoers (23.1 percent), and isolationists (23.4 percent).

Basically, the important differences among the three segments are:

1. The traditionalists were home-oriented, conservative, religious, resistant to social change, and economically well off. Demographically, most were married and under 74 years of age.
2. The outgoers were socially active, culturally oriented, liberal, self-confident, and sometimes opinion leaders. They were married, white male Protestants, well educated and of a higher social class standing.
3. The isolationists were generally indifferent, withdrawn, inactive, materialistic and lacking self-assurance, and had low social interaction patterns. They were often women, especially widows, with lower incomes than the other elderly groups.

The research suggests that all three groups had difficulty finding products to meet their specific needs (e.g., limited styles of clothing in their sizes).

Bartos (1979), in her study of the mature market (defined as over 49 years of age), proposed six segments. She indicated that the socioeconomic conditions that shape people's lives as they move through stages of life (i.e., empty-nest, retirement,

loss of spouse), also differentiate people's lives and the adjustments to these events. In her analysis, she ignored the three underprivileged groups and concentrated on the following three groups which she felt were important from a marketing point-of-view:

1. The Active Affluent. This group consisted of both men and women who have considerable free time, even though many work. They are basically in good health and have a substantial amount of disposable income. They are also relatively young (many under 65 years of age), and have adopted new lifestyles, without children.

2. The Active Retired. This group is comprised of older married men who spend a great deal of time watching television.

3. Homemakers. This group consists mainly of women, and is the oldest group.

Bartos reviewed some of the differences in media preferences and buying habits, as well as lifestyles of these three groups. The importance of her study is that it provides additional evidence that the elderly should not be viewed as a monolithic market.

Not all contributions to segmenting the older market have come from the consumer behavior literature.

Neugarten (1972), a prominent social gerontologist, has suggested that there are different patterns of aging discernible by different personality types. Certain personality types, as they age, seem to disengage from various role responsibilities with relative comfort and remain highly content with life. Others showed a drop in both social interaction and life satisfaction, while still others showed low levels of activity and high satisfaction.

It has been suggested by Neugarten that such different patterns of aging are discernible based on three major variables: personality type, extent of social-role activity, and degree of life satisfaction. Using a set of empirically derived personality types, Neugarten (1968) developed a typology of eight patterns of aging based on the following four personality types:

1. The Integrated, those who are high in life satisfaction, and have well functioning personalities, fall into one of three types of patterns of aging:
(a) the reorganizers -- those who substitute new involvements for previous ones; (b) the focused -- those who become active in a selective or narrower range of activities; and (c) the disengaged -- those who have voluntarily moved away from previous role commitments.

2. The Armoured or Defended, who are achievement-oriented, and have two major patterns of aging: (a) the holding-on -- who continue their high activity levels from their middle-aged roles; and (b) the constricted -- those who defend themselves against aging by restricting their social activities and controlling their environment.

3. The Passive-dependent, who have two main patterns of aging: (a) the succorance-seeking who depend on others to fulfill their emotional needs; and (b) the apathetic who have been passive or indifferent as a long-term life pattern.

4. The Unintegrated, who show a disorganized pattern of aging. They are low on role activity and life satisfaction and have deteriorated in mental process and control over emotions.

Neugarten's typology suggests that personality plays an important role in the aging process and in predicting which individuals will age successfully. Thus the aging person is seen as creating patterns of life that give him or her ego involvement and satisfaction (Neugarten, 1977).

While these various nonchronological age measures are promising, and Barak (1980) and Barak and Schiffman (1981) present initial evidence which supports

their potential as consumer behavior variables, it is highly unlikely that they will replace chronological age. As the present review has indicated, chronological age has too close of a history with consumer and market research, and it is still the easiest form of age to operationalize. Consistent with this view, this dissertation attempts to recast chronological age into a stronger position, one where it is useful, because it is linked directly to theoretical issues in the behavioral aspects of gerontology.

The Elderly Consumer: An Overview

The elderly are one of the fastest growing segments of the American population. The number of people aged 65 and older is presently more than 25.5 million, or over 11 percent of the population (Robey, 1981). This group grew by 5.6 million in the period from 1970 to 1980, and will continue to increase by an estimated 300,000 to 400,000 persons annually throughout the 1980s.

A recent phrase, "the graying of America," signifies the rising median age during the 1970s. If those 55 and over are included, there are presently 45 million people, or 26 percent of the total population, accounting for over \$400 billion in annual income, and representing one-quarter of total United

States consumer expenditures (Nation's Business, 1981).

This trend is expected to persist as America continues to age rapidly. Factors that seem to account for the rapid growth in the age of the population are a dwindling birth rate, improved health care, the aging of the post-World War II baby boom, and greater longevity. Also, an aging population implies a higher proportion of women since there continues to be a much higher proportion of elderly women to elderly men (U.S. Census, 1980).

These statistics indicate that the elderly represent a large and attractive market for many goods and services. Therefore, it is not surprising that recently many leading firms (e.g., Procter and Gamble, Colgate-Palmolive, Coca-Cola and Bristol Myers) have begun to cater to the elderly consumer (Business Week, 1979). Further, advertisements featuring older models, special-interest magazines (e.g., 50 Plus), and new products designed to meet their needs have emerged.

Marketers, who at one time virtually ignored the older consumer, are now beginning to take note of this group as one of the most attractive and expansive age groups in the population. Among their important consumer characteristics, many of them have dis-

cretionary money and therefore are an attractive market. As a general market segment, they are also identifiable, reachable, stable, and can be profitable.

There is some conflict about the size of the elderly market since various companies define the starting point of what is elderly differently (i.e., over 45, over 50, over 55, over 60, or over 65). Still further, marketers have underestimated the spending power and diverse interests of this group, which have long been distorted by age-related stereotypes. These include assumptions that the elderly were not responsive to new products or that they lacked the means to buy them. Also, many of the advertisements aimed at the elderly have concentrated on an exceedingly narrow range of interests (e.g., their medical problems), rather than focusing in on their more leisurely lifestyles (e.g., travel promotions; Gage, 1980).

Within the scholarly literature of marketing and consumer behavior, there has been a general paucity of empirical research dealing with the psychological and behavioral dynamics of the elderly as consumers (Mason & Beardon, 1978). Exceptions include Schiffman's (1971, 1972a and b) work on diffusion

of innovations, opinion leadership, perceived risk and information sources; and Phillips and Sterthal's (1977) review of the information processing capacity of the elderly, which found that as they grow older they tend to shift their use of various sources of consumer-relevant information.

More specifically, Schiffman's findings indicate that both internal and external sources of information affect the elderly's consumer-decision making; that is, the lower the level of their perceived risk the more likely they were to try a new product; and that elderly consumers rely more on past experiences (internal sources of information) and less on informal word-of-mouth communication. Phillips and Sternthal (1977) found that starting at about age 60, the mass media are used for information rather than just merely entertainment.

In their recent extensive review of prior consumer-related research on the elderly, Meadows, et al. (1981) concluded that marketers still do not know enough about this elderly segment in terms of description, prediction and explanation of behavioral phenomena to adequately develop a conceptual framework that portrays their decision-making.

Common Myths About Elderly Consumers

In an extensive study conducted by Louis Harris (1976), for the National Council on the Aging, the attitudes and perceptions of the American public toward aging (including the elderly's own views of themselves) were examined. The findings indicated that most older people (i.e., 65 years of age and older) have the desire and potential to continue to contribute to society. Yet, the Harris poll revealed that the majority of younger people did not view the elderly as "very active, or alert" (p. 46). Even more surprising, most of the older public agreed with this negative stereotype, and often viewed themselves as the "exceptions." Harris concluded that the image of older people is "lowest among the young, that it peaks among those 40-64 years of age, and then it declines again among those over 65" (p. 49).

The research further revealed that income level was the variable that affects the general view of older people. For instance, higher-income elderly possessed a more positive view of themselves and life than lower-income elderly. The Harris Study, as well as other research (Waddell, 1976; Reynolds and Wells, 1977), point out the existence of a variety of common stereotypes about the elderly as consumers. Basically, seven common stereotypes predominate and serve as

principal distortions of the elderly as consumers. These stereotypes are: (1) The elderly are a homogeneous group; (2) The elderly are not a unique market; (3) The elderly are not economically profitable; (4) The elderly lack sufficient buying power; (5) The elderly are not a substantially large market; (6) The elderly are not innovating consumers; and (7) The elderly are victimized consumers. These stereotypes will now be briefly examined.

The Elderly Are a Homogeneous Group

While recognizing the potential economic force of the elderly, the popular view of the elderly, in the 1960s, was basically limited to descriptive estimates of the size and character of the overall elderly market (Meadows, et al., 1981).

Numerous studies have been conducted that have examined the elderly from the perspective of their being a single subpopulation of consumers. As the articles reprinted in the only anthology dealing expressly with elderly consumers reveals, most researchers have treated the elderly as a single or monolithic group of consumers (Wadell, 1976). Those articles in the anthology that recognize that the elderly are not a single market segment, or provide evidence supporting the idea that the elderly

consist of a variety of distinct market segments, are in the minority.

However, various researchers have begun to seriously question whether the elderly are a homogeneous group. Reinecke (1964), one of the earlier writers on the elderly as consumers, questioned this monolithic assumption, and concluded that there was no uniform elderly market, with a single consumption pattern; and that the elderly could not be distinguished by much of their consumer behavior from other diverse age groupings of consumers.

A small number of recent research has also questioned the monolithic assumption; however, unlike Reinecke's conclusion, this research reveals that there are several segments or subsegments of the overall or general elderly population (Towle and Martin, 1976; Fela, 1977; Schultz, et al., 1979). For instance, as already noted, Towle and Martin (1976) identified six buying style segments of the elderly and related psychographic characteristics to each segment; and Fela (1977) was able to identify and profile three groups of elderly consumers: traditionalists, outgoers and isolationists. In addition, Schultz, et al. (1979) report the results of a large-scale consumer lifestyle study that reveals that the elderly are not a homogeneous market.

These few studies, as well as other research, appearing in the gerontological literature, suggest that the elderly are not a uniform market group (Neugarten, et al., 1972). Moreover, these findings indicate that marketers should be sensitive to these differences existing within the overall elderly market.

As Burton and Hennon (1980) observe, the "concept of the elderly can be more accurately thought of as a global label for a collection of subgroups which differ substantially from each other in characteristics (e.g., income, location, age, etc.)" (p. 367).

The Elderly Are Not a Unique Market

Paradoxically, an alternative (opposite) stereotype of the elderly is that they do not constitute even one distinct market segment (with unique needs, desires or consumer problems and buying behavior); rather they are no different than younger groups of consumers. It will be recalled that Reinecke (1964) concluded that the elderly could not be discerned from other groups of the population. More recently, Gelb (1978) concluded that although the elderly may be a unique market segment in terms of three tests of a good market segment (i.e., identity,

accessibility, and responsiveness), it may not be feasible to segment this market because it may not be sufficiently profitable.

However, other researchers have suggested that the elderly are unique with various needs and buyer patterns that differentiate them from other consumers (Waddell, 1976). For instance, Lampert (1979), in a study that concentrated on pinpointing elderly consumers' unmet needs, found important differences between the 65-plus segment and those between 55 and 64 years of age, when it came to interest in special discounts, time of day when shopping, and form and amount of assistance required from retail sales personnel.

In their recent review, Meadows, et al. (1981) summarize various consumer-relevant factors that make the elderly different than other consumer groups, specifically:

1. The elderly tend to be more limited in their ability to get around. This influences when they go shopping (more during daylight hours), where they go shopping (nearby where they live), and the frequency of their shopping (more often than younger consumers).

2. The elderly rely more heavily on newspapers and television for information than other age groups (Bernhardt & Kinnear, 1976; Martin, 1976; Mason & Beardon, 1976; Samli, 1977).

3. The elderly engage in shopping for more than just mere buying reasons; that is, for many older persons, shopping is an important source of pleasure and recreation (Mason & Beardon, 1978; Mason & Smith, 1974).

4. The elderly have a similar, yet less active level of participation in most leisurely involvements. According to Bernhardt and Kinnear (1975), four favorite interest areas of the elderly are: attending church activities (58 percent), eating in restaurants (53 percent), reading books (43 percent), and gardening (31 percent).

5. The elderly use long-term credit less as age increases (Tongren, 1975).

This brief review reveals some of the salient traits that support the notion that the elderly have unique market characteristics.

The Elderly Are Not Profitable and They Lack Buying Power

As already noted, although there is often a sharp drop in income at retirement, the elderly still

can be a lucrative market for products and services that fulfill their needs. People over 65 often have large tax exemptions, tax-free social security income, medicare and special tax benefits on pension incomes (Reynolds & Wells, 1977). They are more concerned with money as a way toward preserving independence than young people who are more concerned with acquiring possessions.

Some available statistics that would refute the myth that they lack buying power include the following: (a) that 70 percent of those over 65 own their own homes; (b) that 85 percent of these homes have no mortgages; (c) that being an empty-nest family means more discretionary income; (d) that the great number of working women in this age group means more two-income households; and (e) that some elderly are large spenders for stocks, bonds, jewelry and expensive clothing (Allan, 1981).

Also, there has been a substantial rise in the number of retirees with second pensions in addition to social security benefits. Single men are twice as likely as single women to have income from private pensions (Rhine, 1980). Thus, there have been major programs developed in the private and public sectors which deal with the economic problems of the aged.

These programs have resulted in reduced poverty for the elderly (Schultz, 1976). In this context, a study by the Conference Board (Rhine, 1980) suggested that the elderly are a viable market.

The Elderly Are Not a Substantial Market

It is estimated that the over-65 age group will continue to grow to over 31 million or 17 percent of the total adult population by the end of the decade (Dupont, 1982). Not only has the absolute number of those 65 and older grown, but they are disproportionately important consumers in any number of substantial product categories, including the following:

(a) Denture cleaners and adhesives -- \$200 million;
(b) Mouth wash -- \$300 million; (c) Laxatives -- \$350 million; and (d) Decaffeinated coffee -- a billion-dollar business (Dupont, 1982). At present, the elderly represent a market in excess of \$60 billion (Media Decisions, 1977).

However, these substantial figures should not hide the wide range of differences within the group. There are many diverse segments within this market. Most elderly women, who are in greater numbers than men, are unmarried, often widows, and have very low incomes. The data from the U.S. Bureau of the Census (1980) show that 53 percent of all women aged

55 and over, and 61 percent of women aged 65 and older are not married and live alone.

The elderly continue to increase in size and potential. Researchers forecast that the elderly population will expand by approximately one-third in the 23 years from 1977 to 2000. The largest proportional increase will be among those 85 years and older. Today, one out of fourteen people in the United States is at least 70 years old, compared with one out of 20 in 1950 (Rhine, 1980, p. 5). By the year 2030, 24 out of every 100 persons will be at least 60 years of age, and the 80-and-over group is expected to increase by 149 percent during the period from 1979 to 2030 (Rhine, 1980).

Since at age 85 and older there are almost two and one-half times as many females (1.6 million of them), compared to fewer than 700,000 male survivors, the number of elderly women will continue to increase, often with low incomes available to them. These statistics suggest that although it is not economically justifiable for marketers to ignore the elderly markets, they should be aware of differences within various subsegments of the overall elderly market.

As an entity, however, the elderly constitute a market with a major purchasing power and their consumer influence will increase in the future through rapid growth in their numbers.

The Elderly Are Not Innovative

One of the reasons that marketers have frequently ignored the elderly is that they often are unaware that the elderly are willing to try new products and services. The previous discussion illustrates that many of the elderly buy products and services that could improve their lifestyles and meet their needs. Research reported by Schiffman (1971, 1972) indicates that a portion of the elderly are willing to try new products involved with "good" health. His findings also reveal that those elderly who are low-risk perceivers are more innovative; that innovativeness is positively associated with opinion leadership; and that socially active elderly consumers are more likely to be innovators.

The Elderly Are Victimized Consumers

Despite the popular notion and earlier research that suggested that the elderly are victimized consumers, recent studies have discon-

firmed that the elderly are necessarily more frequently the target of consumer abuses than younger consumers (Zaltman, 1980).

Writing in the mid-1970s, Block (1974) and Waddell (1976) suggested that as a result of fixed income, rampant inflation, reduced social interaction and psychological insecurity, the elderly are particularly susceptible to fraudulent business practices.

However, often there was little attempt to discover potential differences among subgroups of the overall elderly market. Specifically, various subsegments of elderly suffer more than others, and have lower self-esteem. Those who are disadvantaged in terms of lower education, limited income, and physical impairments may be among the more victimized consumers and the most susceptible to misleading marketing practices.

Along these lines, researchers have more recently suggested that, although these findings may be applicable to some groups of elderly (e.g., minority members), for the most part, the elderly were more satisfied and tended to complain less about their purchases than younger consumers (Zaltman, et al., 1980). Nevertheless, Bernhardt

(1981) concluded that although the complaining behavior of elders differs from the general population, one of the underlying reasons for complaining less might be that they made less purchases than the general population. These results would explain why some of the previously published reports showed inconsistent results.

Zaltman (1981), in his extensive study of the elderly as victims of consumer deception, suggested that elderly consumers may be more satisfied because they expect less. On this point, Bearden and Mason (1981) indicate that the elderly may be more satisfied either because they are less sensitive to unfair treatment or because they may simply have less of a tendency to assert themselves and complain about potential abuses.

This review of some of the common stereotypes about the elderly are not necessarily valid. As Harris (1976) concluded in his study of the elderly, "there appears to be no such thing as the typical experience of old age, nor the typical older person. At no point in one's life does a person stop being himself and suddenly turn into an old person, with all the myths and stereotypes that the term involves" (p. 129).

The elderly cannot be considered a monolithic, homogeneous group, but rather a heterogeneous group consisting of various market segments. Yet, even taken as a whole, the elderly do possess certain unique features or characteristics which set them apart from the general population in terms of needs and lifestyles. Many elderly also can be considered potentially profitable customers, with sufficient buying power and unmet needs demanding to be catered to.

Chapter 3

AGING AND THE ELDERLY: A REVIEW OF RELEVANT SOCIAL GERONTOLOGICAL THEORIES

Available assessments of the principal theoretical frameworks of aging and the elderly reveal that social gerontological theory is at a relatively primitive stage of development (e.g., Bengtson, 1973; Binstock & Shanas, 1976). At the present time there are no theories that adequately integrate current knowledge, explain empirical research findings, and predict new relationships. Instead, what does exist is a variety of middle-range theories that take an individual- or social-adjustment perspective. The adjustment orientation of these theories reflects the psychological and sociological viewpoints that tend to dominate those theories of aging and the elderly which are most relevant for this dissertation research.

The theories are not reviewed here because they provide a specific conceptual foundation for the examination of the leveling and double-jeopardy hypotheses, but rather because they are a backdrop

for understanding that the leveling and double-jeopardy hypotheses represent a kind of step "backward" to examine more fundamental relationships that might provide a better foundation for middle-range theories.

It is appropriate to begin this review with a brief examination of the pre-theory research perspectives concerned with aging and the elderly. Then the small number of social gerontological theories will be considered. The chapter will conclude with a discussion of the leveling and double-jeopardy hypotheses which are the central framework for this dissertation research.

Pre-theory: The Elderly As a Social Problem

Most early research on the elderly merely focused on descriptions of their behavior and their social problems (Cain, 1959; Steib & Orbach, 1967; Shanas, 1971; Maddox, 1970). Specifically, the social implications of increased life expectancy and the strains of the American health and welfare system often received the major attention.

To examine the social problems of the aged, Weinberger and Rubington (1973) suggested the following five points of view: social pathology,

social disorganization, value-conflict, deviance and labeling. The social pathology perspective, with its biological orientation, emphasized the need to bring about positive change in the elderly's health status so as to alleviate their social problems (e.g., attempts to eradicate diseases). In contrast, the social disorganization perspective requires that society should accommodate itself to the elderly by restoring some of their opportunities and assisting them to redefine their roles (Maddox & Wiley, 1976).

In the value-conflict perspective, the aged are examined in terms of the values of the middle aged and the middle class (Rosow, 1967). Since they no longer conform to these values, they become "problems" for society. The two other perspectives, deviancy and labeling, share with value-conflict the idea that distinctive group norms are at the heart of the view that the elderly are "disadvantaged." For instance, following from the deviancy perspective, the elderly are typically viewed as differing negatively from those who are both middle class and middle aged. Indeed, within this framework, as deBeauvoir (1973) suggested, being aged and a woman signifies the occupation of two deviant

statuses. This implies accepting Goffman's (1963) premise that it is the young, white Protestant male who is society's norm. Similarly, within the context of a labeling perspective, the negative stereotypes associated with older people and the tendency for the elderly to avoid supplying the label "old" to themselves has been researched. This research has found that those under 75 years of age are not particularly likely to refer to themselves as "old" (Neugarten, 1972).

Within the scope of these various "social problem" views of the elderly, there has been some attempts to integrate these research findings on aging into what Merton (1968) has called "middle range theories." In order to set the stage for the discussion of the leveling and double-jeopardy hypotheses, the following theories will be reviewed: disengagement theory, activity theory, age stratification theory, exchange theory.

Disengagement Theory

The first attempt to propose a more theoretical framework to describe the aging process is known as disengagement theory (Cumming & Henry, 1961). The major tenet of this theory is that as a person gets older, an inevitable mutual process of

withdrawals occurs, which "disengages" the individual and society. This process results in decreased interaction between the aging person and others in his or her social system. The individual withdraws psychologically and socially from the environment, as he or she moves into old age in a "self-perpetuating" process by which people tend to become more withdrawn or disassociated from others and from activity (Wershow, 1981).

One of the important and most controversial aspects of this theory is that the process of withdrawal is suggested to be mutually satisfying; that is, the individual is released from the responsibility of prior key life roles, such as work and the family, without replacing them; and for society, this withdrawal enables younger, presumably more energetic and efficient, individuals to take on these scarce roles (Atchley, 1971; Cumming, 1964). Thus, disengagement theorists suggest that aged people who withdraw from social life are better adjusted.

As readily apparent, this is quite a radical statement, and, therefore, it is not surprising that it has met with a considerable amount of criticism (e.g., Maddox, 1969, 1970). However, within this

context, disengagement theory contributed to building a theoretical framework about the elderly by attempting to integrate findings concerning physiological, psychological and social changes occurring in old age. It recognized that older people exhibit various physical and emotional characteristics that differentiate them from younger people. Further, it implied that the elderly may not have sufficient energy to be as involved in various family and community activities as middle aged people (Wershow, 1981).

Although disengagement theory provided much impetus for investigation, it is not held in high esteem today; and it has received only limited research attention. For example, Kalish (1976) criticized disengagement theory and suggested that perhaps it should apply to the frail, very old and terminally ill aged. Most of the major criticisms of the theory center around the claim that the process is inevitable (e.g., Maddox, 1969). Others have taken issue with the notion that the disengaged person is a happier person (e.g., Botwinick, 1978).

Along similar lines, Back (1976) has criticized disengagement theory for its failure to ade-

quately account for the behavior of those aged who are either extremely active and creative in old age, or those who are extremely distressed at being forced to withdraw from social contacts. This stream of research suggests that disengagement is not likely to be "normal," nor is it likely to be inevitable. Further, this body of research has indicated that for most elderly people, the continuation of a basically active lifestyle is likely to go a long way to preserving a sense of self-worth, morale and life satisfactions (Havinhurst & Albrecht, 1953; Maddox, 1970).

Activity Theory

Activity theory proposes that there is a positive relationship between activity and life satisfaction (Dowd, 1975). Thus, the continuance of a relatively active lifestyle is seen as a means for the elderly to maintain their morale and preserve a positive self-concept.

Since activity theory stresses that life's losses can be offset by finding new ways to keep active and satisfied, it is in sharp contrast with the negative prognosis of disengagement theory which suggests that adjustment to old age requires a

kind of "giving up."

Hendricks and Hendricks (1977), in their review of activity theory, suggested that the following four propositions are central to this theory:

1. The fewer the role-losses (e.g., widowhood or retirement) suffered by an aging individual, the greater the individual's participation level in activities is likely to be.

2. The more the individual elderly's activity level remains high, the greater will be the role support and assistance for the elderly person to maintain existing roles.

3. The role support that an active elderly individual receives will buttress his or her self-concept.

4. Finally, the more positive one's self-image, the greater the degree of life satisfaction.

Consistent with these four propositions, activity theory suggests that if aging individuals do not suffer a significant role loss or if they find compensating replacements for significant role losses, as they pass from the status of middle age to the status of old age, then life satisfaction will remain high (Bengtson, 1973). In other words, activity

theory proposes that aging individuals, who are engaged in active social lives, are likely to be better adjusted, have a higher morale, and greater life satisfaction than those individuals who suffer a decrease in socially-involved activities (Lemon, et al., 1972).

Despite the systematic propositions, there has been little empirical support for the theory in the last 20 years (Hendricks & Hendricks, 1977). For instance, Lemon, et al. (1972), in their attempt to test the basic tenets of activity theory, found little definitive encouragement for the four propositions. Indeed, their research has not substantiated the notion that the maintenance of high activity levels is invariably related to successful aging (Bengtson, 1973).

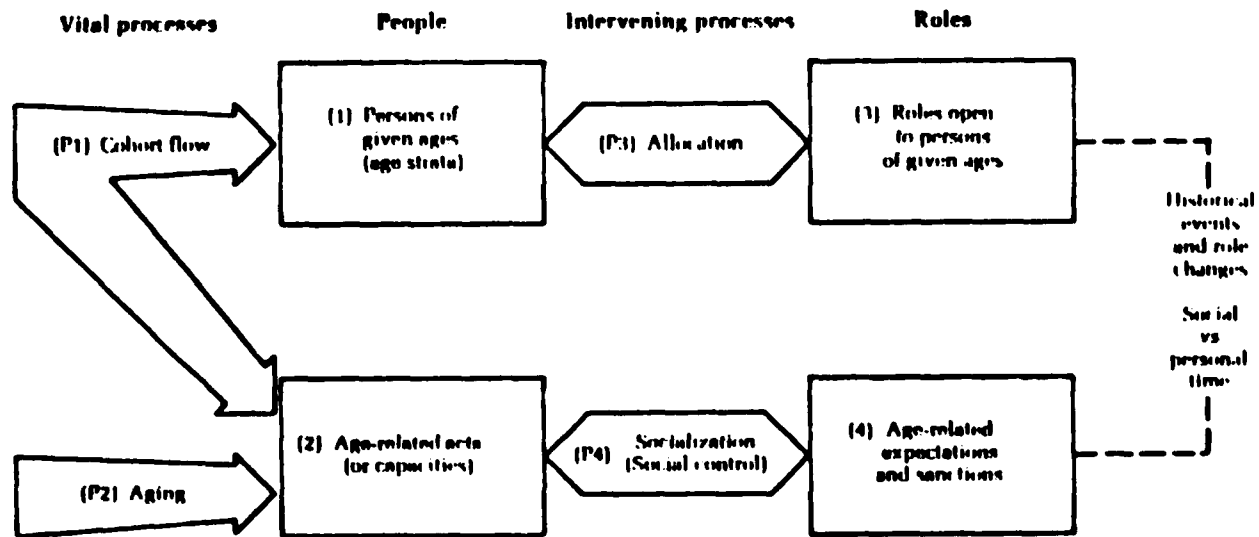
Interestingly, both the disengagement and activity theories have been labeled "wanting empirically" (Dowd, 1978). More precisely, these competing theories both predict fewer social contacts with advancing age. The difference, however, is that disengagement theory sees it as positive; whereas activity theory sees it as negative.

Age Stratification Theory

Age stratification theory develops a somewhat broader position than the preceding two theories (Riley, et al., 1972). The theory attempts to formulate a "whole-life conception of aging" by promoting the interrelated processes that affect individuals as they age. It proposes that the nature of aging is influenced by a combination of individual differences, shifts in personal characteristics brought about by the ongoing process of socialization, and the specific social situations and events in which people find themselves. At the more macro level, age stratification theory suggests that each age stratum develops its own characteristic subculture as it moves through time; and therefore, patterns of aging can differ among successive age cohorts (Hendricks & Hendricks, 1977).

The age stratification theory, with its emphasis on age grading, has been modelled by Riley, et al. (1972). The model, which is presented in Figure 1, divides the age structure of society into four primary elements. The first element suggests that the members of society should be grouped into a series of age strata; with each age cohort moving through life together and being uniquely

Figure 1
Elements and processes in age stratification theory



Source: M. W. Riley, M. Johnson and A. Foner, *Aging and Society, Vol. three: A sociology of age stratification* (New York: Russell Sage Foundation, 1972), p. 9.

influenced by life's events. The second element proposes that each age stratum differs in terms of possible contributions it makes to satisfying society's needs; and that these differences between successive age strata are an outcome of the somewhat unique environmental events that impact on each age stratum. The third element is the patterning and distribution of social roles; that is, age often dictates when people perform specific roles (e.g., it is unlikely to find many young people living in retirement communities). The fourth and final element indicates that age-related expectations govern the manner in which people perform their roles.

The key ingredient in age stratification theory is the idea that age strata are quite heterogeneous; and, therefore, various age cohorts are likely to possess different personal values and lifestyles (Streib, 1965). The theory also recognizes that there are differences in the role expectations, facilities, rewards and deprivations faced by people in different age groups (Riley, 1976). Thus, an implication of age stratification is that society assigns and reassigns people of various ages to appropriate roles.

Returning to Figure 1, there are two principal intervening processes: the allocation process and the socialization process. The allocation process suggests that as people age, they adopt and abandon a sequence of roles and actions. On the other hand, it is through the socialization process that individuals learn at each stage how to perform new roles, how to adjust to changing roles, and how to relinquish old roles. In this context, socialization is society's means of providing for the "successful" transition from one age status to the next.

In a nutshell, this model of age stratification views individuals, as well as entire age cohorts, as being molded by roles that are acquired through the ongoing process of socialization (Hendricks & Hendricks, 1977).

While the theory is appealing, it also has received considerable criticism (Riley, 1976). A central limitation is the lack of support for the assumption that there is little individual variation over the life course of members of a specific age cohort. More precisely, it seems naive to expect that people who grow up in different parts of the country, are members of various subcultural groups (e.g., differ-

ent social classes, ethnic backgrounds and religions), will be quite similar just because they were born at the same specific point in time. Along the same lines, the fact that cross-sectional information on age strata is the rule and longitudinal research is the exception means that a "generational fallacy" which overlooks the existence of life-course variations is a strong possibility. For such reasons, the age stratification theory is not without its critics.

Exchange Theory

Exchange theory suggests that the interaction between individuals can be characterized as an attempt to maximize rewards and reduce costs (Blau, 1964; Adams, 1965; Knipe, 1971). It follows that a major proposition of this theory is that social actors will continue their exchange as long as the exchange is perceived as being more rewarding than its costs (Byrne, 1971).

Dowd (1975) recommends viewing the process of aging and the relative social position of the elderly in society from the point of view of exchange theory. Within such a context, it is the concept of power that is especially relevant. Specifically, power can be thought of as arising out of the imbalance in the amount of status possessed by individuals

involved in a social exchange. In such a situation, the individual who possesses the greater amount of status has more power. Thus, viewing age as denoting status, power can be thought of in terms of status differences existing between young and older people. In a society such as the United States, where youth and being young are so highly valued (i.e., high status), it is not surprising that younger people generally have more power and are conceived of as making a greater contribution to the well-being of society than elderly people.

Matthews (1975) applies social exchange theory to the special issue of age-gender differences. In particular, in examining the self-identity of older widowed women, she suggests that they tend to be in an unbalanced position because of their limited ability to exert power in their social relationships. At a more general level, Matthews argues that society, through social legislation, has helped promote the stereotype of "old" as being equal to "dependent." Still further, society, by instituting mandatory retirement and social security laws, has placed the elderly in a marginal and dependent position, in contrast to younger members of society.

In comparison to disengagement, activity and age stratification theory, exchange theory stresses that the decreased social interaction found in old age is an outcome of the relatively lower amounts of power enjoyed by the elderly in their social contacts within a youth-oriented society. However, like each of the other theories, exchange theory provides a particular view of the personal and social problems encountered by the elderly.

An overriding limitation of social exchange theory is the difficulty of defining what is rewarding or unrewarding behavior for an individual (Maddox & Wiley, 1976). What is felt to be an equitable social exchange for a social scientist (studying the elderly) may not be seen as rewarding by a particularly elderly individual. A shortcoming, therefore, of the exchange theory is that it basically relies on observed expectations of what is a fair exchange. Such a perspective fails to adequately account for individual or subjective notions of what is "fair" exchange. Notwithstanding this limitation, social exchange theory is presently enjoying support as a gerontologically relevant behavioral science theory.

Two Hypotheses: Leveling Versus
Double Jeopardy

Two "hypotheses," which are paradoxical to each other, have emerged in the social gerontological literature that compare male and female reactions to aging and the transition to old age.* One of these two hypotheses suggests that the transition to old age is more disconcerting and traumatic an experience for aging men. This argument supports the notion that advancing age acts as a leveler, where the situation of elderly men deteriorates to that of elderly women (Dowd & Bengtson, 1978). Stated differently, this leveling hypothesis suggests that as men age their life situations deteriorate at a more rapid rate than is the situation for aging women.

The alternative view expressed in the gerontological literature is that many of the inequalities characteristic of women's position in society tend to crystallize and worsen with advancing age. Thus, being elderly and female is conceived of as consisting of the additive effects of belonging to two

* While the leveling and jeopardy hypotheses have always included age within the context of social gerontology, the second stigmatized variable need not be gender. As will be seen, other variables have been employed, most notably "race." Also, more than two stigmatized variables might be explored together, as is the case with triple jeopardy. However, the prototype for the present dissertation research is the use of age and gender.

stigmatized statuses. This so-called double-jeopardy hypothesis portrays women's situation as increasingly becoming more negative or disadvantaged in later life relative to their male counterparts. In other words, the double-jeopardy hypothesis proposes that as women age, their situation deteriorates at an increasingly more rapid rate than the situation for aging men.

Each of these conflicting hypotheses will be described, and then the small amount of available empirical literature will be considered.

The Leveling Hypothesis

The leveling notion proposes that advancing age has an equalizing effect on male-female inequalities that have existed in mid-life. One argument in support of the leveling hypothesis is that women tend to have smoother individual life cycles; that is, their central roles tend to remain basically unchanged from girlhood to death (i.e., women are basically dependent on men financially and are also responsible for domestic matters). In contrast, men suffer abrupt losses of their "core" roles (as workers and providers) at retirement.

Cumming (1964), in comparing the effect of retirement on men with the effect of widowhood on women, proposes that the transition to widowhood for women

may be easier because widows have many peers in similar positions that can provide emotional support. It has also been suggested that aging is easier for women because it begins earlier and lasts longer and is, therefore, more of a gradual process (Beeson, 1975). Similarly, Blau (1973) proposes that retirement for men is more demoralizing because it reduces men's daily social contacts and represents an abrupt severance with a previously critical role.

A similar explanation for greater loss for men later in life has been linked to Erikson's (1963) formulation of ego development. Specifically, the adjustments made in aging are presented as a result of what Erikson calls "ego integrity" or "self acceptance." This psychologically-based explanation portrays older men as having adjustment problems that drive them to turn more inward and become more socially isolated. It has also been suggested that it is more difficult for men to adjust because they have trouble accepting the fatalistic view that only when a person accepts what has happened in the course of one's life as inevitable (sounds like disengagement theory), can one avoid despair and resolve the crisis of old age (Botwinick, 1978).

Also supporting the leveling hypothesis is the alternative view that women may better adjust to growing older because they are socialized to adjust to repeated role "discontinuities" at each stage of their life cycle (Kline, 1975). This perspective is in rather sharp contrast to the portrayal of women as acting out a highly stable, continuous role throughout life. According to Atchley (1972), women are under more stress to assume conflicting priority roles of "worker," "housewife," and "mother"; whereas "worker" is men's primary role for most of their lives. Thus, proponents of this alternative view argue that "role inconsistency" rather than "role consistency" may account for why women have greater resiliency in old age (and therefore the leveling hypothesis).

There are still other age-gender viewpoints that support a leveling hypothesis. For instance, it has been suggested that not only do women undergo role changes throughout their life cycle, but that there is an apparent role reversal process occurring between older men and older women. More precisely, Borgese (1973) and Guttman (1974) argue that men become less active and more dependent with increasing age. In contrast, women take a more active posture in controlling their

social environment in old age (Guttman, 1974).

Paralleling this view, Feldman, et al. (1980) have examined the changing roles of males and females throughout the family life cycle. They conclude that after the children have left home (i.e., the "empty nest" stage), men become more similar to women, with grandfathers becoming more compassionate and tender, while grandmothers acquire a higher sense of autonomy.

Most of the arguments in support of the leveling hypothesis have been theoretical in nature, often using some form of role loss to explain men's deterioration to a lowered level of status. However, Cool (1981) has recently presented evidence that supports an apparent role reversal process among older men and women. Specifically, her research suggests in a culture or subculture where emphasis is placed on men being productive, men tend to be less prepared for retirement and more devastated by the changes that accompany retirement and old age.

To sum up, there seems to be three distinctly different views that support the leveling hypothesis: (1) that women have a smoother individual life cycle, while men's adjustment to a restricted lifestyle is more difficult; (2) that women have more varied life-roles, while men's adjustment to retirement (their

only critical role) is very difficult; and (3) that a form of role reversal occurs in later life, where women gain control and men lose control. Beyond these major views that support the leveling notion, there has been only a very meager amount of research that supports this hypothesis.

The Jeopardy Hypothesis

In direct contrast to the leveling hypothesis, the jeopardy hypothesis predicts that along with advancing age there is a worsening of any inequalities existing between males and females in earlier life stages. While jeopardy can be thought of in terms of age-gender inequalities, it actually has a much broader horizon. In the gerontological literature, for example, there are frequent references to "double," "triple," and "multiple" jeopardy (e.g., Jackson, 1970; Palmore & Manton, 1973; Hendricks & Hendricks, 1977; Chappell & Havens, 1981). These descriptive forms of jeopardy refer to additive-negative effects of membership in more than one disadvantaged or stigmatized social category or grouping.

Double jeopardy, the most commonly cited form of jeopardy, refers to the occupation of any two stigmatized statuses which are characterized by greater negative consequences than the occupation of either

one alone (Dowd & Bengtson, 1978; Chappell & Havens, 1981). Within the context of age-gender differences (the issue of primary concern for this dissertation), the double-jeopardy hypothesis would exist if older males were found to be better off than older females as measured by such variables as life satisfaction (Larson, 1978), and mental health functioning (Kahn, et al., 1960). The double-jeopardy hypothesis also requires that evidence be provided that shows that as females age that their conditions deteriorate and that these differences between the sexes did not exist to such an extent at a younger age, or that females were in a better position than males when they were younger and this situation has changed as they aged.

As already noted, double jeopardy need not be in terms of age-gender differences. For instance, the minority aged (e.g., people who are both elderly and black), may experience a double personal-social burden since they occupy the dual negative stigmas of old age and racial inequality (Cowgill & Holmes, 1972). Similarly, Epstein (1973) has explored what it means to be both black and female.

Social gerontologists have also utilized the term "triple jeopardy," which denotes those individuals

occupying three disadvantaged or stigmatized status groupings at one time (Hendricks & Hendricks, 1977; Chappell & Havens, 1981; Penning, 1981). An example of triple jeopardy would be those people who are old, physically handicapped and members of a racial or ethnic minority. In a similar fashion, "multiple jeopardy" is the more generalized case of occupying two or more stigmatized statuses (Morgan, 1976; Chappell & Havens, 1981; Penning, 1981).

In order to more fully understand the jeopardy hypothesis, with its emphasis on the additive effects of occupying various stigmatized statuses, it is important for this dissertation research to briefly consider age and gender as stigmatized roles or statuses.

The Status of Aging: Men Versus Women

There is a growing body of literature describing the various forms of inequalities existing between men and women (deBeauvoir, 1953; Ellis, 1970; Morgan, 1970; Epstein, 1973; Payne & Whittington, 1973; Sommers, 1975; Posner, 1977; Abu-Labon, 1981). The major theme of such research stresses that a woman's position in society is based on "derived status." Specifically, that a woman's role in society rests largely on the position or status of the man with

whom she is associated, and that women are associated with "being" while men are more oriented towards "doing" (Beeson, 1975). As deBeauvoir (1953) indicates, women are often viewed as sex objects, while men are evaluated by their achievements in personal or professional lives.

Along similar lines, Posner (1977) proposes that women are cherished for their "personal fronts." Therefore, age-related changes in physical appearance (i.e., wrinkles, gray hair, etc.) are regarded by women as particularly negative conditions (reducing their "own" status).

In a sense, this double standard of physical attractiveness often creates more anxiety for women than men as they become older and lose their "youthful attractiveness." As a case in point of the additional burden borne by women, especially older women, Matthews' (1979) research indicates that to protect their self-image, older women frequently attempt to view their behavior and relationships as not typical of older women, since this is an effective strategy that enables them to maintain a positive self-identity.

There is an abundance of research evidence that suggests that although ageism affects both men and women, women are more vulnerable to a double standard

of aging. For instance, Sommers (1975) has explored the role of women who, as homemakers and volunteer workers, did not receive monetary rewards nor retirement benefits; when their husbands died, these homemakers were often left in a vulnerable position. Therefore, a pressing problem of the elderly is ageism compounded by sexism.

Other authorities indirectly support the double-jeopardy hypothesis when they suggest that older widows may have more difficulties than older retired men in coping with their life situations (Beeson, 1975; Hendricks & Hendricks, 1977). For instance, widows are often reduced to what Lopata (1973) called "the relatively functionless position of self-maintenance once their spouses and children are gone" (pp. 11-17).

Still further, Streib and Schneider (1971) report that retirement often does not have as negative consequences for many older men as had once been expected. Thus, men may not be as affected by the aging process as a good deal of the literature suggests. Beeson (1975) also proposes that there is little or no evidence for concluding that women's experiences with aging are easier and less demoralizing than men's. This argument would counter the notion that

since women are more accustomed to continued role loss throughout the life cycle (i.e., from worker, to mother, to housewife), they are more flexible in adapting to change in later life (Cool, 1981; Kline, 1975).

Beeson (1975) goes on to propose that the problems of women are often ignored by social gerontologists who concentrate on males, and that a phenomenological approach is more appropriate for probing the more unpublicized roles of aging males in our society.

Payne and Whittington (1976) also attribute some of the prevailing negative stereotypes to older women's less socially important role in society. The popular American image of older women being meek, ineffective, asexual old maids or widows tends to lead to various forms of discrimination which reinforce these very same stereotypes. Again, Payne and Whittington (1976) indicate that some of these stereotypes are misleading and they emerge because researchers often do not pay adequate attention to possible differences, and, thus, overgeneralize their findings.

Despite a generally limited body of literature, some of the problems of older women have been reported

on in the social gerontological literature. For example, Fillenbaum (1979) and Payne and Whittington (1976) have found that women have a generally poorer health assessment than do men. Greater poverty (Butler & Lewis, 1973), increased prevalence of living alone (Brotman, 1974), disadvantages with respect to remarriage (Butler & Lewis, 1973, 1979), and a lack of social support systems for widows (Barak, 1981), are also often cited as illustrations of the special stigmatized state of older women in American society.

When this "piecemeal" research that deals with who is better-off, older men or older women, is "added up," the outcome seems to be a dead heat. Indeed, the arguments supporting leveling and jeopardy are frequently based on the same observations; they are just expressed differently to make their point. This confusing situation makes it very difficult to draw any concrete conclusions from the conceptual and indirect empirical literature about the relative merits of the leveling versus double-jeopardy hypotheses.

In an attempt to establish a foundation for the research that was undertaken in this dissertation, the exceedingly small amount of social gerontological literature that directly examines aspects of the leveling versus the double-jeopardy hypotheses is

considered below.

Empirical Research: Leveling
Versus Jeopardy

One of the first empirical studies to directly test these two competing hypotheses examined the status of minority aged to see if the differences in selected "quality of life" variables between individuals with minority and majority status (i.e., blacks and Mexican-Americans versus whites) decreases or increases from middle to old age (Dowd & Bengtson, 1978). Specifically, to test these two competing hypotheses a series of dependent variables (including health, income, life satisfaction and social participation) were subjected to examination, with nine age/race categories serving as predictor variables. The results reveal that for health and income, the gap between minority-aged and their white counterparts increased significantly with increasing age -- with the greatest disparity occurring among those aged 65 years or older. These findings support the double-jeopardy hypothesis. Yet, when it came to measures of life satisfaction and frequency of contact with relatives (a measure of social participation), the extent of ethnic variation declined across age strata, indicating support of the

leveling hypothesis.

Chappell and Havens (1980, 1981b), in even more recent empirical research, have examined the leveling versus double-jeopardy hypotheses. In this case, however, they have operationalized the testing of these two competing hypotheses in terms of gender-related variations in aging -- which is more in keeping with the objective of this present dissertation research. To serve as criterion variables, they selected two different "quality of life" indicators. The first criterion variable, mental health functioning, they labeled an "objective" indicator, whereas the second criterion variable, "life satisfaction," they labeled a "subjective" indicator. Their sample of 4,300-plus Canadians 65 years of age or older, was divided by age and gender into a variety of young/old and old/old groups, with 75 years of age serving as the division point.

Their findings support the existence of double jeopardy for the objective indicator, but not for the subjective indicator (Chappell & Havens, 1980). Specifically, the old/old were found to have worse mental health functioning than the young/old, women had worse mental health functioning than men,

and older women were found to evidence worse mental health than older men.

In contrast, for life satisfaction (the subjective indicator), there was no significant differences between the various age-gender groups examined. Chappell and Havens (1980) suggest that the acceptance of the double-jeopardy hypothesis in the case of the objective indicator, and not in the case of subjective indicator, supports Dulude's (1978) contention that women are less likely than men to internalize their negative subjective situations.

A second level of analysis, employing a number of behavioral factors (i.e., perceived mental health, socioeconomic status, frequency of contact with friends), which might contribute to objective mental health disjunctioning, revealed that these factors tended to only contribute to explaining the deteriorated mental health of old/old women. In isolating older women, these results support the relevance of combining age/sex into composite categories, over the simple age or sex groups so frequently found in behavioral science research.

Not all research dealing with these two competing hypotheses has utilized two stigmatized variables. For instance, Palmore and Manton (1973)

investigated the combined effects of three stigmatized variables -- age, gender and race. These variables, which were combined both two at a time and three at a time, were related to income, occupation and education measures. Employing U. S. Census data for the period 1950-1970, they explored relative equality by means of an "equality index" (Palmore & Whittington, 1970, 1971). The results of measuring the effects of various combinations of disadvantaged statuses revealed that older women were particularly disadvantaged; and that older black women were most disadvantaged, as indicated by the lowest quality index scores. Palmore and Manton (1973) conclude that jeopardy situations do seem to exist, and that the joint effects of these disadvantaged statuses are additive regardless of which type of discriminators are combined.

In a similar fashion, Chappell and Havens (1981b) have also extended their analysis of their earlier research (Chappell & Havens, 1980) on double jeopardy to the exploration of a third stigmatizing variable (i.e., Canadian ethnic group memberships). The reanalysis reveals the existence of triple jeopardy; that is, old/old women belonging to a Canadian

ethnic minority group were significantly more disadvantaged than men of a comparable age group, or young/old persons of either sex.

To summarize these few empirical studies that directly test these two competing hypotheses, there seems to be at least limited support for the existence of a jeopardy effect of aging. However, the findings are substantially weakened by the limited amount of research, the one or two cases that suggest the existence of leveling, and the several cases that do not support either hypothesis. Even the discrepancy existing between objective and subjective measures of well-being tend to cloud the conclusions at this early point in the researching of the topic. Also, more research is needed that examines the possible normal changing conditions between the sexes with increasing age. In other words, nonstigmatizing or "natural" gender-related differences might also influence the differences found between older women and older men.

CHAPTER 4

RESEARCH DESIGN

This chapter considers the following research design and methodological issues of conducting the dissertation research: (1) a description of the sample, (2) the questionnaire, (3) the research model, (4) a discussion of the variables, (5) the geographic divisions, (6) the hypotheses, and (7) analysis procedures.

Description of the Sample

The overall data base from which the sample and various subsamples were drawn for this dissertation is a stratified simple random sample representative of the geographic area comprising the continental United States. The sample employed consisted of approximately 16,000 males and females who were 55 years of age and older. The sample was limited to those respondents who were either the head of household or the spouse. Minority members were eliminated, for initial analysis indicated that the cell sizes were frequently too small for the type of analysis anticipated; and, most important, it was really

the intention of the research to focus on age-gender differences.

A particular strength of the 15,000+ data base was that the sample was large enough to enable analysis of specific geographic market areas. In effect, the continental United States has been divided into over-120 non-overlapping geographic strata (i.e., 39 principal cities, 33 associated suburban areas, 50 states and/or remainder of states). This characteristic of the data base made possible the testing of the competing hypotheses within different urban/suburban market areas -- which constitutes the unique segmentation state of the analysis.

Access to the data base was provided by a major Fortune 500 company that is recognized for its technological development and marketing of communication-oriented products and services. The company in general, and the management who oversee the research unit that is responsible for the consumer data base, have a history of assisting established scholars and Ph.D. dissertation students who have worthy research topics.

The Questionnaire

The questionnaire has gone through a number of revisions during the past ten years of its "life."

In its present version, it is a meticulously designed and researched eight page questionnaire that measures the following broad categories of consumer and product/service-relevant information:

1. A number of variables measure the physical characteristics of the respondent's dwelling which are germane to the firm's product and service categories.
2. A battery of individual and family demographic variables.
3. A custom inventory of over 70 general (life-style) and product/service-specific psychographic items.
4. A series of questions measuring specific product and service usage behavior which augments other usage data acquired as part of the firm's normal course of doing business.

The specific variables drawn from the questionnaire that were employed in the dissertation research are described later in this chapter.

The Research Model

The simple model followed in conducting the analysis for this dissertation research concentrated on the testing of the leveling versus double jeopardy hypotheses (see Figure 2). As depicted, the dependent variables included a variety of established correlates of subjective well-

FIGURE 2
A MODEL OF THE PROPOSED RESEARCH



being or life satisfaction, and a number of consumer-related proxy variables.

As noted in the first chapter, the lack of a standard measure of subjective well-being or life satisfaction to serve as one of the dependent variables is a major limitation of employing a pre-existing data base; however, fortunately there are a number of established correlates (e.g., socioeconomic status and social integration) that are available to serve as proxies (Larson, 1978). The independent variable was a six category age-gender scheme described later in this chapter.

In addition to the overall examination of the two conflicting hypotheses, it seemed highly instructive to determine if specific geographic areas, with possible distinctly different traits, expressively influence the relationships to be explored. It is anticipated that such geographic analysis could provide a dual function: (1) as a form of market segmentation analysis of the firm's product and service customers -- based on the different age-gender categories, and (2) as a descriptive tool to get behind the initial overall analysis where the research might provide evidence favoring either leveling or double jeopardy.

Specifically, sufficient data was available to contrast fourteen matched urban and surround suburban areas (e.g., urban Atlanta versus suburban Atlanta).

If meaningful and systematic differences are found between geographic areas and/or between urban and suburban areas, this information would be useful for future market segmentation analysis.

Discussion of Variables

As reflected in the simple model presented at the beginning of the chapter, the dependent variables consisted of a number of established correlates and a number of consumer-related proxies of subjective well-being. The independent variable in the present study was a six-category age-gender scheme. A discussion of these variables follows.

The Dependent Variables

The selection of the variables which served as the dependent variables for this dissertation research were derived from the social gerontological literature already reviewed in earlier chapters. As a background for the discussion of the specific correlate and proxy variables employed in the present dissertation research, it is important to briefly explore how subjective well-being has typically been measured in social gerontological research, and to consider the various established behavioral-demographic correlates.

Subjective Well-Being

As the literature review in Chapter III testifies, subjective well-being is a well established summary construct within the social gerontological literature. Under its umbrella have been included such specific measures as: "life satisfaction," "happiness," "contentment," "adjustment," and "morale;" each with numerous specific operational variations. Cast in this central role, it is no wonder that subjective well-being is at once an important and fuzzy construct; one with boundaries quite difficult to delimit.

Consistent with this role, it is possible to think of subjective well-being as some form of self-assessment of personal adjustment or satisfaction with life. It is important to recognize that the assessment does not necessarily measure objective reality. It instead reflects a personal sense of reality. For instance, a person might objectively be judged by a team of physicians to be in "good health," but the individual might assess his or her own health as "poor." Since we are considering perceived or subjective well-being, the individual's perspective would prevail here.

Popular Measures of Subjective Well-Being

Multi-item and multidimensional measures of subjective well-being have been used as dependent variables in a large

number of studies concerned with various aspects of the personal and social adjustment of older people (e.g., Chappell & Havens, 1981; Dowd & Bengston, 1978; Toseland & Sykes, 1977). Table 2 summarizes seven of the most popular of these subjective well-being scales. Of these seven measures, the Neugarten et al (1961) 20-item Life Satisfaction Index A (LSIA), as well several revisions (i.e., Adams, 1969; Woods et al, 1969) have been the most widely used in the study of older individuals (e.g., Hoyt, et al, 1980; Edwards & Klenamack, 1973; Markides & Martin, 1979; Wolk & Telleen, 1976). These LSIA derived scales have even been employed in several recent studies dealing with the subjective well-being of the elderly as consumers (e.g., Bearden, et al. 1978; Barnes, 1979; La Forge, 1980). Neugarten et al (1961) claim that the original 20-item LSIA measure captures the following five specific dimensions of life satisfaction: (1) zest versus apathy, (2) resolution and fortitude, (3) congruence between desired and achieved goals, (4) self-concept, and (5) mood tune.

Table 3 reproduces Adams (1969) 18-item modification of the original 20-item LSIA scale. To accommodate older respondents the various versions of the LSIA scale are normally measured along a three-point Likert-like scale (i.e., "agree," "disagree," and "?").

Table 2

MAJOR MEASURES OF THE SUBJECTIVE WELL-BEING OF OLDER PEOPLE

Measure	Operationalization of the Construct	Reliability Statistics	Validity Statistics
Attitude inventory Cavan et al., 1949	A)satisfaction in relation to: 1)family, 2)friends, 3)work, 4)recreation, 5)religion, 6)social organizations, 7)health, 8)economic status B)general happiness C)feelings of usefulness	$r=.72$ test-retest correlation(1 mo) $r=.90$ odd-even correlation	$r=.77$ correlation to a scale of happiness
Life Satisfaction Index A(LSIA) Neugarten et al., 1961 (revisions suggested by Adams, 1969, and Wood, Wylie, & Sheafer, 1969)	A)zest vs. apathy B)resolution and fortitude C)congruence between desired and achieved goals D)self-concept E)mood tone	KR20=.79 for 13-item LSIA	$r=.55$ cor. to inter- viewers' LSR ratings $r=.57$ cor. to inter- viewers' LSR ratings for 13-item LSIA
PCG Morale Scale Lawton, 1972(re- visions suggested by Lawton, 1975)	A)sense of satisfaction with self B)feeling there is a place in the world for self C)acceptance of what cannot be changed	KR21=.81(matched items $r=.75$ test-retest(3 mo.) $r=.91$ (5 weeks)	$r=.57$ correlation to interviewers' LSR ratings

Source: Adapted from: R. Larson, "Thirty Years of Research on the Subjective Well-Being of Older Americans," Journal of Gerontology, 33 (January 1978), 111.

Table 3

THE 18-ITEM MODIFICATION OF THE LSIA SCALE

1. As I grow older, things seem better than I thought they would be.
2. I have gotten more of the breaks in life than most of the people I know.
3. This is the dreariest time of my life.
4. I am just as happy as when I was younger.
5. My life could be happier than it is now.
6. These are the best years of my life.
7. Most of the things I do are boring or monotonous.
8. I expect some interesting and pleasant thing to happen to me in the future.
9. The things I do are as interesting to me as they ever were.
10. I feel old and somewhat tired.
11. As I look back on my life, I am fairly well satisfied.
12. I would not change my past life even if I could.
13. Compared to other people my age, I make a good appearance.
14. I have made plans for things I'll be doing a month or year from now.
15. When I think back over my life, I didn't get most of the important things I wanted.
16. Compared to other people, I get down in the dumps too often.
17. I've gotten pretty much what I expected out of life.
18. In spite of what people say, the lot of the average man is getting worse, not better.

Source: D. Adams, "Analysis of a Life Satisfaction Index," Journal of Gerontology, 24 (1969), 470-474.

Taken as a group, the various measures of subjective well-being (e.g. those reviewed in Table 2) seem to be tapping a common core construct; that is, there is evidence of a consistent relationship between the specific subjective well-being measures (Lohmann, 1977). However, subjective well-being measures are not without their drawbacks. Specifically, Larson (1978) has identified the following two limitations:

1. The same overall score may be produced for two widely different groups (i.e., young college students and people 60-plus age); thus, masking important variations in response to specific clusters of items (Lieberman, 1970).

2. They are not sensitive enough to provide sufficient depth of insights about the well-being of individual respondents. Thus, while groups of elderly might be accurately portrayed, it is doubtful if these measures would provide a sufficiently detailed portrayal of individuals.

Notwithstanding these limitations, it would have been desirable to include one of the popular reduced versions of the LSIA scale as part of the present research. This was unfortunately impossible, since a secondary data base (one which did not contain this or any other recognized measure of subjective well-being) was employed to carry-out this dissertation research. However, as already noted, there

are fortunately a number of established correlates of subjective well-being which were available as part of the data base; and a number of psychographic scales which seemed to have the potential to serve as surrogates for subjective well-being.

Correlates of Subjective Well-Being

There is an ongoing tradition in social gerontology to search for an association between scores on established well-being scales and more focused, objective and readily available behavioral and socioeconomic variables. The primary objectives of this research seem two-fold: (1) to attempt to identify the range of specific "life situations" that influence the well-being of older people (Toseland & Rasch, 1979-1980); and (2) to identify a variety of more direct and easy to measure behavioral and socioeconomic factors that may serve as suitable substitutes or proxies for the more abstract multi-item well-being measures. Clearly these two objectives are closely interrelated and reinforcing.

While many specific variables have been explored as possible correlates of subjective well-being, it is possible to categorize most of these factors into three broad categories -- health factors, socioeconomic factors and social-activity factors. In a comprehensive review, Larson (1978) comes to the following major conclusions about

the relationship between each of these three categories of correlates and subjective well-being scores:

1. Health factors (e.g., perceived change in health, self-rating of health, and physicians' rating of health) have the strongest relationship of any of the correlates of subjective well-being. A positive relationship between health ratings and well-being is indicated; that is, those elderly who are in better health (objectively or subjectively estimated), score higher on subjective well-being than those in poor health (e.g., Edward & Klemmack, 1973; Palmore & Luikart, 1972).

2. Socioeconomic status (SES) and related subfactors (e.g., current family income, education level and occupational status) are also among the most popular and successful correlates of subjective well-being. A positive association between overall and/or specific socioeconomic variables and subjective well-being has consistently been found; that is, those elderly who have higher SES scores (or more family income, or higher occupational status, or more education) have higher subjective well-being scores than those with lower SES levels (e.g., Cutler, 1973; Louis Harris, 1975). Employment status, a related factor, has also generally been found to be positively related to subjective well-being; that is, those elderly who are working outside of the home tend to score higher on subjective well-being measures than those retired or unemployed (e.g., Edward

& Klemmack, 1973; Louis Harris, 1975).

3. Social-activity factors (e.g., social participation, church and civic group memberships, and contacts with friends and relatives) is the third most closely related group of variables with subjective well-being. Again, a positive relationship has been found between the extent of involvement, participation and contact with others and older people's subjective well-being scores (e.g., Wylie, 1970; Smith & Lipman, 1972).

Larson (1978) reports weaker and less clear-cut results when surveying the literature that examined the relationship between subjective well-being and sex, age, marital status and race. Table 4 presents in summary fashion the range of correlations (r) and proportion of variance explained (r^2) for various life situation correlates of subjective well-being.

Dependent Variables Employed in the Present Research

An important task of this dissertation was to identify potentially fruitful items and variables from the data base that might serve as substitutes for a standard subjective well-being scale. Matching the variables available from the data base with those promising correlates discussed in the social gerontological literature was the approach employed.

Table 4

SUMMARY OF CORRELATIONS OF MAJOR LIFE SITUATION VARIABLES
WITH SUBJECTIVE WELL BEING MEASURES

LIFE SITUATION VARIABLE	CORRELATION TO WELL-BEING	PROPORTION OF VARIANCE IN WELL-BEING "EXPLAINED" BY VARIABLE (r^2)
Health, physical disability	$r = .2$ to $.4$	4% to 16%
Socioeconomic variables	$r = .1$ to $.3$	1% to 9%
Age	$r = .0$ to $.1$	0% to 1%
Race	$r = .0$ to $.1$	0% to 1%
Sex	$r = .0$ to $.1$	0% to 1%
Employment	$r = .0$ to $.1$	0% to 1%
Marital status	$r = .1$ to $.2$	1% to 4%
Transportation	$r = .1$ to $.2$	1% to 4%
Housing	$r = .1$ to $.2$	1% to 4%
Social activity	$r = .1$ to $.3$	1% to 9%

Source: R. Larson, "Thirty Years of Research on the Subjective Well-Being of Older Americans," Journal of Gerontology, 33 (January 1978), 116.

Initially the following fourteen variables were identified:

SES and Related Factors

- .SES Income Score (SESINC)
- .SES Occupation Score (SES OCC)
- .SES Education Score (SESEDU)
- .Number Employed Family Members (NOEMPLY)
- .Expected Future Financial Position (MORMONEY)

Social-Activity Factors

- .Number of Family Members (FAMSIZE)
- .Regular Calling of Friends and Relatives (PSYCHO #1)
- .Active Long Distance Calling (PSYCHO #2)
- .Need Several Phones (PSYCHO #3)
- .Home Decorating Concerns (PSYCHO #4)
- .Number of Local Calls (LOCALLS)
- .Perceived Local Telephone Usage (LOUSAGE)
- .Monthly Dollar Long Distance Calling (TOLLS)
- .Monthly Number of Long Distance Calling (MSGs)

These two groups of correlate and proxy variables corresponds to two of the three categories of correlates singled-out by Larson (1972) in his review of subjective well-being. A brief discussion of each of the fourteen correlate and proxy variables selected to serve as candidate substitutes for a subjective well-being measure follows.

1. SES Income Score. This socioeconomic variable was based on responses to the following family income question:

So that we can analyze this study by broad income groups, please indicate your approximate family income for 198X by checking one of the following income categories:

\$3,000 or under	(3)
\$3,001 to \$5,000	(10)
\$5,001 to \$7,500	(17)

\$7,501 to \$10,000	(27)
\$10,001 to \$12,500	(38)
\$12,501 to \$15,000	(49)
\$15,001 to \$17,500	(59)
\$17,501 to \$20,000	(68)
\$20,001 to \$25,000	(79)
\$25,001 to \$30,000	(87)
\$30,001 to \$40,000	(93)
Over \$40,000	(98)

For the readers information only, the parenthesis next to each of the twelve income categories contains the SES score that reflects the distribution of the cumulative percentage of incomes in the entire data base (not just those 55 years of age and older). The score assigned to each income category was the midpoint of the cumulative percentage interval for the category. For instance, the SES score "49" corresponds to the midpoint of the cumulative interval between \$12,500 (the top of the previous category) and \$15,000. This procedure is based on guidelines suggested by the U.S. Bureau of the Census (1960), as modified by Ellis (1975). It creates a kind of relative status weight for each income category, and all respondents who select that particular category.

2. SES Occupation Score. This variable was based on the following question:

Please check the appropriate box to indicate the category which best describes the correct occupation of the head of household. (Occupations are given for each category only as examples.)

Professional or Technical.....(91)
 (Engineer, scientist, doctor, teacher,
 clergy, lawyer, etc.)
 Managers, Officials or Proprietors.....(74)
 (Executive, store manager, farm owner or
 manager, postmaster, other supervisory
 personnel, etc.)

Sales or Clerical Workers.....	(59)
(Secretary, bookkeeper, bank teller, cashier, postal worker, telephone operator, salesperson, etc.)	
Craft Workers and Foremen.....	(48)
(Carpenter, plumber, engraver, line installer and repairer, radio and TV repairer, mechanic, baker, upholsterer, etc.)	
Operators.....	(31)
(Deliveryman, brakeman, factory worker, welder, parking attendant, textile weaver, mine worker, etc.)	
Service Workers.....	(39)
(Barber, police officer, practical nurse, airline flight attendant, janitor, cook, housekeeper, etc.)	
Laborers.....	(25)
(Farm worker, longshoreman, warehouse laborer, etc.)	
Student.....	(66)
Homemaker.....	(18)
Retired.....	(8)
Unemployed.....	(21)

(Note: Military and government employees should select the category above that is most appropriate.)

As was the case with each of the SES income categories, the number in parenthesis next to each of the eleven occupational-status categories reflects the cumulative percentage of occupations of the heads of household in the entire data base. Again, the score assigned to each occupational category was the midpoint of the cumulative

interval for the category. The procedure enables the creation of a relative status weight for each occupational category.

3. SES Education Score. This third socioeconomic variable was based on the following question:

Please check the appropriate box to indicate the highest grade attended or degree received by the head of household.

Some grade school	(2)
Grade school completed	(7)
Some high school	(16)
High school completed	(36)
Some college	(62)
College graduate	(81)
Some graduate work	(90)
Master's or doctorate degree	(96)

The number in parenthesis alongside each education-level category indicates the cumulative percentage distribution of education-completed for the heads of household in the entire data base. This score assigns to each educational category the midpoint of the cumulative interval for the category. As with the two other SES variables, the procedure allows for the creation of a relative status weight for each educational level.

4. Number Employed Family Members. This variable was developed by simply summing the number of family members that the respondent indicated were working either full- or part-time. The variable was viewed as an alternative socioeconomic measure.

5. Expected Future Financial Position. This variable was measured by the following single psychographic item:

"I will probably have more money to spend next year than I have now."

It was measured on a five-point Likert scale with the extreme points anchored "completely agree" and "completely disagree," and the midpoint labelled "neither agree nor disagree." The item was thought to reflect a kind of optimism (or pessimism) about one's future financial position, and thus should be related to subjective well-being.

6. Number of Family Members. This demographic variable was conceived to be a simple measure of the social-activity factor. It was established by summing the number of family members residing within the household. The variable was included because it was felt that the more family members present in the household, the more opportunity there was for social interaction and the less likely was social isolation.

7. Regular Calling of Friends and Relatives. This is one of four multi-item psychographic scales that were anticipated to capture the social-activity dimension of subjective well-being. This particular psychographic

scale consisted of the following two items:

I think it is important to call some relatives
on a regular basis.

I think it is important to call some friends
on a regular basis.

Since the two items were measured on a five-point Likert agreement scale, a respondent could have a score between "two" and "ten." It was expected that these two items captured an element of the respondent's social interaction. A factor that other research indicates is associated with subjective well-being. Indeed, several researchers have employed telephone conversations as a dimension of social interaction (Edwards & Klemmack, 1973; Graney & Graney, 1974; Palmore & Kivett, 1977).

The reliability and validity of this and the three other multi-item psychographic scales is considered in the next chapter as part of the discussion of the findings.

8. Active Long Distance Calling. This psychographic measure of social-activity initially consisted of the following five items:

I need several telephones in my home because of my work/business.

I spend a lot of time talking on the telephone.

I probably make more long distance calls than most people I know.

I frequently wish I had a telephone in my car.

We live a long way from our friends and relatives.

It was designed to capture a variety of social activities that centered around using the telephone as an instrument for maintaining social and business contacts. Since there were five items, a respondent's score could range from "five" to "twenty-five."

9. Need Several Phones. This third psychographic scale consisted of the following two items:

My home is small so I don't need more than one telephone.

I prefer to have several telephones in my home as a convenience.

Like the two previous psychographic scales, these two items were designed to capture a dimension of respondents' interest in maintaining social contacts. However, in this case a less direct approach was taken since the focus was on the instrument (the telephone) and not the outcome (the calling). Since there were two items, a respondent could acquire a score between "two" and "ten."

10. Home Decorating Concerns. This final psychographic scale represents a more indirect attempt to gauge respondents' sense of social interests and social activity. It was measured by the following items:

I would probably redecorate one or more rooms in my home during the next year or two.

Guests frequently comment on how my home is decorated.

The purpose was to secure a measure of personal interest in maintaining a socially attractive household for home

entertainment. Admittedly, this scale might be biased in favor of female respondents, since our society tends to emphasize such a concern as primarily a female issue.

11. Number of Local Calls. This variable is one of four variables that were selected to more directly reflect respondents' local and long distance calling, and the use of the telephone as an instrument which promotes social contact. The variable was measured using the following question:

Normally, how many local calls do you
and your family make from your home?

Less than 1 call a day _____

Call(s) a day _____

The actual number of local calls reported by each respondent was used as the individual's score on this variable.

12. Perceived Local Telephone Usage. This companion variable measured a more perceived or subjective aspect of local calling. The question asked respondents was:

Compared to your friends, how would you
rate yourself and your family in regard
to your telephone usage for local calls?

infrequent callers.....(1)
less than average callers...(2)
average callers.....(3)
above average callers.....(4)
very heavy callers.....(5)

Its purpose was also to capture a sense of the respondent's perception of the degree of personal and family contact with others within the local community.

The numbers in parenthesis reveal how the question was scored.

13. Monthly Dollar Long Distance Calling. This variable was designed to serve as a gauge of respondents' non-local or long distance social communication. It was not measured as part of the questionnaire, but rather a three-month average of the household's long distance calling was supplied by the various operating telephone companies located throughout the country. An individual household might have no long distance charges for the three month period (reflecting no long distance calls), or it might have a bill for over a hundred dollars worth of calls (a long distance bill of \$15 is about average).

14. Monthly Number of Long Distance Calling. This alternative to a dollar amount of long distance calling was also supplied by the various operating telephone companies. It reflected the specific average number of long distance calls that were made by members of the household during the prior three month period.

This measure is conceivably superior to the dollar amount of long distance calling, since it better reflects the number of people contacted. Also, since the dollar amount might constitute one long telephone conversation or ten short telephone conversations, the present measure side-steps this problem. However, both these measures

fail to capture incoming phone calls, which is also an important component of social contact via the telephone. Unfortunately, a measure of incoming calls was not available.

Table 5 classifies the two categories of surrogates of subjective well-being into four types of variables depending on their nature and how they are measured. Specifically, the "objective" self-report items asked respondents to recall and report socioeconomic and demographic types of information. In contrast, the multi-item psychographic scales asked respondents to reveal their attitudes and orientations about telephone calling, telephone equipment and home decorating. The third group of variables are single-item perceptual measures of local calling and future financial position. Finally, the fourth group of variables constitute actual long distance calling behavior (dollars spent and calls made). These two measures are quite uncommon in that they did not rely on respondents' memory, but rather were gathered as an outgrowth of the firm's normal and automatic billing procedures.

This informal content analysis of the types of variables examined in this dissertation research reveals a diversity of types of measures, which is a desirable psychometric property.

The Independent Variable

The independent variable consists of the six age-

Table 5
SURROGATE MEASURES OF SUBJECTIVE WELL-BEING

	Socioeconomic and Related Factors	Social- Activity Factors
"Objective" Self-Report Items	.SES Income Score .SES Occupation Score .SES Education Score .Number employed in Household	.Number of Persons in the Household
Psychographic Items		.Call Friends & Relatives Regularly .Active Long Distance Calling .Need for Several Phones .Home Decorating Concerns
Perceived Behavioral Items	.Expected Change in Financial Position	.Number of Local Calls .Perceived Level of Local Calling
Independently Measured Actual Behavior		.Dollar Amount of Long Distance Calling .Number of Long Distance Calls

gender categories indicated in Table 6. These six categories were not arbitrarily selected, rather they were chosen after careful review of the available social gerontological literature. Indeed, it is noteworthy that some prior research testing the leveling-double jeopardy hypotheses has contrasted the 55-64 age group (i.e., "mature-adults") and the 65-plus age group (Dowd & Bengston, 1978); whereas other research has contrasted the 65-74 age group (i.e., "young-elderly") and the 75-plus age group (i.e., "old-elderly") (Chappell & Havens, 1980). However, this dissertation research is the first study with a sample of sufficient size and dimension to accommodate three major age categories (i.e., 55-65, 65-74 and 75-plus).

Geographic Divisions

As already indicated, one of the goals of this dissertation was to determine if various geographic divisions influence the presence of leveling versus double jeopardy. Such an exploration was considered to be especially important since almost no attention has been given to the impact of geographic factors in prior research on the leveling-double jeopardy controversy (an exception is Chappell & Havens, 1981).

In order to pursue the question of the influence of geographic location, the cooperating firm made available data at three specific levels of aggregation: (1) samples

TABLE 6
THE SIX AGE-GENDER CATEGORIES

		GENDER	
		Male	Female
AGE	55-64	Mature-Adult Males	Mature-Adult Females
	65-74	Young- Elderly Males	Young- Elderly Females
	75-plus	Old- Elderly Males	Old- Elderly Females

of the entire continental United States, (2) samples of overall suburban versus overall urban markets, and (3) samples of specific suburban-urban markets.

A preliminary examination of the geographic divisions suggested that it would be wise to limit the specific geographic analysis to fourteen metropolitan markets for which "matched" data for urban (i.e., inter-city) and surrounding suburban areas existed. The fourteen suburban-urban pairs that were selected to be included in the analysis were (in alphabetical order): Atlanta, Georgia; Boston, Massachusetts; Buffalo, New York; Chicago, Illinois; Denver, Colorado; Ft. Lauderdale, Florida; Los Angeles, California; Miami, Florida; New York City, New York; Philadelphia, Pennsylvania; Phoenix, Arizona; Pittsburgh, Pennsylvania; San Diego, California; and San Francisco, California. While certainly not all geographic areas are represented, the placement of the fourteen suburban-urban market pairs on the map in Figure 3 reveals that they capture a good portion of the major markets in the United States. Indeed, in terms of population concentrations, they capture most of the major markets.

Figure 3
FOURTEEN SUBURBAN-URBAN METROPOLITAN MARKETS EXAMINED



In addition to these fourteen metropolitan markets, the cooperating firm was also able to supply data from which overall samples representative of the entire country and samples representative of all suburban and urban markets within the geographic boundaries of continental United States could be drawn. All three of these geographic divisions meant that it was possible to contrast the relationship between surrogates of subjective well-being and age-gender categories at various levels of geographic aggregation. Unfortunately, the way the data was organized made it impossible to isolate a matched set of rural geographic areas for comparison.

Hypotheses

Based upon an extensive review of the age-gender social gerontological literature in Chapter 3, the following nine hypotheses were developed for testing:

Age-Related Hypotheses

- H₁: With increasing age, there will be a corresponding decline in scores on surrogates of subjective well-being.
- H₂: With advances in age from Mature Adults (age category 55-64) to Young-Elderly (age category 65-74), there will be a sharper decline in scores on surrogates of subjective well-being than the decline

from Young-Elderly (age category 65-74)
to Old-Elderly (age category 75-plus).

Gender-Related Hypothesis

- H₃: Females will score lower than males on
the surrogates of subjective well-being.

Age-Gender Related Hypotheses

- H₄: Older-females will score lower than
younger-females on the surrogates of
subjective well-being.
- H₅: Older-males will score lower than
younger-males on the surrogates of
subjective well-being.
- H₆: Younger-females will score lower than
younger-males on the surrogates of sub-
jective well-being.
- H₇: Older-females will score lower than older-
males on the surrogates of subjective well-
being.
- H₈: Younger-females will score lower than
older-males on the surrogates of subjective
well-being.

Geographic-Related Hypothesis

- H₉: Suburban dwellers will score higher than
urban dwellers on the surrogates of sub-
jective well-being.

With the exception of H₉, which deals with the
potential influence of suburban versus urban residents,
all of the other hypotheses consider one or more dimensions
of the relationship between age and gender; and, therefore,
test aspects of the leveling versus double jeopardy issue.

The underlying conditions which are necessary to accept (or reject) each of these two competing phenomenon need to be considered. In order for leveling to be judged to exist, the analysis would have to reveal the following condition:

If the difference in a dependent variable between males and females, in an older age group, is not as great as the difference between males and females, in a younger age group, this would indicate that age is likely to be exerting a leveling effect.

On the other hand, in order for double jeopardy to be judged to exist, the analysis would have to indicate the following condition:

If the difference in a dependent variable between males and females, in an older age group, is greater than the difference between males and females, in a younger age group, this would indicate that age is likely to be exerting a double jeopardy effect.

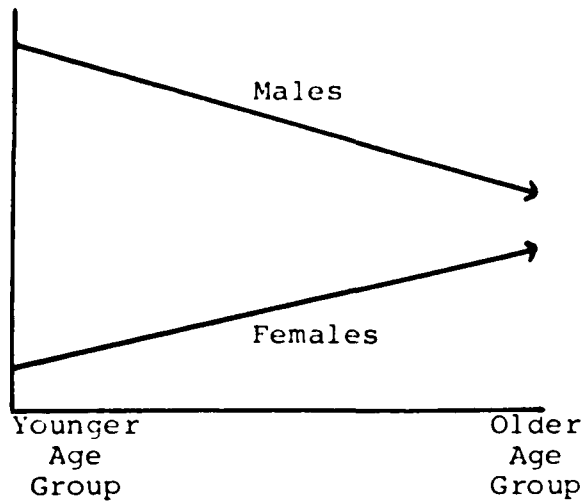
The distinction between the leveling and double jeopardy perspective is captured diagrammatically in Figure 4.

Hypothesis that proposed particular variations in the occurrence of leveling or double jeopardy for specific geographic divisions (i.e., suburban Phoenix versus urban Phoenix) were avoided because of a lack of an adequate amount of research upon which to base such

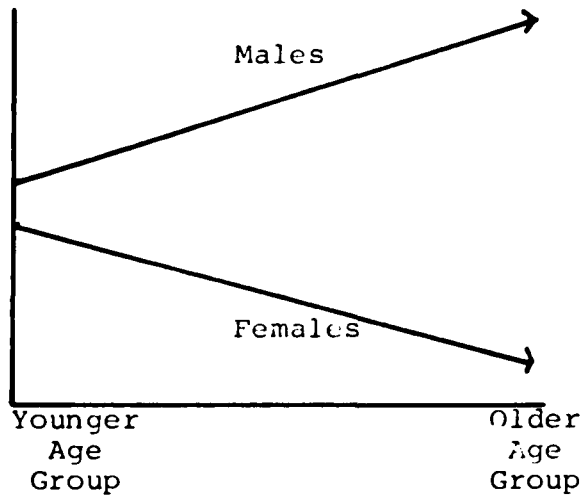
Figure 4

A COMPARISON OF LEVELING AND DOUBLE JEOPARDY

The Leveling "Hypothesis"



The Double Jeopardy "Hypothesis"



hypothesis. However, this dissertation research will "informally" (i.e., without hypotheses) explore the findings to see if any patterns exist between specific surrogates of subjective well-being and the existence of either leveling or double jeopardy. Similarly, the results will be examined to ascertain if any patterns exist between specific geographic divisions or specific metropolitan markets and the presence of either leveling or double jeopardy.

Analysis Procedures

A variety of analysis procedures were employed in this dissertation. First, during the initial exploratory investigation, factor analysis, correlational analysis and causal modeling procedures were used to isolate those independent variables to serve as surrogates for subjective well-being. Then, in order to test the specific hypotheses established as part of this dissertation research, the data were analyzed using dummy regression analysis and paired comparison t-tests.

A discussion of each statistical procedure employed, including the reasons for its use, is considered in the next chapter.

Chapter 5

DATA ANALYSIS AND RESEARCH FINDINGS

The methodology followed in conducting the research was presented in Chapter 4. In this chapter attention is directed to the data analysis and the research findings.

This chapter opens with an assessment of the psychographic surrogates of subjective well-being. The evaluation centers on the use of causal modeling procedures to ascertain the reliability and validity of the four psychographic surrogates defined in the preceding chapter. The discussion then moves on to a brief consideration of the use of dummy variable regression analysis, as well as a brief statement about the employment of paired comparison t-tests; the primary data analysis procedures used to test the nine hypotheses proposed in the last chapter. Next, the preliminary analysis process which led to a reduction in the number of surrogates of subjective well-being is considered.

The remainder of the chapter presents the findings of the analysis in a form designed to enable the testing

of the established hypotheses and to allow the additional informal exploration of some other less established or potential patterns of interest.

The implications of the findings, as well as a summary, conclusions, and suggestions for future research are considered in the next and final chapter.

An Assessment of the Psychographic Surrogates of Subjective Well-Being

As already noted, one important objective of this dissertation research was to develop a consumer-specific surrogate for subjective well-being from the psychographic items available from the data base. It was felt that psychographic surrogates would complement the more well established socioeconomic proxies, and possibly tap a distinctly different aspect of subjective well-being.

Four multi-item psychographic scales were initially identified (see the discussion in Chapter 4) on the basis of a series of factor analyses of all the available psychographic items. These four psychographic scales, which are summarized in Table 7, were selected for further examination because they seemed to best reflect aspects of social-activity or social involvement, a behavioral characteristic that has been shown in the

Table 7

FOUR PSYCHOGRAPHIC SURROGATES OF SUBJECTIVE WELL-BEING

<u>Scales</u>	<u>Name and Items</u>
Psycho 1	REGULAR CALLING OF FRIENDS AND RELATIVES .I think it is important to call some friends on a regular basis. (RELREGLR) .I think it is important to call some relative on a regular basis. (FRREGLR)
Psycho 2	ACTIVE LONG DISTANCE CALLING .I need several telephones in my home because of my work/business. (WORK) .I spend a lot of time talking on the phone. (LONGTALK) .I probably make more long distance calls than most people I know. (LONGDIST) .I frequently wish I had a telephone in my car. (TELCAR) .We live a long way from our friends and relatives. (LONGWAY)
Psycho 3	NEED SEVERAL PHONES .My home is so small I don't need more than one phone. (SMALLHOM) .I prefer to have several telephones in my home as a convenience. (TELCONV)
Psycho 4	HOME DECORATING CONCERNS .I will probably redecorate one or more rooms in my home in the next year or two. (REDECOR) .Guests frequently comment on how my home is decorated. (HOMEDEC)

social gerontological literature to be associated with subjective well-being (Wylie, 1970; Smith & Lipman, 1972). In fact, several of these sources even discuss the relationship between subjective well-being and telephone communication as an explicit dimension of social-activity (e.g., Edwards & Klemmack, 1973; Graney & Graney, 1974).

Thus, the first three psychographic scales, with specific reference to telephone behavior and usage, seemed to especially capture aspects of social contact associated with subjective well-being. The remaining two-item "home decorating concern" scale is admittedly more remotely associated with social activity. It was nevertheless included because it was felt to reflect perceptions about home appearance and home entertainment -- a dimension of social-activity.

In order to ascertain if the four psychographic scales were "psychometrically sound" measures, and could be used as proxies for some unavailable standard measure of subjective well-being, specific causal modeling methods used and recommended by Bagozzi (1981) were followed. Causal modeling was selected over other approaches for measuring validity and reliability because it explicitly takes into account measurement error.

Testing was operationalized by using LISREL (i.e., Analysis of Linear Structural Relationships), a maximum likelihood method, developed and popularized by Joreskog and Sorbom (1978).

The causal modeling procedures were employed to test the reliability and validity of the four psychographic surrogates of subjective well-being. In particular, they were used to assess convergent validity, reliability, construct validity and predictive validity.

Furthermore, since the goodness of fit test is directly proportional to sample size, it is likely that virtually all models will be rejected with very large samples. As the data base had approximately 16,000 cases, five subsamples were drawn of about 75 cases each, and the analysis was performed on these samples.

Convergent Validity

Convergence or convergent validity is the amount of agreement that is found between multiple measures of the same construct or variable. In the present research, the concern is with the amount of agreement between the various psychographic surrogates of subjective well-being.

The null hypothesis for the causal model of convergence for a multidimensional well-being construct can

be expressed as:

$$\begin{aligned} Y &= \Lambda f + \epsilon \\ \Sigma &= \Lambda \Phi \Lambda' + \Psi \end{aligned}$$

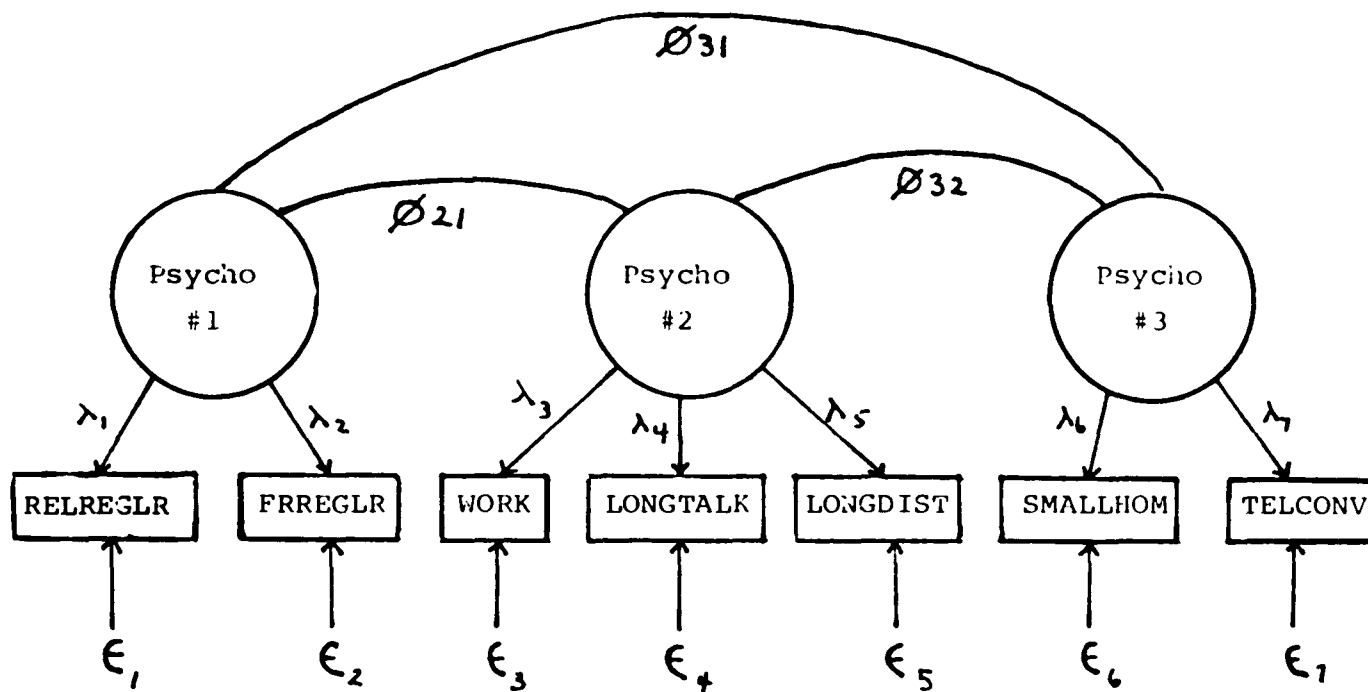
where, Y is a vector of p observations of well-being, $(y_1, y_2, \dots, y_p)$; f is a $k \times p$ vector of hypothesized well-being dimensions, Λ is a matrix of factor loadings relating Y to f ; and ϵ is a vector of errors in the variables. Σ is the variance-covariance matrix of observations, and Ψ is a diagonal matrix of error variances for well-being measures. Figure 5 shows the null hypothesis of convergent validity that is being tested.

Reliability

In the case of multiple item scales, such as the various psychographic surrogates of concern in this dissertation, reliability can be thought of as the extent of internal consistency existing among the set of items forming each particular scale.

In addition to employing the popular unidimensional Cronbach alpha measure of reliability (which is not a causal modeling procedure), the multidimensional true-score model of reliability developed by Wert, Linn and Joreskog (1974) will be employed. In keeping with this causal

Figure 5
A PATH MODEL DEPICTING CONVERGENT VALIDITY*



*Note: For simplicity, only the three psychographic scales that survived the initial analysis are shown above. Also, two items from the second psychographic scale (Psycho #2) were eliminated because the initial analysis revealed that the scale performed better minus these items. This process is considered further in the results section.

modeling approach, reliability of individual items can be obtained from

$$\rho_i = \frac{\lambda_i^2 \text{Var}(f_j)}{\lambda_i^2 \text{Var}(f_j) + \psi_i}$$

where ρ_i is the reliability of item i , λ_i is the factor loading related to the "i-th" well-being measures or its respective well-being dimension, f_j . Similarly, the reliability of a composite scale, denoted by ρ_c , comprised of n items, can be calculated as:

$$\rho_c = \frac{(\sum_{i=1}^n \lambda_i)^2 \text{Var}(f_j)}{(\sum_{i=1}^n \lambda_i)^2 \text{Var}(f_j) + \sum_{i=1}^n \psi_i}$$

Concurrent Validity

The degree to which a measure of a concept correlates with a measure of a similar concept when both should naturally convary is known as concurrent validity. Concurrent validity was ascertained by the degree of association between components of the socioeconomic status score (i.e., income, education and occupation) and the various psychographic surrogate measures of subjective well-being.

Figure 6 illustrates in the form of a causal diagram concurrent validity.

The null hypothesis for concurrent validity is:

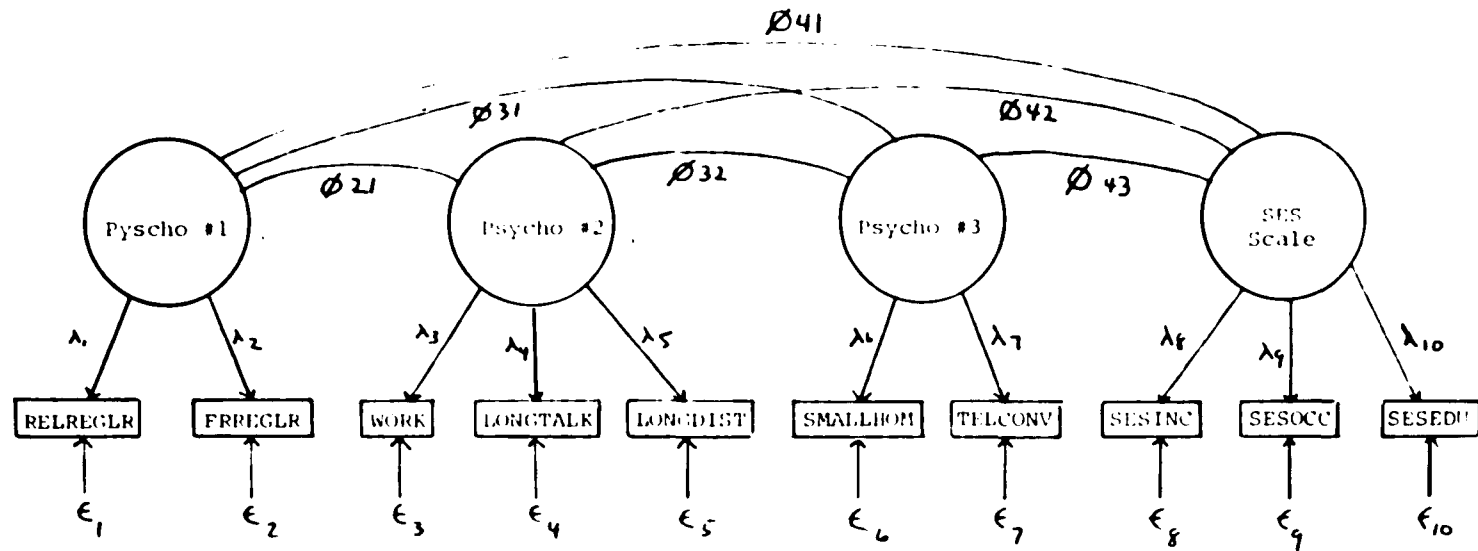
$$\begin{aligned} Y &= \Lambda f + \epsilon \\ \Sigma &= \Lambda \Phi \Lambda' + \Psi \end{aligned}$$

where $Y = (y_1, y_2, \dots, y_{10})'$, $f =$ (the specific psychographic scales and the specific socioeconomic status variables)', $\epsilon = (\epsilon_1, \epsilon_2, \dots, \epsilon_{10})'$.

This test for concurrent validity will be sustained when (a) the within-dimension correlations (between the various psychographic surrogates) are high, statistically significant, and uniform, and (b) the across-dimension correlations (between the psychographic scales and socioeconomic status factors) are uniform and lower than the within-dimensional values. Specifically, in Figure 6, ϕ_{31} , ϕ_{21} , ϕ_{32} , are larger, significant, and greater than ϕ_{41} , ϕ_{42} , ϕ_{43} , it can be concluded that we have achieved concurrent validity.

The system of equations describing Figure 6 are:

Figure 6
A PATH MODEL DEPICTING CONCURRENT VALIDITY*



*Note: For simplicity, only the three psychographic scales that survived the initial analysis are shown above. Also, two items from the second psychographic scale (Psycho #2) were eliminated because the initial analysis revealed that the scale performed better minus these items. This process is considered further in the results section.

$$\Lambda = \begin{array}{cccc}
 \text{Eq 1} & \text{Eq 2} & \text{Eq 3} & \text{Eq 4} \\
 \lambda_1 & 0 & 0 & 0 \\
 \lambda_2 & 0 & 0 & 0 \\
 0 & \lambda_3 & 0 & 0 \\
 0 & \lambda_4 & 0 & 0 \\
 0 & \lambda_5 & 0 & 0 \\
 0 & 0 & \lambda_6 & 0 \\
 0 & 0 & \lambda_7 & 0 \\
 0 & 0 & 0 & \lambda_8 \\
 0 & 0 & 0 & \lambda_9 \\
 0 & 0 & 0 & \lambda_{10}
 \end{array} \text{ and } \Phi = \begin{array}{cccc}
 & & & 1.0 \\
 \phi_{21} & 1.0 & & \\
 \phi_{31} & \phi_{32} & 1.0 & \\
 \phi_{41} & \phi_{43} & \phi_{43} & 1.0
 \end{array}$$

Key:

Eq 1 = Psycho 1

Eq 2 = Psycho 2

Eq 3 = Psycho 3

Eq 4 = Psycho 4

Predictive Validity

If a measure of a concept is related as an antecedent to, or a consequent of, a measure of another concept, then it is said to possess predictive validity.

As a predictor, the psychographic scales were used to forecast the "dollar amount of long distance calling" and the "number of long distance calls" (see Figure 7).

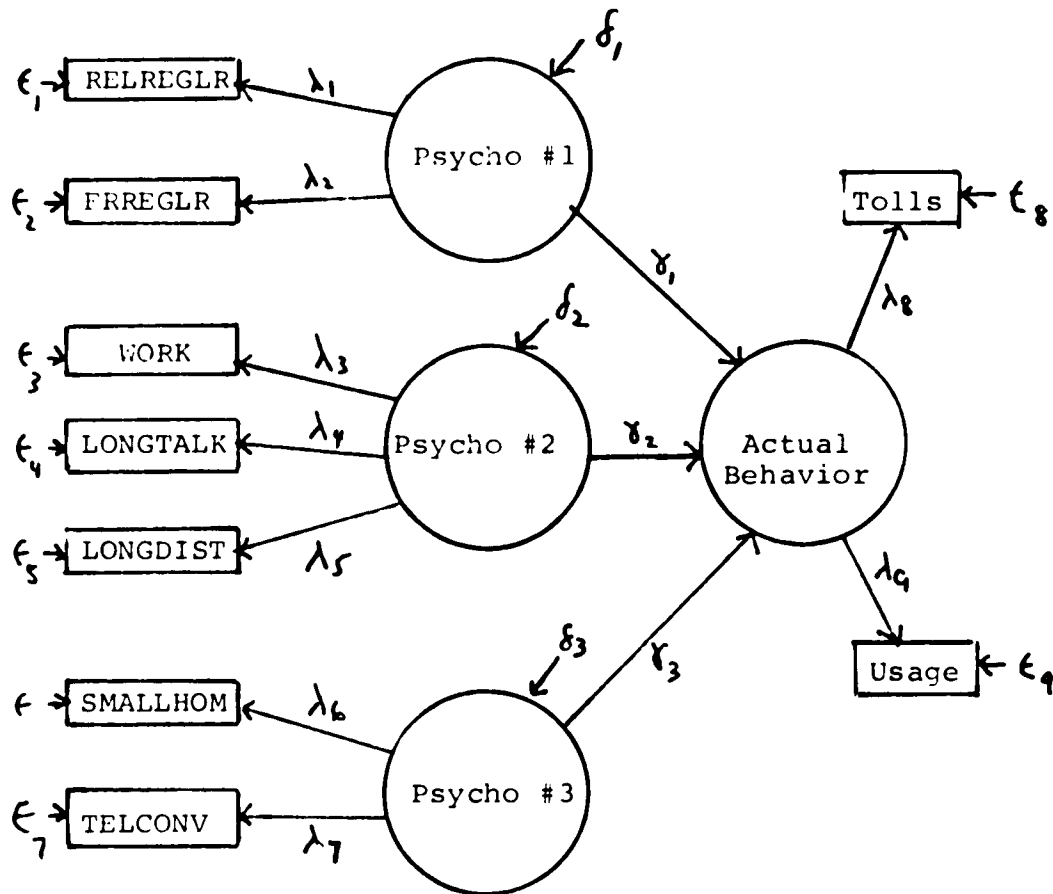
The structural equations for the null hypothesis of this model are:

$$\begin{bmatrix} \text{Actual} \\ \text{Behavior} \end{bmatrix} = [\gamma_1 \ \gamma_2 \ \gamma_3] \begin{bmatrix} \text{Psycho 1} \\ \text{Psycho 2} \\ \text{Psycho 3} \end{bmatrix} + \begin{bmatrix} \delta_1 \\ \delta_2 \\ \delta_3 \end{bmatrix}$$

Table 7 shows the four original psychographic scales, consisting of eleven variables. Since one normally desires to have reliable and valid scales, as well as parsimony, it is well established that reliability is a function of scale length. Therefore, a model comparison procedure as suggested by Bentler and Bonnet (1980) was used. The initial model for each of the five subsamples is shown below:

	PSYCHO 1	PSYCHO 2	PSYCHO 3	PSYCHO 4
RELREGLR	1	0	0	0
FRREGLR	2	0	0	0

Figure 7
A PATH MODEL DEPICTING PREDICTIVE VALIDITY*



*Note: For simplicity, only the three psychographic scales that survived the initial analysis are shown above. Also, two items from the second psychographic scale (Psycho #2) were eliminated because the initial analysis revealed that the scale performed better minus these items. This process is considered further in the results section.

WORK	0	3	0	0
LONGTALK	0	4	0	0
LONGDIST	0	5	0	0
TELCAR	0	6	0	0
LONGWAY	0	7	0	0
SMALLHOM	0	0	8	0
TELCONV	0	0	9	0
REDECOR	0	0	0	0
HOMEDEC	0	0	0	

(0 stands for fixed parameters, all others free)

The fit for the five subsamples were:

SUBSAMPLE	χ^2	df	P
One	69.46	38	.0014
Two	FUNCTION COULD NOT BE EVALUATED FOR STARTING VALUES.		
Three	37.58	40	.5797
Four	62.15	40	.0140
Five	97.78	42	.0000

This initial model was compared to the nested (reduced) model in Figure 5. Bentler and Bonnet (1980) suggested the normed incremental fit index: $\left(\frac{M_1 - M_0}{M_0}\right)$ as a method of assessing fit. The normed index will assume values between zero and one. The incremental fit for each of the

five subsamples is given below along with the significance level:

Subsample	Difference in χ^2	Difference in D. F.	Incremental Fit
One	52.82	26	.76
Two	---	--	---
Three	26.77	28	.71
Four	50.48	26	.81
Five	77.08	29	.79

With the exception of subsample two, for which conversion was achieved, the incremental indicies for the other four subsamples are satisfactory.

The Outcome of the Causal Modeling Procedures

As already noted, initial analysis revealed that the psychographic scale, "home decorating concerns" (psycho 4) was neither valid nor reliable, so it was deleted from further detailed analysis. Similarly, two of the five original items in the psychographic scale, "active long distance calling" (psycho 2) were also eliminated when initial analysis revealed that they detracted from the overall reliability of the scale. So the majority of

analyses were performed on the three remaining psychographic scales.

Convergence and Reliability

Tables 1 through 5 (the Appendix) show the results for convergent validity. Three of the five subsamples reveal fits greater than .50 (subsamples 2, 3, and 4). All loadings are larger and twice their standard error. The individual item reliabilities range from "low" to "acceptable" (.5 <). Most important, the scale reliabilities are quite larger in magnitude, which indicates that the three surviving psychographic scales (psycho 1, psycho 2 and psycho 3) show a high degree of internal consistency. Moreover, these results are confirmed by the unidimensional Crombach Alpha measures of reliability (see Table 6, the Appendix).

Concurrent Validity

Tables 7 through 11 (the Appendix) show the results for concurrent validity. In no case can the null hypothesis be rejected. The lowest fit is for subsample 1: $\chi^2 = 39.67$ (31 d.f.), $p = .137$.

Predictive Validity

Tables 12 through 16 (the Appendix) show the results for predictive validity. In three of the five subsamples the null hypothesis cannot be rejected (subsamples 2, 3, and 4). The dominant predictor is the reduced three-item "psycho 2" scale -- "Active Long Distance Calling," but a certain amount of its predictive strength may be due to multicollinearity.

In conclusion, across the five subsamples, the reduced set of these psychographic surrogates of subjective well-being tend to satisfy criteria of reliability and validity. This means that the researcher can feel more confident in employing these variables as surrogates for subjective well-being in the remainder of this results chapter.

Dummy Variable Regression With Two Qualitative Variables

In arriving at the primary statistical procedures for testing the presence (or absence) or leveling versus double jeopardy, it seemed desirable to take into account the specific qualitative characteristic of the two independent variables - age (in categories) and gender. Further, since it was, in part, the goal of the research

to explore both the main effects and the interaction effects of these two variables in terms of the predicted values of the surrogates of subjective well-being, it was decided that dummy variable multiple regression analysis should be used. This procedure, which is equivalent to analysis of variance, has the desirable properties of producing popular regression statistics (e.g., r^2), partitioning the variance into a more easily interpretable form, and providing predicted values which are equal to mean values of the dependent variable for each of the age-gender groups.

From the discussion of the independent variables in Chapter 4, it should be recalled that age was conceptualized as consisting of three relevant age categories (i.e., 55-64, 65-75, and 75+), and sex as a two-category variable. To create a set of appropriate dummy variables, each of the categories of these two qualitative variables were treated as a separate variable, and zero or a one was assigned as a score depending upon their presence (one) or absence (zero) in each category. However, the inclusion of all dummies for each variable is not appropriate since it produces redundancy in the data (i.e., singularity or a non-basic matrix). To avoid this problem, $k-1$ dummies are sufficient to specify a regression equation.

It was, therefore, necessary to exclude one dummy each from age and gender. The following reveals the zero-one configuration that creates values representing each category variable required to specify the main effects portion of the model:

<u>Types of Cases</u>	<u>Names of Dummy Variables</u>		
	<u>D₁</u>	<u>D₂</u>	<u>D₃</u>
65-74	1	0	0
75+	0	1	0
Male	0	0	1
Female	0	0	0
55-64	0	0	0

In the case of this dissertation research the gender category "female" was excluded (set equal to zero) from the gender variable, and age category 55-64 was excluded (also set equal to zero) from the age variable. However, this exclusion does not actually lead to a loss of information. In fact, the excluded category becomes a kind of joint reference point by which the effects of the other dummies can be interpreted.

With female, age 55-64 as the joint reference point, the predictive equation for the main effects portion

of the model is:

$$E(Y) = a + b_1D_1 + b_2D_2 + b_3D_3$$

In this case, were all D_i are set equal to zero, the mean predicted value of a surrogate of subjective well-being, $E(Y)$, is equal to "a" (the Y-intercept). Conceptually, the predicted values for those cases where each D_i takes on a value of one is depicted below:

<u>Age</u>	<u>Male</u>	<u>Female</u>
65-74	$a+b_1+b_3$	$a+b_1$
75+	$a+b_2+b_3$	$a+b_2$
55-64	$a+b_3$	a

These six predicted values can be interpreted as mean values of a particular surrogate of subjective well-being for the particular age-gender grouping.

In order to capture higher order effects, dummy variables representing the interaction effects of age and gender must be explicitly added. Specifically, if D_1 and D_2 represent dummy variables for age, and D_3 represents sex, then two additional dummy variables

D_4 = 65-74 year old males ($D_1 \times D_3$) and D_5 = 75+ year old males ($D_2 \times D_3$). The expanded multiple regression model would be:

$$E(Y) = a + b_1D_1 + b_2D_2 + b_3D_3 + b_4D_4 + b_5D_5$$

The predicted values for the six age-gender categories when interactions between age and gender are explicitly accounted for are:

<u>Age</u>	<u>Male</u>	<u>Female</u>
65-74	$a+b_1+b_3+b_4$	$a+b_1$
75+	$a+b_2+b_3+b_5$	$a+b_2$
55-64	$a+b_3$	a

Paired Comparison t-Test

As an adjunct to the dummy variable regression analysis that compared overall suburban and overall urban differences in the hypothesized relationships between age-gender and the surrogates of subjective well-being, it was decided that it would be insightful to further explore the data on the fourteen specific "matched" suburban-urban metropolitan markets by means of the paired comparison t-test.

The paired comparison t-test is a procedure that enables the researcher to contrast the difference between the means of two groups when the data are drawn from samples

that are somehow related, i.e., not independent (Berenson & Levine, 1979). For instance, in this dissertation research, suburban and urban predicted values (i.e., the outcome of the dummy variable regression analysis) represent the two groups of data that are related by the fact that they are paired or matched as to metropolitan market (e.g., Atlanta). Thus, in the present case, it is the fourteen metropolitan markets that are the links that relate suburban and urban data.

The following hypothetical tabular materials shows the basis for determining the paired comparison t-test:

<u>Market</u>	<u>Suburban</u>	<u>Group</u> <u>Urban</u>	<u>Difference</u> <u>(D)</u>
Atlanta	X ₁	Y ₁	D ₁ = (X ₁ -Y ₁)
Boston	X ₂	Y ₂	D ₂ = (X ₂ -Y ₂)
Buffalo	X ₃	Y ₃	D ₃ = (X ₃ -Y ₃)
.	.	.	.
.	.	.	.
.	.	.	.
San Francisco	X ₁₄	Y ₁₄	D ₁₄ = (X ₁₄ -Y ₁₄)

The equation for the paired comparison t-test is:

$$t_{n-1} = \frac{\bar{D}}{\frac{s_D}{\sqrt{n}}}$$

$$\text{where } \bar{D} = \frac{\sum_{i=1}^n D_i}{n} ; \quad S_D = \sqrt{\frac{\sum_{i=1}^n D_i^2 - \left(\sum_{i=1}^n D_i\right)^2}{n(n-1)}}; \text{ and}$$

n = sample size.

The Results

The remainder of this chapter focuses on the presentation of the main findings of this dissertation research. Attention is first directed to the initial dummy variable regression analysis that led to a substantial reduction in the number of surrogates of subjective well-being. This initial analysis is followed by an examination of the hypotheses set out in Chapter 4. Specifically, three primary levels of analyses are considered: (1) an overall exploration of the relationship between the age-gender independent variables and the several surviving surrogates of subjective well-being, (2) analysis contrasting overall suburban and overall urban geographic divisions, and (3) analysis contrasting fourteen specific matched suburban-urban metropolitan markets.

Reducing the Number of Surrogates

As discussed earlier in this chapter, one of the psychographic surrogates of subjective well-being, home decorating concerns (i.e., psycho #4), was eliminated as an outcome of the causal modeling procedures designed to

ascertain the reliability and validity of the psychographic measures. Since the remaining thirteen surrogates constituted an analysis burden, further steps were taken to attempt to reduce the number of surrogates.

Preliminary analysis using the dummy variable procedure to explore the relationship between the age-gender independent variables and the remaining thirteen surrogate dependent variables was carried out. To accomplish this task, five random samples consisting of 180 respondents each (i.e., 30 respondents in each of the six age-gender categories) were drawn from the overall sample which was made-up of respondents age 55 years of age and older.

The results of this initial analysis revealed that all but three of surrogates were problematic. Specifically, the analysis indicated that two of the socioeconomic variables (i.e., SES Education Score and Expected Future Financial Position) and all eight of the social-activity variables should be dropped from any further analysis because of either an insignificant overall F-test or a coefficient of determination (r^2) that was so small that the coefficients of the regression equations were not stable (e.g., changes in sign occurred).

The three surviving socioeconomic surrogates of subjective well-being that were revealed to have sig-

nificant overall F-tests, reasonably high r^2 values, and stability across the five random subsamples were: SES Income Scores, SES Occupation Scores, and Number of Employed Family Members. While the problem of analyzing too many variables was certainly eliminated, it was exceedingly unfortunate that none of the consumer-related psychographics and none of the telephone usage variables that comprised the social-activity factors survived this initial analysis.

From this point on, all subsequent analysis and hypothesis testing focuses on the three surviving socioeconomic surrogates of subjective well-being.

Results at the Overall Level

The first level of analysis consists of testing the first eight hypotheses that deal with various aspects of the relationship between age-gender and the three surviving surrogates of subjective well-being. This is the most aggregate level of analysis, without regard to specific geographic divisions. To accomplish this, a random sample consisting of approximately 1,800 respondents (i.e., 300 in each of the six age-gender categories) was selected from the overall sample of 16,000-plus respondents 55 years of age and older.

For simplicity of presentation, the results pertaining to each of the three surrogates are discussed

separately.

SES Income Scores

Figure 8 presents the plot of the mean SES income scores for each age-gender category, and displays the basic information about the dummy regression analysis from which these predicted values are derived.

In terms of the eight hypotheses, the results from Figure 8 reveal the following:

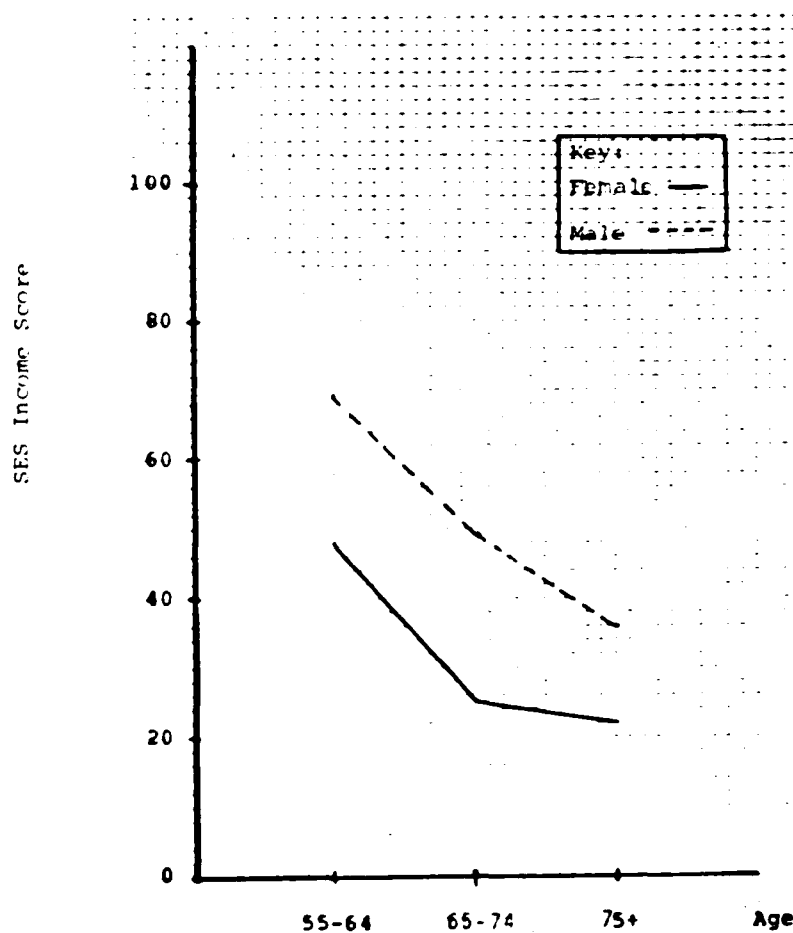
H_1 : With increasing age, there will be a corresponding decline in SES income scores.

The graphic results for both males and females, as well as the significance and direction (negative) of the D_1 (65-74) and D_2 (75+) age variables suggest the acceptance of this hypothesis.

H_2 : With advances in age from Mature Adults (age category 55-64) to Young-Elderly (age category 65-74), there will be a sharper decline in SES income scores than the decline from Young-Elderly (age category 65-74) to Older-Elderly (age category 75-plus).

The plot of the predicted values supports the hypothesis that the decline in SES income scores is greater between age categories 55-64 and 65-74, than it is between age categories 65-74 and 75+. This conclusion seems especially true for females.

Figure 8
 PLOT OF MEAN SES INCOME SCORES
 BY AGE-GENDER CATEGORIES, FOR THE CONTINENTAL UNITED STATES



Variable	Coefficient	T-Value	Significance
D ₁ (65-74)	-22.72	-10.65	.00
D ₂ (75+)	-25.42	-11.79	.00
D ₃ (Male)	21.05	9.76	.00
D ₄ (Male x 65-74)	3.20	1.04	N.S.
D ₅ (Male x 75+)	- 7.31	- 2.41	.01
Constant (Female x 55-64)	47.70	31.55	.00

Adjusted R² = .27

F = 129.01 (d.f. = 5,1744); p < .000

H_3 : Females will score lower than males on the SES income scale.

The results reveal that at each age category females have lower SES income status than males. Also, that the D_3 (male) variable is significant and positive in direction is further support for the acceptance of this hypothesis.

H_4-H_5 : Older-females (older-males) will score lower than younger-females (younger-males) on the SES income scale.

The evidence indicates that females (males) 55-64 years of age have significantly higher SES income scores than females (males) 64-74, or females (males) 75+. While this supports H_4 (H_5), it should be pointed out that for females the decline between 64-74 and 75+ is slight; that is, the line has become almost horizontal.

H_6 : Younger-females will score lower than younger-males on the SES income scale.

Supporting this hypothesis, the plot reveals that younger females (defined as either 55-64 or 65-74) have lower SES income scores than comparably aged males.

H_7 : Older-females will score lower than older-males on the SES income scale.

In support of this hypothesis, the results show that older females (defined as 75+) have lower SES income scores than their comparably aged male counterparts. However, the slope for females has leveled off, whereas the slope for males is still declining at a fairly rapid rate.

H₈: Younger-females will score lower than older-males on the SES income scale.

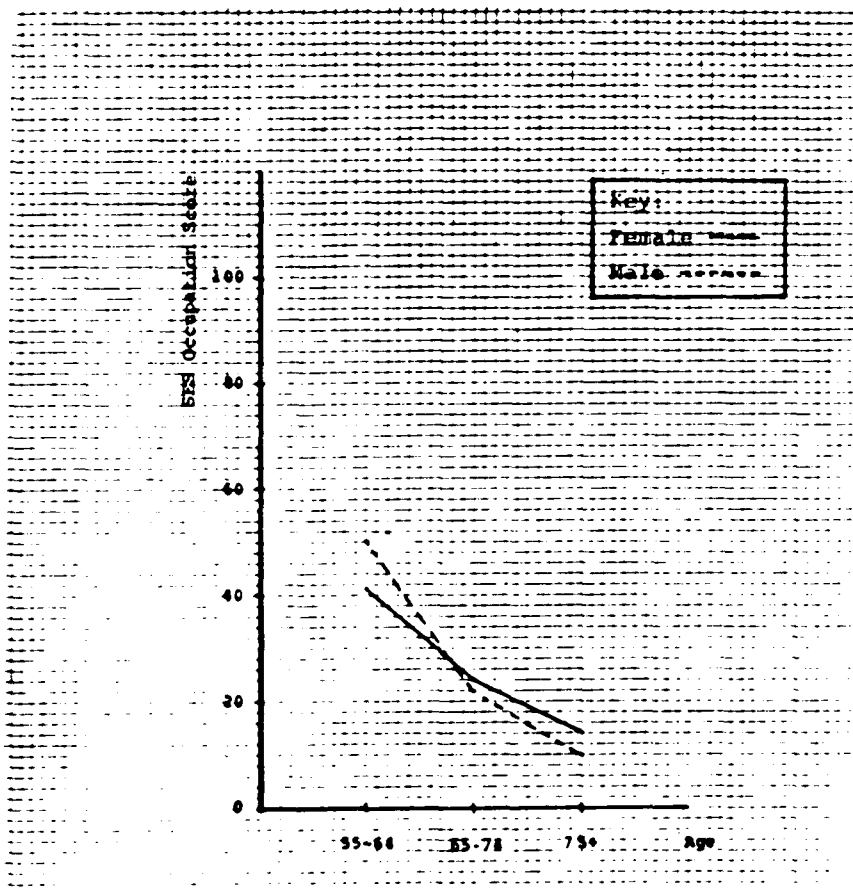
This hypothesis is rejected. Younger females do not have lower SES income scores than older males.

In terms of supporting the existence of either leveling or double jeopardy, the results in Figure 8 do not suggest either conclusion for respondents between the ages of 55-64 and 65-74 -- since the two gender lines are basically parallel in the range of these two age categories. However, the results do suggest that leveling is occurring between the age categories 65-74 and 75+. This is revealed by the almost horizontal slope in the SES income scores for females and the continued downward slope for males.

SES Occupation Scores

Figure 9 presents the plot of the mean SES occupation scores for each age-gender category, and displays the basic results of the dummy regression analysis from

Figure 9
 PLOT OF MEAN SES OCCUPATION SCORES
 BY AGE-GENDER CATEGORIES, FOR THE CONTINENTAL UNITED STATES



Variable	Coefficient	T-Value	Significance
D ₁ (65-74)	-24.09	-12.06	.00
D ₂ (75+)	-27.08	-13.84	.00
D ₃ (Male)	9.09	4.68	.00
D ₄ (Male x 65-74)	4.08	-1.46	N.S.
D ₅ (Male x 75+)	-9.08	-3.29	.00
Constant (Female x 55-64)	41.18	29.11	.00
Adjusted R ² = .26			
F = 128.3 (d.f. = 5,1785); p < .000			

which the predicted values are ultimately derived.

In terms of the hypothesized relationships, the results from Figure 9 indicate the following:

H_1 : With increasing age, there will be a corresponding decline in SES occupation scores.

The results suggest the acceptance of this hypothesis; since for both males and females, the plotted predicted values and D_1 and D_2 coefficients reveal that SES occupation scores decline with age.

H_2 : With advances in age from mature adults (age category 55-64) to young-elderly (age category 65-74), there will be a sharper decline in SES occupation score than the decline from young-elderly (age 65-74) to old-elderly (age category 75-plus).

The slopes of the lines for both males and females appear to be somewhat steeper between the two age categories 55-64 and 65-74 than between the two age categories 65-74 and 75-plus. These results suggest that this hypothesis should be accepted.

H_3 : Females will score lower than males on the SES occupation scale.

This hypothesis should be rejected. For while at age 55-64, males do have higher SES occupation scores than females, this pattern reverses itself, and by age

65-74 females have higher SES occupation scores.

H_4-H_5 : Older-females (older-males) will score lower than younger-females (younger-males) on the SES occupation scale.

The results reveal that these two hypotheses should be accepted.

H_6 : Younger-females will score lower than younger males on the SES occupation scale.

This hypothesis cannot be fully accepted. While the evidence suggests that among mature adults (age category 55-64), it is the females who score lower on the SES occupation scale; for young-elderly (age category 65-74), this pattern is reversed by a crossing of the male and female lines, as depicted on the plot in Figure 9.

H_7 : Older-females will score lower than older-males on the SES occupation scale.

This hypothesis must be rejected. Older-females score higher on the SES occupation scale than older-males.

H_8 : Younger-females will score lower than older-males on the SES occupation scale.

This hypothesis must also be rejected. Younger-females score higher than older-males.

As far as suggesting leveling or double jeopardy, the results presented in Figure 9 strongly suggest the occurrence of leveling; that is, while males tend to initially have higher SES occupation scores, this pattern is altered by age category 65-74, where females begin to have higher SES occupation scores than males.

Number of Employed Family Members

Figure 10 depicts the plot of the mean number of employed family members for each age-gender category, and the corresponding results of the dummy regression analysis from which the predicted values were derived.

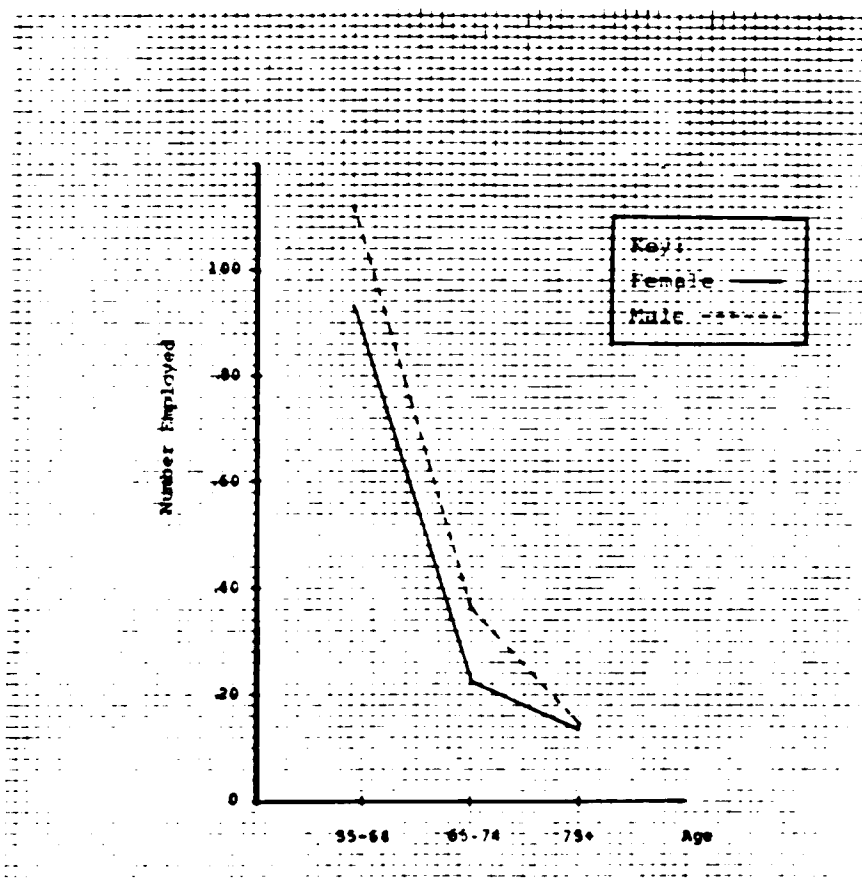
In terms of the hypothesis, the findings from Figure 10 reveal the following:

H₁: With increasing age, there will be a corresponding decline in the number of employed family members.

The graphic results for both males and females, as well as the significance and direction (negative) of the D₁ and D₂ age variables suggest the acceptance of this hypothesis.

H₂: With advances in age from mature adults (age category 55-64) to young-elderly (age category 65-74), there will be a sharper decline in the number of employed family members than the decline from young-elderly (age 65-74) to old-elderly (age category 75-plus).

Figure 10
 PLOT OF MEAN NUMBER OF EMPLOYED FAMILY MEMBERS
 BY AGE-GENDER CATEGORIES, FOR THE CONTINENTAL UNITED STATES



Variable	Coefficient	T-Value	Significance
D ₁ (65-74)	-.70	-14.56	.00
D ₂ (75+)	-.80	-19.95	.00
D ₃ (Male)	.19	4.06	.00
D ₄ (Male x 65-74)	-.05	.85	N.S.
D ₅ (Male x 75+)	-.17	-2.59	.01
Constant (Female x 55-64)	.93	27.58	.00
Adjusted R ² = .32			
F = 116.8 (d.f. = 5, 1771), p < .000			

The plot of the predicted values strongly support the hypothesis that the decline in the number of employed family members is greater between age categories 55-64 and 65-74, than it is between age categories 65-74 and 75+.

H_3 : Females will score lower than males on the number of employed family members scale.

In partial support of this hypothesis, the results reveal that between the first two age categories (i.e., 55-64 and 65-74) females have lower number of employed family member scores than males. However, between age categories 65-74 and 75+ a convergence occurs, and at age category 75+ males and females have almost identical scores. The results are, therefore, not conclusive.

H_4 - H_5 : Older-females (older-males) will score lower than younger-females (younger-males) on the number of employed family member scale.

The evidence indicates that females (males) 55-64 years of age have significantly higher number of employed family member scores than females (males) age 65-74, or females (males) 75+. Thus, the results support H_4 and H_5 .

H₆: Younger-females will score lower than younger males on the number of employed family member scale.

In support of this hypothesis, the results indicate that younger females (defined as either 55-64 and 65-74) have lower number of employed family member scores than their comparably aged males.

H₇: Older-females will score lower than older-males on the number of employed family member scale.

This hypothesis must be rejected. The plot reveals that at age category 75+ both males and females have practically the same scores.

H₈: Younger-females will score lower than older-males on the number of employed family member scale.

This hypothesis is rejected. Younger females do not have lower number of employed family member scores than older males.

With respect to the fundamental question of the existence of either leveling or double jeopardy, the findings in Figure 10 strongly support the presence of a leveling phenomenon. That is, while males tend to initially have higher number of employed family member scores, this pattern is all but eliminated between

age categories 65-74 and 75+, where convergence occurs. This leveling leaves both males and females with practically the same scores at age category 75+.

Results at the Overall Suburban
and the Overall Urban Levels

This second level of analysis consists of testing the eight hypotheses within the context of both suburban and urban geographic environments. To undertake this analysis, separate random subsamples were drawn from the overall sample of 16,000-plus respondents 55 years of age and older. One subsample consisted of respondents living in designated suburban markets and the other constituted respondents drawn from urban markets. The suburban subsample included approximately 1,200 respondents (i.e., 200 in each of the six age-gender categories); whereas the urban subsample included about 1,680 respondents (i.e., 280 in each of the six age-gender categories). The difference in the size of the suburban and urban subsamples reflects the difference in the proportion of suburban versus urban respondents in the overall 16,000-plus sample.

As before, the discussion of the results are organized in terms of the three surrogates of subjective well-being.

SES Income Scores

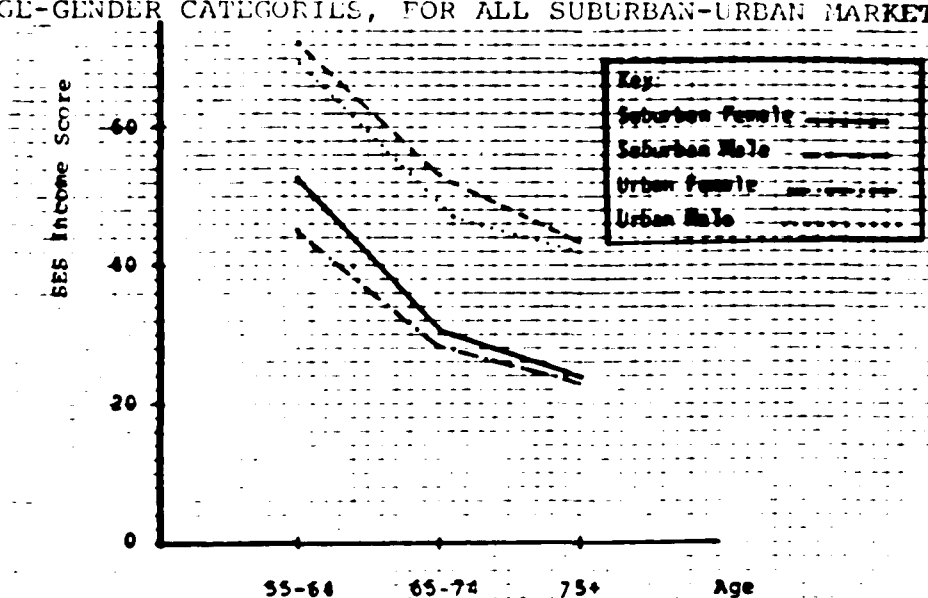
Figure 11 presents the plot of the mean SES income scores for each of the age-gender categories, for both the suburban and the urban subsamples. Positioned below these plots are the corresponding results of the dummy regression analysis.

Contrasting the findings in Figure 11 with the more general results already reported on in Figure 8 reveals an almost identical pattern in terms of both plots and magnitudes of the predicted values (and the corresponding coefficients of the regression equations). Moreover, an informal comparison of the suburban and urban findings for each age-gender category does not indicate any substantial differences. Therefore, in the interest of space, the reader is referred to the previous discussion of Figure 8, since the same conclusions basically hold here.

An examination of the two pairs of matched plots in Figure 11 reveals more consistent parallelism between each age category than was found earlier in the data reported on in Figure 8. This more emphatically suggests that neither leveling nor double jeopardy is occurring, but rather a pattern that might be described as "parallelism".

Figure 11
 PLOT OF MEAN SES INCOME SCORES
 BY AGE-GENDER CATEGORIES, FOR ALL SUBURBAN-URBAN MARKETS

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SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65-74)	-22.00	-8.01	.00
D ₂ (75+)	-28.64	-10.48	.00
D ₃ (Male)	19.84	72.8	.00
D ₄ (Male x 65-74)	2.90	.74	N.S.
D ₅ (Male x 75+)	.04	.01	.00
Constant (Female x 55-64)	32.42	27.03	.00

Adjusted R² = .25

F = 80.10 (d.f. = 5,1184); p < .000

URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65-74)	-16.90	-7.3	.00
D ₂ (75+)	-22.01	-9.9	.00
D ₃ (Male)	24.56	10.9	.00
D ₄ (Male x 65-74)	-3.85	-1.2	N.S.
D ₅ (Male x 75+)	-5.63	-1.8	N.S.
Constant (Female x 55-64)	45.30	28.3	.00

Adjusted R² = .24

F = 107.5 (d.f. = 5,1657); p < .000

SES Occupation Scores

Figure 12 displays the plot of the mean SES occupation scores for each of the age-gender categories, for both the suburban and urban subsamples, as well as the corresponding results of the dummy regression equation.

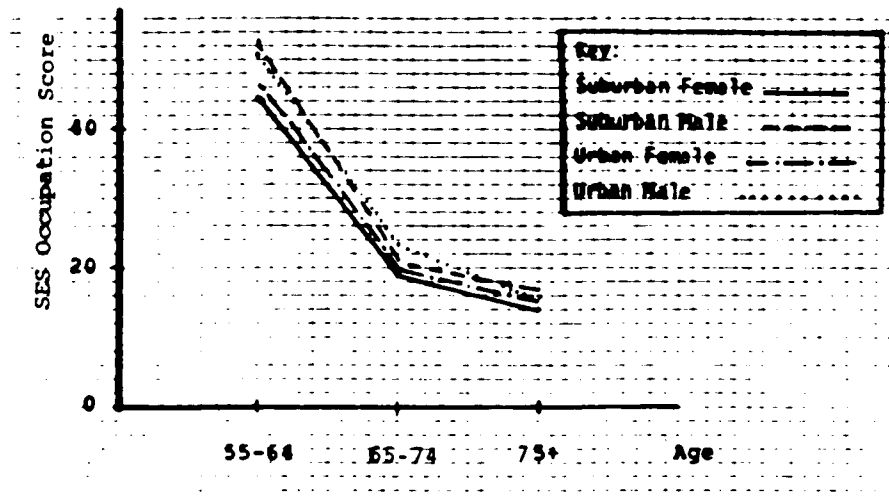
Comparing the findings in Figure 12 with the more aggregate results already considered in Figure 9 suggests a difference in results sufficient enough to warrant a hypothesis-by-hypothesis examination of the content of Figure 12.

H_1 : With increasing age, there will be a corresponding decline in SES occupation scores.

The results suggest that this hypothesis should be accepted; since for both matched-pairs, the plots and the significant-negative D_1 and D_2 age coefficients reveal that SES occupation scores decline with advancing age.

H_2 : With advances in age from mature adults (age category 55-64) to young-elderly (age category 65-74), there will be a sharper decline in SES occupation scores than the decline from young-elderly (age 65-74) to old-elderly (age category 75-plus).

Figure 12
 PLOT OF MEAN SES OCCUPATION SCORES
 BY AGE-GENDER CATEGORIES, FOR ALL SUBURBAN-URBAN MARKETS



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65-74)	-25.6	-10.4	.00
D ₂ (75+)	-30.0	-12.3	.00
D ₃ (Male)	2.1	3.3	.01
D ₄ (Male x 65-74)	-5.6	-1.6	N.S.
D ₅ (Male x 75+)	-5.8	-1.7	N.S.
Constant (Female x 55-64)	44.5	25.6	.00

Adjusted R² = .28

F = 92.0 (d.f. = 5,1187); p < .000

URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65-74)	23.8	-11.2	.00
D ₂ (75+)	27.8	-13.2	.00
D ₃ (Male)	8.3	3.9	.00
D ₄ (Male x 65-74)	3.8	-1.2	N.S.
D ₅ (Male x 75+)	7.1	-2.4	.02
Constant (Female x 55-64)	42.8	28.9	.00

Adjusted R² = .24

F = 103 (d.f. = 5,1656); p < .000

This hypothesis should be accepted. The slopes of the two pairs of lines are steeper between the age categories 55-64 and 65-74 than they are between the age categories 65-74 and 75+.

H_3 : Females will score lower than males on the SES occupation scale.

This hypothesis should be accepted. The two female plots are below their corresponding male plots, and the D_3 gender variable is significant in both the suburban and urban equations.

H_4-H_5 : Older-females (older-males) will score lower than younger-females (younger-males) on the SES occupation scale.

The results reveal that these two hypotheses should be accepted for the two-matched pairs of analysis.

H_6 : Younger-females will score lower than younger males on the SES occupation scale.

Supporting this hypothesis, the matched-pairs of plots reveal that younger females (defined as either 55-64 or 65-74) have lower SES occupation scores than their comparably aged males.

H_7 : Older-females will score lower than older-males on the SES occupation scale.

Similar to H_6 , this hypothesis should be accepted.

H_8 : Younger-females will score lower than older-males on the SES occupation scale.

The data does not support this hypothesis.

An examination of Figure 12 with leveling versus double jeopardy in mind, reveals that neither of these two perspectives are indicated by the data. Instead, the results seem to support a general pattern of parallelism.

Number of Employed Family Members

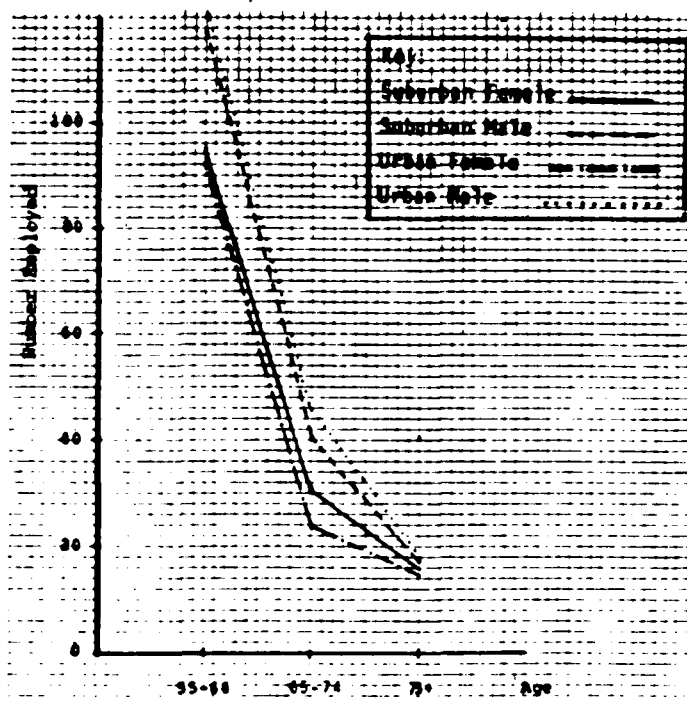
Figure 13 depicts the plots of the mean number of employed family members for the two matched-pairs of plots, as well as the corresponding findings of their respective dummy regression analyses.

In terms of the eight hypotheses, the findings in Figure 13 reveal patterns, for both the suburban and urban data, that are fully consistent with the earlier more aggregate results reported in Figure 10. Therefore, again in the interest of space, the reader is referred to Figure 10 and its accompanying discussion.

Observations on Suburban-Urban Differences

It should be recalled from the discussion of the hypotheses in Chapter 4, that H_9 proposed that suburban dwellers would have higher scores on the surrogates of

PLOT OF MEAN NUMBER OF EMPLOYED FAMILY MEMBERS
BY AGE-GENDER CATEGORIES, FOR ALL SUBURBAN-URBAN PARCELS



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65-74)	-.65	-10.80	.00
D ₂ (75+)	-.79	-13.36	.00
D ₃ (Male)	.24	3.94	.00
D ₄ (Male x 65-74)	-0.13	-1.59	N.S.
D ₅ (Male x 75+)	-0.23	-2.76	.01
Constant (Female x 55-64)	.95	22.53	.00

Adjusted R² = .30

F = 105.41 (d.f. = 5,1181); p < .000

URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65-74)	-.68	-12.28	.00
D ₂ (75+)	-.78	-14.61	.00
D ₃ (Male)	.28	5.19	.00
D ₄ (Male x 65-74)	-.06	-.82	N.S.
D ₅ (Male x 75+)	-.26	-3.51	.00
Constant (Female x 55-64)	.92	23.76	.00

Adjusted R² = .29

F = 135.99 (d.f. = 5,1612); p < .000

subjective well-being than urban dwellers. So far, any discussion of this hypothesis has been avoided since the topic is rightfully considered at the end of this chapter as part of the consideration of the results of the paired comparison t-test analysis that explicitly takes into account differences between suburban and urban areas.

However, an informal examination of the suburban versus urban plots and their regression equations, as presented in Figures 11-13, reveals a substantial amount of similarity between suburban females and their urban counterparts, and suburban males and their urban counterparts. This raises the question, which is explored later, Is the suburban-urban distinction contributing anything that is not already accounted for by gender?

Results at the Specific Suburban-Urban Level

The third level of analysis is concerned with identifying possible differences in the relationship between the age-gender variables and the surrogates of subjective well being at the individual or specific market level.

As pointed out in Chapter 4, it was decided to limit the specific geographic analysis to those fourteen metropolitan markets for which matched data for suburban and urban areas existed. In the present section, the eight

hypotheses are tested within the context of both the fourteen suburban and the fourteen urban geographic markets. A direct comparison of suburban-urban differences is reserved for the following section.

To undertake the present analysis, specific subsamples were drawn from the overall sample of 16,000-plus respondents 55 years of age and older. Each of the twenty-eight subsamples (14 suburban and 14 urban) consisted of respondents living in the designated suburban (urban) market area. The twenty-eight subsamples were of varying size reflecting the specific subsamples relative proportion to the overall sample. An effort was made to keep the number of respondents in each of the six age-gender categories equal. This was done in order to preserve as much as possible the quasi-experimental nature of the analysis.

An initial examination of the six age-gender categories, for each suburban and each matched urban market area, revealed a need to make a major compromise in analyzing such a fine division of the data. Specifically, the size of the male and female 75 years of age and older submarkets were uniformly too small in size to constitute separate age-gender breaks. This restriction forced a merger of the 65-74 and 75-plus age categories, to form a 65-plus age category. The collapsing was unfortunate

since it reduced each plot to consisting of two rather than three data-points. Moreover, the results in Figures 8-13 did suggest that the explicit distinction between age category 65-74 and age category 75-plus was meaningful.

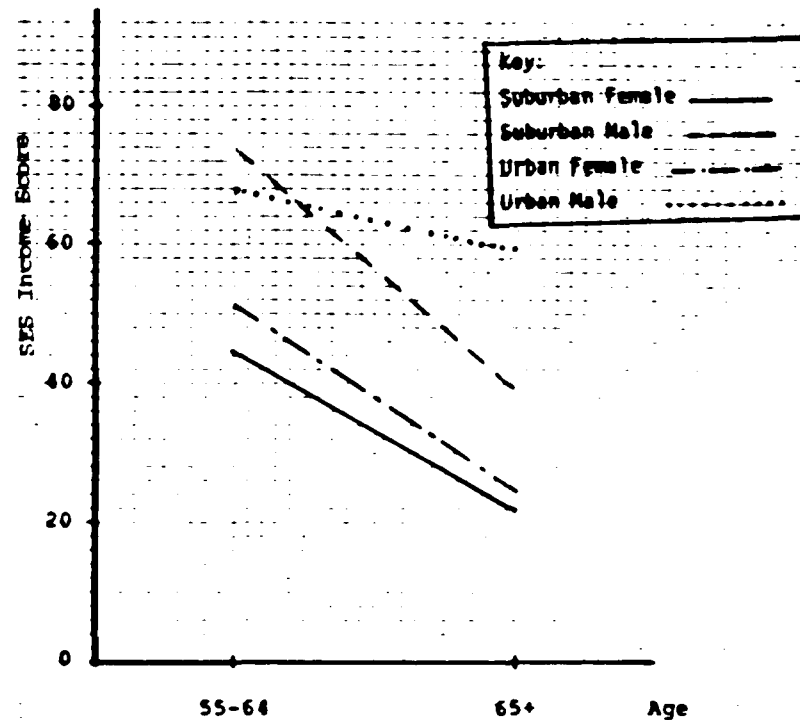
As in the prior analysis, the discussion of the results is organized around the three surrogates of subjective well-being. However, in contrast to the two previous sections where only three figures per section were required to present the results, here forty-two figures need be examined (fourteen each, for the three surrogates of subjective well-being). In order to effectively consider this much information, summary tables are provided and referred to so as to make it easier to test each of the hypotheses.

SES Income Scores

Figures 14-27 present the plot of the mean SES income scores for each of the age-gender categories, for the specific matched suburban-urban subsamples. Again, positioned immediately below these plots are the results of the two corresponding dummy regression equations.

To make the hypothesis-by-hypothesis discussion easier to accomplish, Table 8 presents a summary of the results set out in Figures 14-27.

Figure 14
 PLOT OF MEAN SES INCOME SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN ATLANTA



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-22.80	-2.17	.03
D ₂ (Male)	28.97	3.02	.00
D ₃ (Male x 65+)	-11.85	-0.86	N.S.
Constant (Female x 55-64)	44.91	5.43	.00

Adjusted R² = .37

F = 15.04 (d.f. = 3,70); p < .000

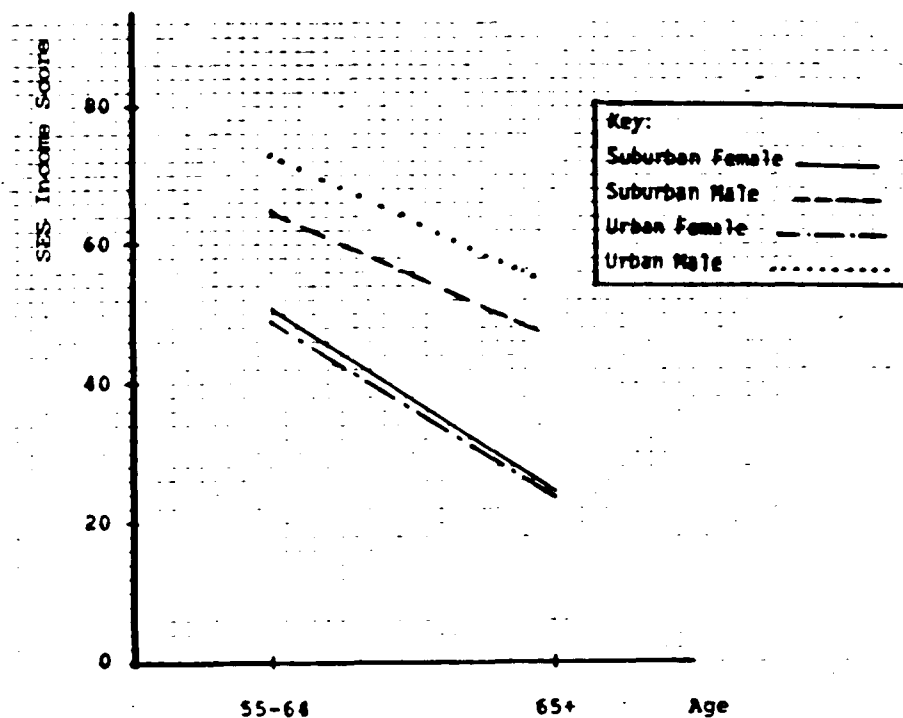
URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-28.27	-3.23	.00
D ₂ (Male)	15.56	1.88	.06
D ₃ (Male x 65+)	20.23	1.73	.00
Constant (Female x 55-64)	51.52	8.43	.00

Adjusted R² = .23

F = 10.02 (d.f. = 3,89); p < .00

Figure 15
 PLOT OF MEAN SES INCOME SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN BOSTON



SUBURBAN:

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-26.93	-2.81	.01
D ₂ (Male)	14.10	1.53	N.S.
D ₃ (Male x 65+)	8.41	0.71	N.S.
Constant (Female x 55-64)	50.87	6.69	.00

Adjusted R² = .18

F = 9.34 (d.f. = 3,105); p < .000

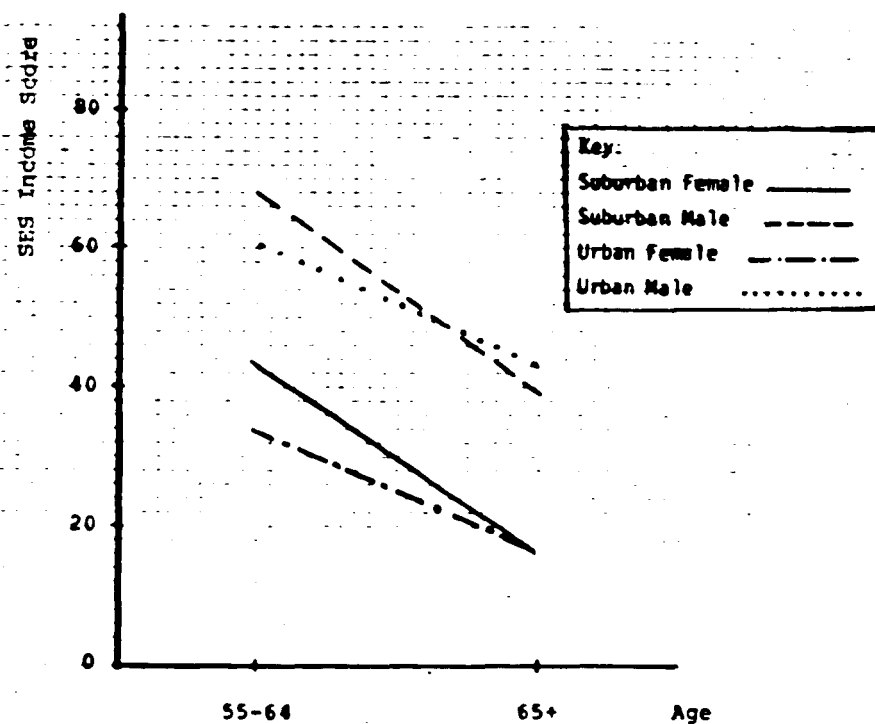
URBAN:

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-26.06	-2.50	.01
D ₂ (Male)	23.48	2.17	.03
D ₃ (Male x 65+)	7.15	0.50	N.S.
Constant (Female x 55-64)	49.64	5.88	.00

Adjusted R² = .30

F = 10.15 (d.f. = 3,60); p < .000

Figure 16
 PLOT OF MEAN SES INCOME SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN BUFFALO



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-26.36	-3.79	.00
D ₂ (Male)	25.28	3.95	.00
D ₃ (Male x 65+)	-0.88	-0.10	N.S.
Constant (Female x 55-64)	42.56	7.96	.00

Adjusted R² = .42

F = 28.58 (d.f. = 3,111); F < .000

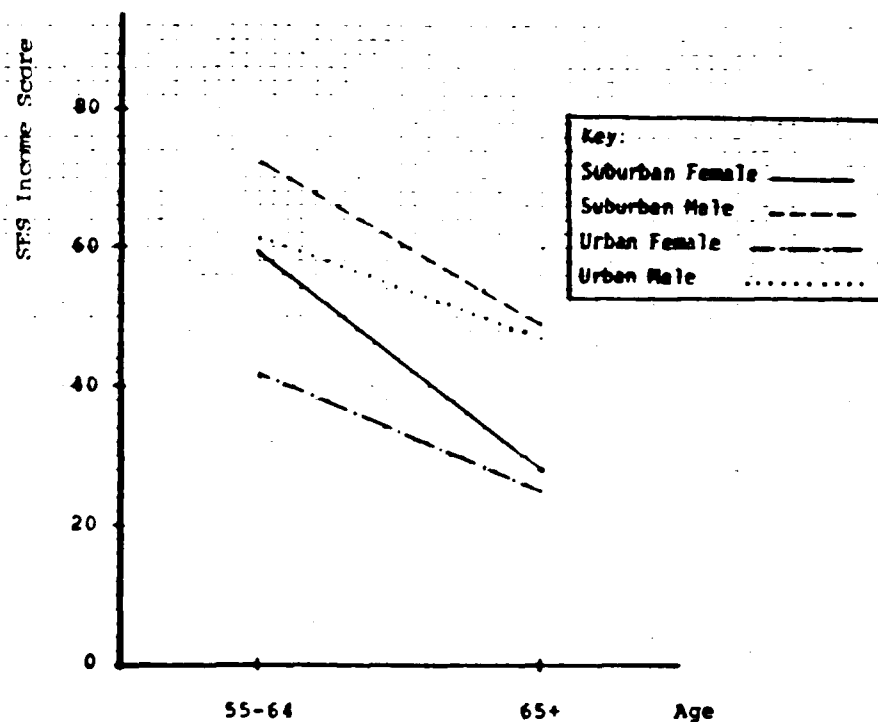
URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-16.67	-2.73	.01
D ₂ (Male)	26.74	4.41	.00
D ₃ (Male x 65+)	1.76	0.21	N.S.
Constant (Female x 55-64)	34.08	7.30	.00

Adjusted R² = .33

F = 22.04 (d.f. = 3,124); p < .000

Figure 17
 PLOT OF MEAN SES INCOME SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN CHICAGO



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-30.79	-4.76	.00
D ₂ (Male)	13.12	0.10	.03
D ₃ (Male x 65+)	7.45	0.82	N.S.
Constant (Female x 55-64)	58.97	12.90	.00

Adjusted R² = .29

F = 13.52 (d.f. = 3,139); $p < .000$

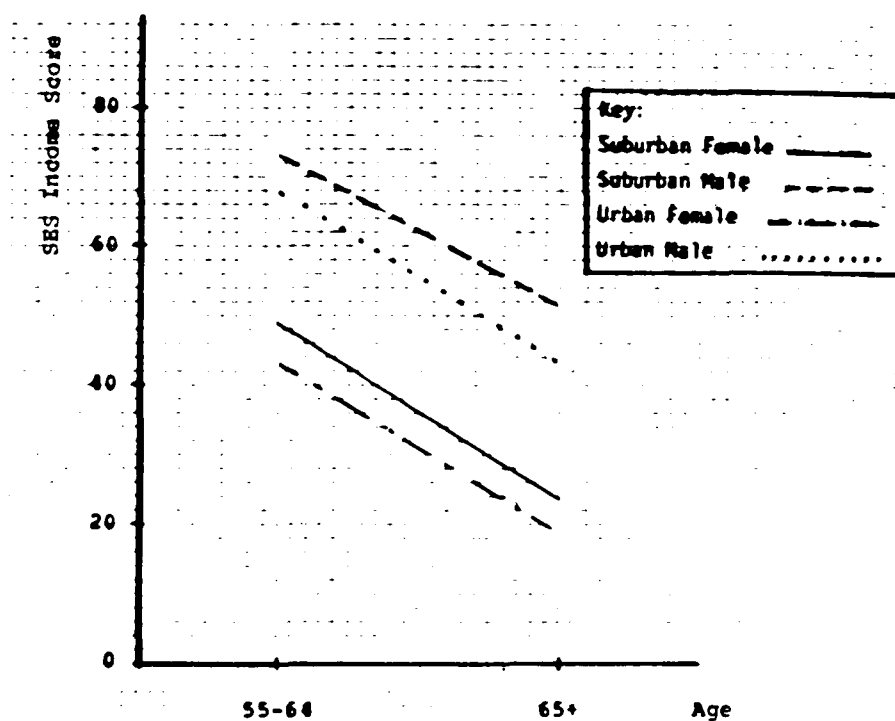
URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-16.62	-2.45	.01
D ₂ (Male)	19.03	2.60	.01
D ₃ (Male x 65+)	3.27	0.33	N.S.
Constant (Female x 55-64)	41.55	8.46	.00

Adjusted R² = .18

F = 8.76 (d.f. = 3,104); $p < .000$

Figure 18
 PLOT OF MEAN SES INCOME SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN DENVER



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-27.82	-2.91	.00
D ₂ (Male)	23.88	2.74	.00
D ₃ (Male x 65+)	5.97	0.51	N.S.
Constant (Female x 55-64)	49.5	6.61	.00

Adjusted R² = .34

F = 216.33 (d.f. = 3,87); p < .000

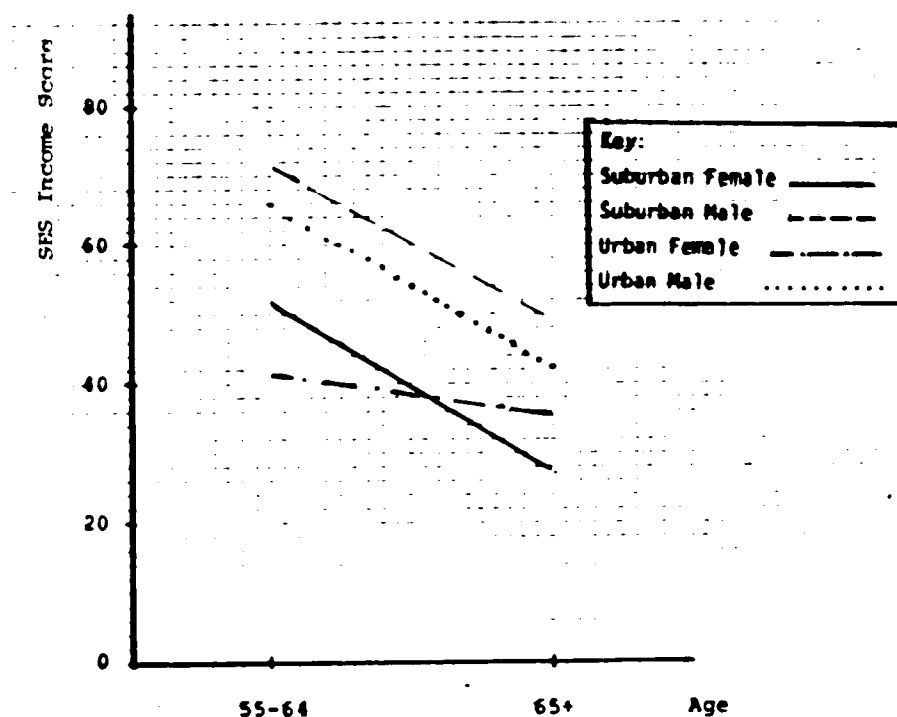
URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-23.88	-3.30	.00
D ₂ (Male)	24.43	3.11	.00
D ₃ (Male x 65+)	2.52	0.25	N.S.
Constant (Female x 55-64)	43.77	7.63	.00

Adjusted R² = .28

F = 16.66 (d.f. = 3,117); p < .000

Figure 19
 PLOT OF MEAN SES INCOME SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN FT. LAUDERDALE



SUBURBAN

<u>Variable</u>	<u>Coefficient</u>	<u>T-Value</u>	<u>Significance</u>
D ₁ (65+)	-24.48	-3.76	.00
D ₂ (Male)	21.64	3.18	.00
D ₃ (Male x 65+)	1.05	0.13	N.S.
Constant (Female x 55-64)	52.07	10.21	.00

Adjusted R² = .21

F = 19.46 (d.f. = 3,203); p < .000

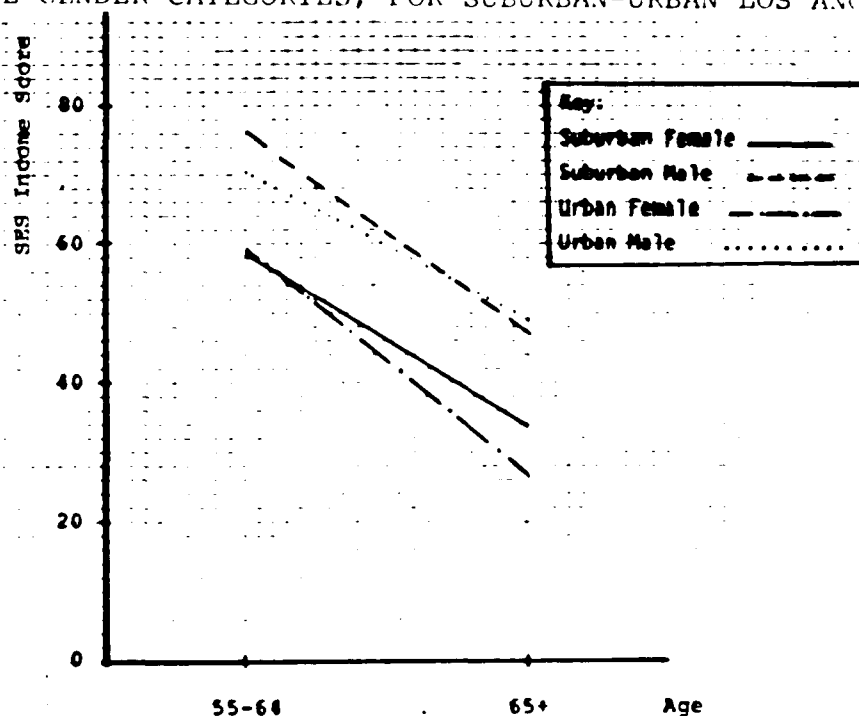
URBAN

<u>Variable</u>	<u>Coefficient</u>	<u>T-Value</u>	<u>Significance</u>
D ₁ (65+)	-5.56	-0.78	N.S.
D ₂ (Male)	24.12	3.50	.00
D ₃ (Male x 65+)	-11.11	-1.22	N.S.
Constant (Female x 55-64)	42.03	7.85	.00

Adjusted R² = .11

F = 8.12 (d.f. = 3,169); p < .000

Figure 20
 PLOT OF MEAN SES INCOME SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN LOS ANGELES



SUBURBAN

Variable	Coefficient	T-Value	Significance
D_1 (65+)	-24.95	-4.29	.00
D_2 (Male)	17.98	3.27	.00
D_3 (Male x 65+)	-4.96	-0.63	N.S.
Constant (Female x 55-64)	58.95	13.80	.00

Adjusted R^2 = .26

F = 24.33 (d.f. = 3,198); $p < .000$

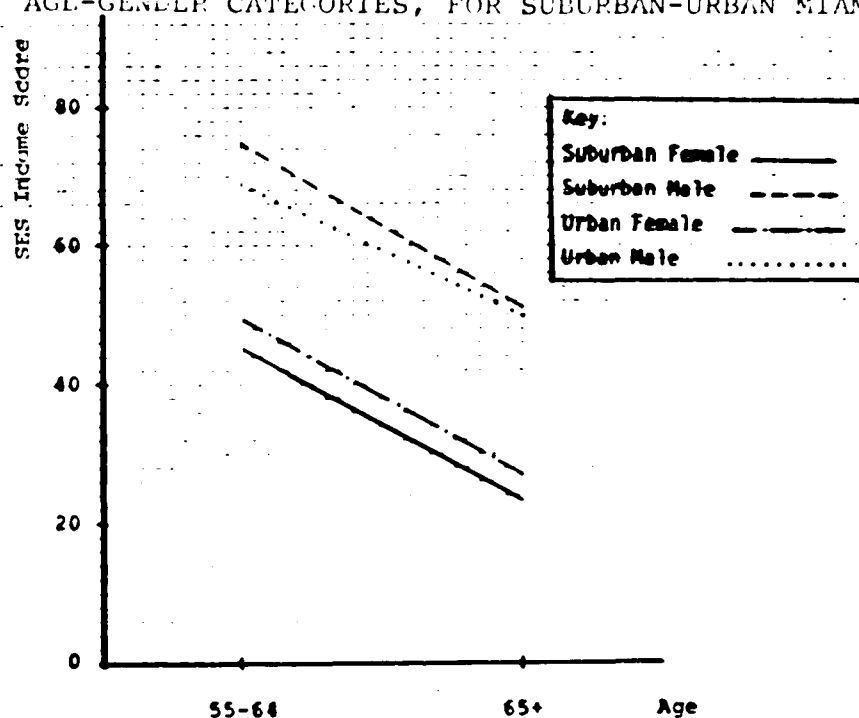
URBAN

Variable	Coefficient	T-Value	Significance
D_1 (65+)	-32.44	-2.90	.00
D_2 (Male)	11.28	1.01	N.S.
D_3 (Male x 65+)	10.78	0.76	N.S.
Constant (Female x 55-64)	58.78	6.43	.00

Adjusted R^2 = .24

F = 8.00 (d.f. = 3,64); $p < .000$

Figure 21
 PLOT OF MEAN SES INCOME SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN MIAMI



SUBURBAN

<u>Variable</u>	<u>Coefficient</u>	<u>T-Value</u>	<u>Significance</u>
D ₁ (65+)	-21.70	-2.92	.00
D ₂ (Male)	29.36	3.64	.00
D ₃ (Male x 65+)	-1.92	-0.19	N.S.
Constant (Female x 55-64)	45.35	7.36	.00

Adjusted R² = .34

F = 20.24 (d.f. = 3,110); $p < .000$

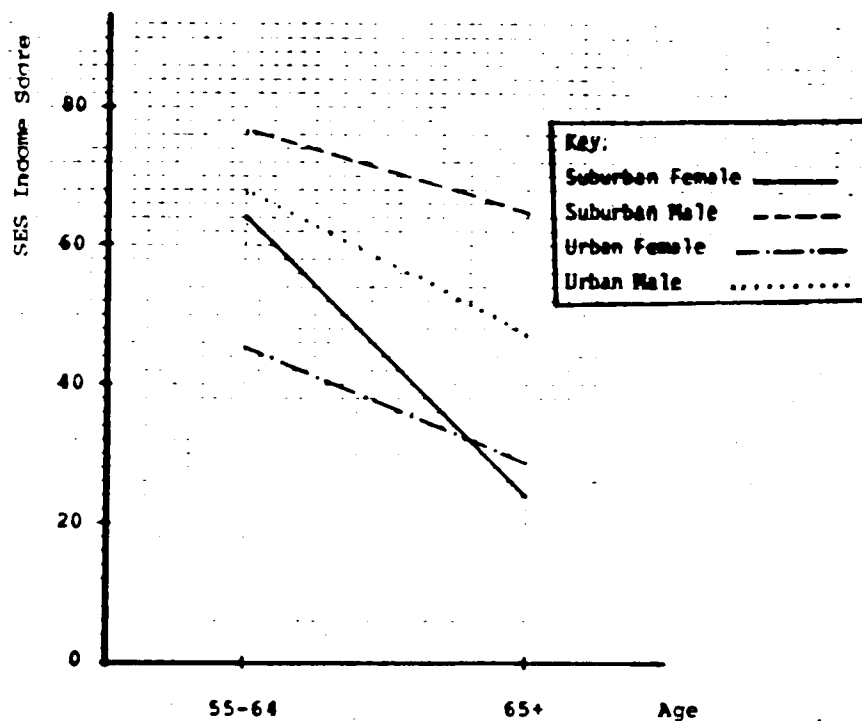
URBAN

<u>Variable</u>	<u>Coefficient</u>	<u>T-Value</u>	<u>Significance</u>
D ₁ (65+)	-22.00	-2.46	.02
D ₂ (Male)	19.93	2.35	.02
D ₃ (Male x 65+)	3.27	.27	N.S.
Constant (Female x 55-64)	48.76	7.72	.00

Adjusted R² = .18

F = 8.14 (d.f. = 3,92); $p < .000$

Figure 22
 PLOT OF MEAN SES INCOME SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN NEW YORK CITY



SUBURBAN

<u>Variable</u>	<u>Coefficient</u>	<u>T-Value</u>	<u>Significance</u>
D ₁ (65+)	-39.90	-5.07	.00
D ₂ (Male)	12.28	1.71	N.S.
D ₃ (Male x 65+)	27.84	2.97	.00
Constant (Female x 55-64)	63.94	10.05	.00

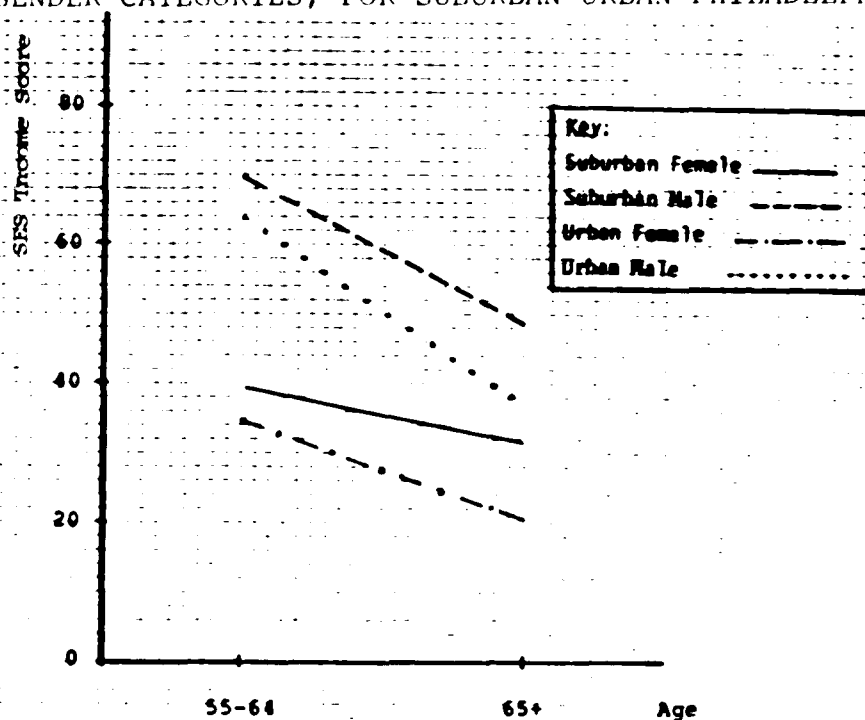
Adjusted R² = .36F = 28.46 (d.f. = 3,144); $p < .000$

URBAN

<u>Variable</u>	<u>Coefficient</u>	<u>T-Value</u>	<u>Significance</u>
D ₁ (65+)	-16.86	-3.77	.00
D ₂ (Male)	22.48	5.16	.00
D ₃ (Male x 65+)	-4.06	-0.68	N.S.
Constant (Female x 55-64)	45.21	13.63	.00

Adjusted R² = .19F = 30.79 (d.f. = 3,371); $p < .000$

Figure 23
 PLOT OF MEAN SES INCOME SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN PHILADELPHIA



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-6.33	-0.75	N.S.
D ₂ (Male)	31.38	4.41	.00
D ₃ (Male x 65+)	-15.26	-1.39	N.S.
Constant (Female x 55-64)	39.16	7.21	.00

Adjusted R² = .22

F = 10.35 (d.f. = 3,99); p < .000

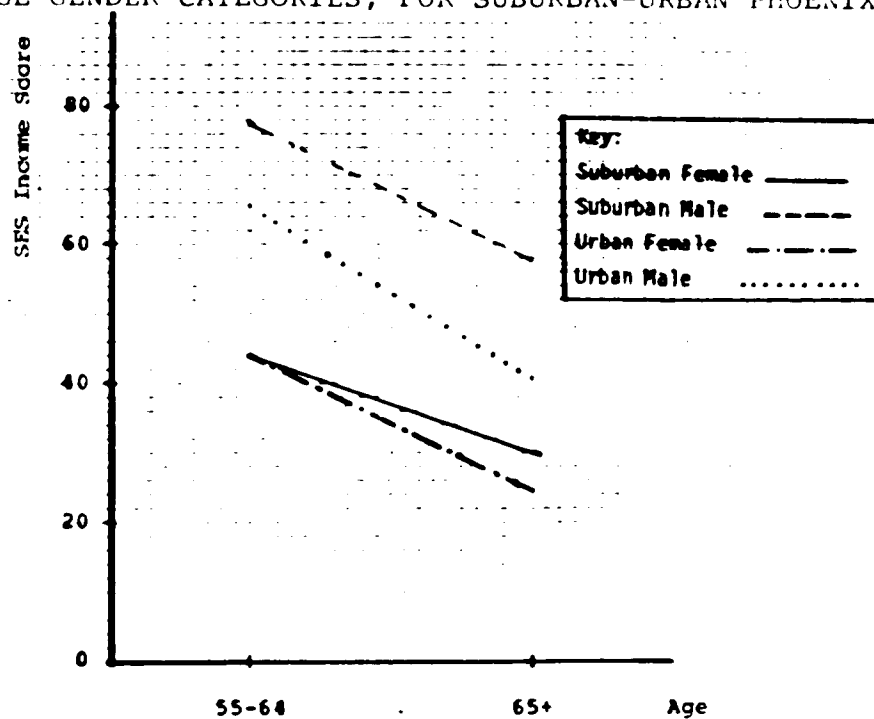
URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-18.31	-2.18	.03
D ₂ (Male)	21.99	2.37	.02
D ₃ (Male x 65+)	-7.62	-0.66	N.S.
Constant (Female x 55-64)	41.38	1.01	.00

Adjusted R² = .23

F = 8.90 (d.f. = 3,77); p < .000

Figure 24
 PLOT OF MEAN SES INCOME SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN PHOENIX



SUBURBAN

<u>Variable</u>	<u>Coefficient</u>	<u>T-Value</u>	<u>Significance</u>
D_1 (65+)	-11.74	-1.58	N.S.
D_2 (Male)	34.56	5.00	.00
D_3 (Male x 65+)	-8.66	-0.94	N.S.
Constant (Female x 55-64)	43.67	6.16	.00

Adjusted R^2 = .25

F = 17.79 (d.f. = 3,144); $p < .000$

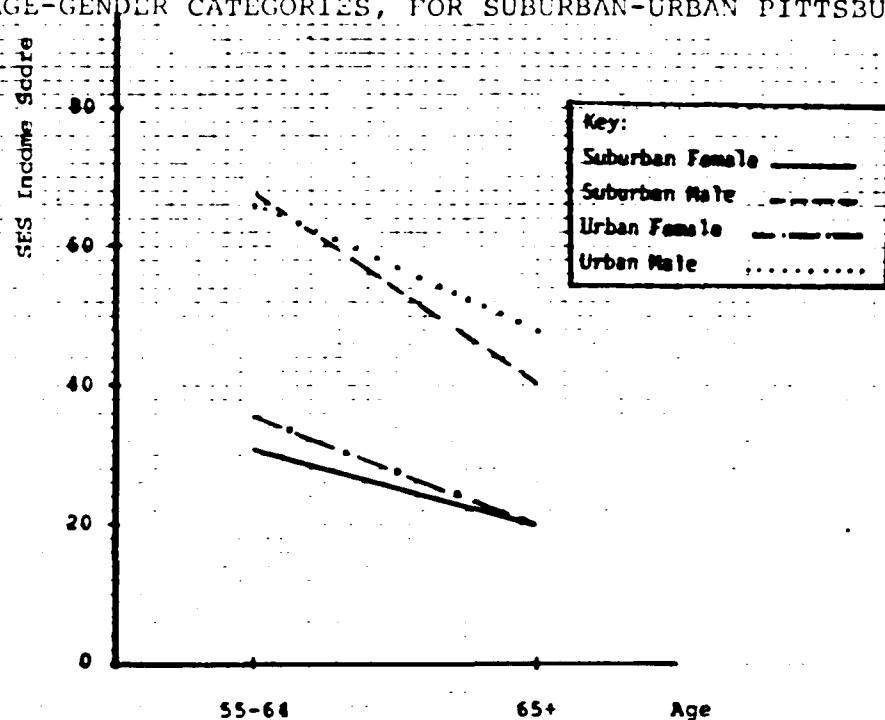
URBAN

<u>Variable</u>	<u>Coefficient</u>	<u>T-Value</u>	<u>Significance</u>
D_1 (65+)	-19.44	-2.88	.00
D_2 (Male)	21.76	3.20	.00
D_3 (Male x 65+)	-4.35	-0.48	N.S.
Constant (Female x 55-64)	44.00	8.28	.00

Adjusted R^2 = .27

F = 16.10 (d.f. = 3,118); $p < .000$

Figure 25
 PLOT OF MEAN SES INCOME SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN PITTSBURGH



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-10.36	-1.47	N.S.
D ₂ (Male)	37.16	5.40	.00
D ₃ (Male x 65+)	-17.02	-1.90	.06
Constant (Female x 55-64)	31.41	5.39	.00

Adjusted R² = .39

F = 29.3 (d.f. = 3,128); p < .000

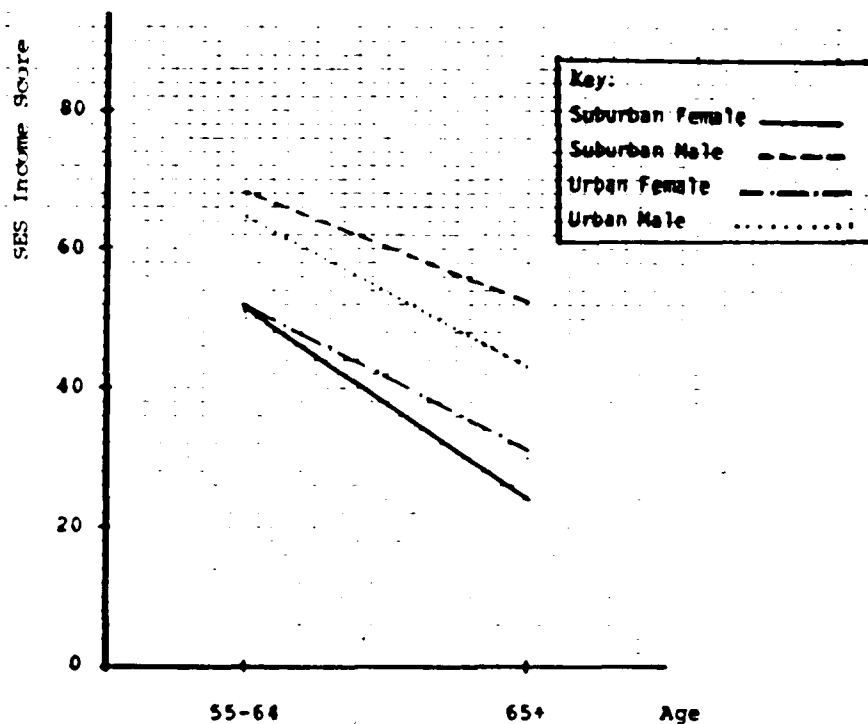
URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-13.86	-2.13	.03
D ₂ (Male)	30.13	4.81	.00
D ₃ (Male x 65+)	-3.90	-0.44	N.S.
Constant (Female x 55-64)	35.43	6.90	.00

Adjusted R² = .36

F = 23.80 (d.f. = 3,120); p < .000

Figure 26
 PLOT OF MEAN SES INCOME SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN SAN DIEGO



SUBURBAN:

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-27.65	-3.93	.00
D ₂ (Male)	16.35	2.58	.01
D ₃ (Male x 65+)	11.44	1.26	N.S.
Constant (Female x 55-64)	51.83	10.52	.00

Adjusted R² = .24

F = 15.70 (d.f. = 3,138); p < .000

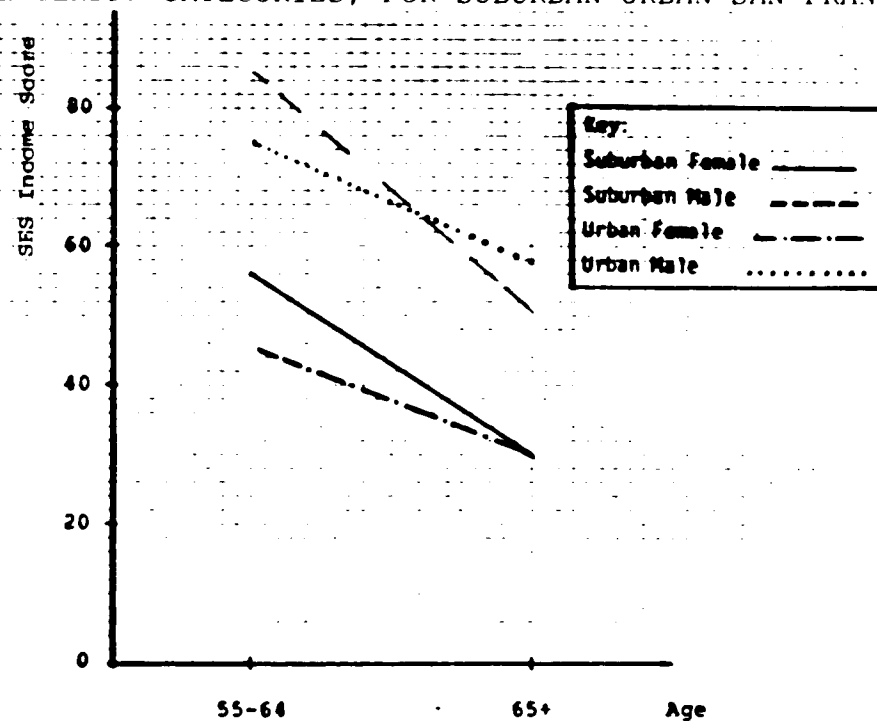
URBAN:

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-21.40	-3.16	.00
D ₂ (Male)	12.93	1.90	.06
D ₃ (Male x 65+)	0.03	0.00	N.S.
Constant (Female x 55-64)	51.48	10.44	.00

Adjusted R² = .15

F = 9.56 (d.f. = 3,138); p < .000

Figure 27
 PLOT OF MEAN SES INCOME SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN SAN FRANCISCO



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-25.80	-3.99	.00
D ₂ (Male)	30.25	5.57	.00
D ₃ (Male x 65+)	-8.94	-1.14	N.S.
Constant (Female x 55-64)	55.90	12.35	.00

Adjusted R² = .39F = 41.65 (d.f. = 3,188); $p < .000$

URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-14.23	-1.76	N.S.
D ₂ (Male)	30.87	3.85	.00
D ₃ (Male x 65+)	-2.98	-0.27	N.S.
Constant (Female x 55-64)	44.27	7.44	.00

Adjusted R² = .25F = 12.57 (d.f. = 3,103); $p < .000$

Table 8
SUMMARY OF RESULTS WHEN SES INCOME SCORES ARE THE SURROGATES

14 Specific Metropolitan Markets (Suburban/Urban)														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
H ₁ : With increasing age, there will be a corresponding decline in SES income scores.	A/A	A/A	A/A	A/A	A/A	A/R	A/A	A/A	A/A	R/A	R/A	R/A	A/A	A/R
H ₂ : With advances in age from mature adults to young-elderly, there will be a sharper decline in SES income scores than the decline from younger-elderly to old-elderly.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H ₃ : Females will score lower than males on the SES income scale.	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A
H ₄ -H ₅ : Older-female (older-males) will score lower on the SES income scale than younger-females (younger-males).	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A
H ₆ : Younger-females will score lower than younger-males on the SES income scale.	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A
H ₇ : Older-females will score lower than older-males on the SES income scale.	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/R	R/R	A/A	R/A	R/A
H ₈ : Younger-females will score lower than older-males on the SES income scale.	R/A	R/A	R/A	R/A	A/A	R/A	R/R	A/A	A/A	A/A	A/R	A/A	A/R	R/A
OVERALL PATTERN	L/D	D/D	P/P	D/P	D/P	P/L	L/D	P/P	D/L	L/L	L/L	L/P	D/P	L/P

Key:

1 = Atlanta, 2 = Boston, 3 = Buffalo, 4 = Chicago, 5 = Denver, 6 = Ft. Lauderdale, 7 = Los Angeles, 8 = Miami, 9 = New York City, 10 = Philadelphia, 11 = Phoenix, 12 = Pittsburgh, 13 = San Diego, 14 = San Francisco, A = Accepted, R = Rejected, L = Leveling, D = Double Jeopardy, P = Parallelism, NA = Not Applicable.

H_1 : With increasing age, there will be a corresponding decline in SES income scores.

The summary evidence in Table 8 indicate that for eleven of the fourteen specific suburban market areas and twelve of the fourteen urban market areas this hypothesis should be accepted. An examination of the specific metropolitan markets where the hypothesis is accepted (rejected) does not reveal any particular pattern in terms of market location or market size.

H_2 : With advances in age from mature adults (age category 55-64) to young-elderly (age category 65-74), there will be a sharper decline in SES income scores than the decline from young-elderly (age 65-74) to old-elderly (age category 75-plus).

This hypothesis does not apply to this level of analysis.

H_3 : Females will score lower than males on the SES income scale.

This hypothesis should be accepted. The summary results indicate that for all fourteen suburban and all fourteen urban market areas that this hypothesis should be accepted.

H_4-H_5 : Older-females (older-males) will score lower than younger-females (younger-males) on the SES income scale.

The summary results reveal that these two hypotheses should be accepted for all fourteen pairs of suburban-urban markets.

H₆: Younger-females will score lower than younger males on the SES income scale.

This hypothesis can be uniformly accepted across all fourteen suburban-urban market pairs.

H₇: Older-females will score lower than older-males on the SES income scale.

This hypothesis is also accepted across all fourteen suburban-urban market pairs.

H₈: Younger-females will score lower than older-males on the SES income scale.

The summary evidence shows that for seven of suburban market areas that this hypothesis should be accepted, and for the seven remaining suburban areas that they hypothesis should be rejected. Thus, the results do not provide a clear-cut pattern for the suburban markets. In contrast, the findings pertaining to the urban markets suggest that the hypothesis should be accepted for eleven of the fourteen markets.

With respect to supporting the existence of either leveling or double jeopardy, the results in Table 8 are inconclusive. Specifically, there are ten relatively

clear cases suggesting leveling (six suburban, four urban), eight cases showing double jeopardy (five suburban, three urban), and ten cases exhibiting a pattern of parallelism (three suburban, seven urban).

SES Occupation Scores

Figures 28-41 show the plot of the mean SES occupation scores for each of the age-gender categories, for the specific matched suburban-urban subsamples. Also, located below these plots are the associated results of the two dummy regression analysis.

To facilitate the hypothesis-by-hypothesis examination of the findings, Table 9 summarizes the results of Figures 28-41.

H_1 : With increasing age, there will be a corresponding decline in SES occupation scores.

The summary evidence in Table 9 reveals for all of suburban and urban market areas that this hypothesis should be accepted.

H_2 : With advances in age from mature adults (age category 55-64) to young-elderly (age category 65-74), there will be a sharper decline in SES occupation scores than the decline from young-elderly (age 65-74) to old-elderly (age category 75-plus).

This hypothesis does not apply to this level of analysis.

H_3 : Females will score lower than males on the SES occupation scale.

The summary results reveal that the evidence is mixed with regard to this hypothesis. That is, while for the majority of suburban-urban markets, the hypothesis is accepted; there are some eleven of the total 28 cases where the hypothesis is rejected. Therefore, support for the hypothesis is inconclusive.

H_4-H_5 : Older-females (older-males) will score lower than younger-females (younger-males) on the SES occupation scale.

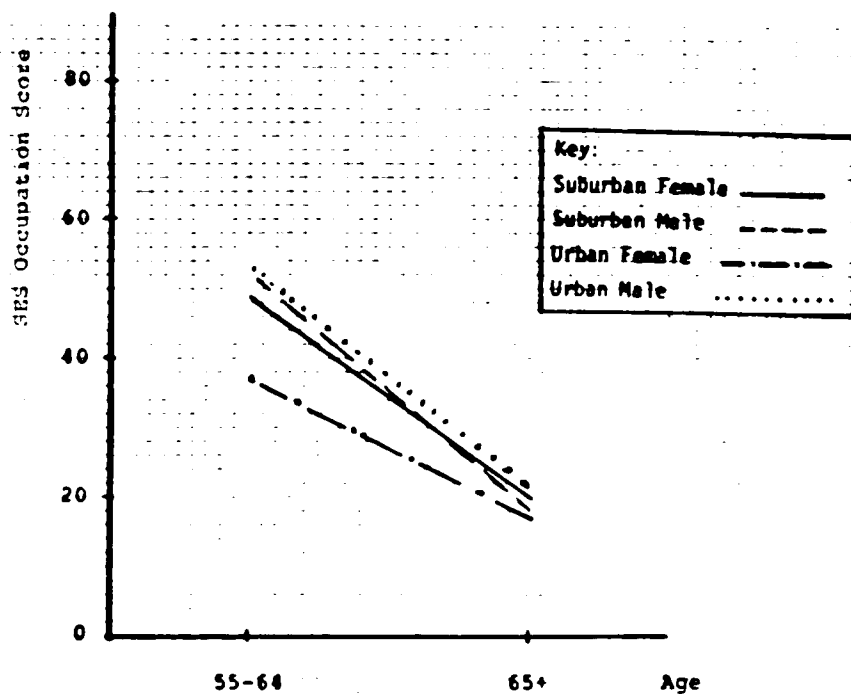
The summary evidence indicates that these two hypotheses should be accepted for all fourteen pairs of suburban-urban markets.

H_6 : Younger-females will score lower than younger males on the SES occupation scale.

While not unanimous, the results for both suburban and urban market areas strongly support the acceptance of this hypothesis. More precisely, the results for thirteen of the fourteen suburban markets and twelve of the fourteen urban market areas indicate acceptance of the hypothesis.

H_7 : Older-females will score lower than older-males on the SES occupation scale.

Figure 28
 PLOT OF MEAN SES OCCUPATION SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN ATLANTA



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-26.52	-2.54	.01
D ₂ (Male)	3.71	0.36	N.S.
D ₃ (Male x 65+)	-6.95	-0.47	N.S.
Constant (Female x 55-64)	49.90	5.63	.00

Adjusted R² = .21

F = 7.48 (d.f. = 3,70); p < .000

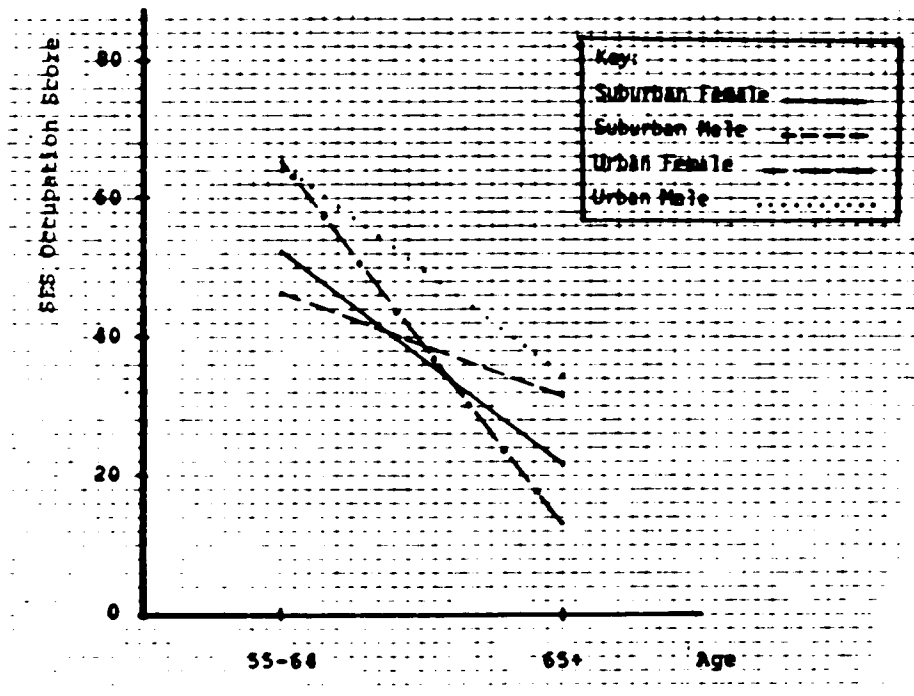
URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-19.27	-1.14	.03
D ₂ (Male)	16.30	1.9	.06
D ₃ (Male x 65+)	-13.69	-2.14	N.S.
Constant (Female x 55-64)	36.62	5.82	.00

Adjusted R² = .18

F = 7.86 (d.f. = 3,89); p < .000

Figure 29
 PLOT OF MEAN SES OCCUPATION SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN BOSTON



SUBURBAN

<u>Variable</u>	<u>Coefficient</u>	<u>T-Value</u>	<u>Significance</u>
D ₁ (65+)	-30.48	-3.15	.00
D ₂ (Male)	-5.79	-0.62	N.S.
D ₃ (Male x 65+)	15.80	-1.31	N.S.
Constant (Female x 55-64)	52.13	6.77	.00

Adjusted R² = .10

F = 5.00 (d.f. = 3,105); p < .000

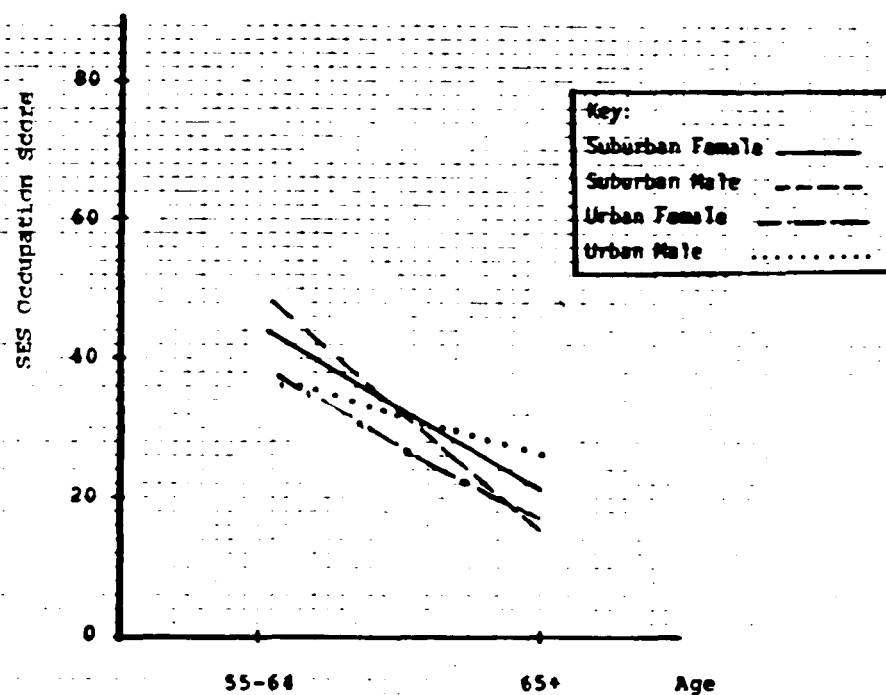
URBAN

<u>Variable</u>	<u>Coefficient</u>	<u>T-Value</u>	<u>Significance</u>
D ₁ (65+)	-52.82	-4.96	.00
D ₂ (Male)	-1.20	-0.11	N.S.
D ₃ (Male x 65+)	22.83	1.55	N.S.
Constant (Female x 55-64)	65.73	7.62	.00

Adjusted R² = .37

F = 13.57 (d.f. = 3,60); p < .000

Figure 30
 PLOT OF MEAN SES OCCUPATION SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN BUFFALO



SUBURBAN

<u>Variable</u>	<u>Coefficient</u>	<u>T-Value</u>	<u>Significance</u>
D ₁ (65+)	-22.91	-3.06	.00
D ₂ (Male)	6.50	0.94	N.S.
D ₃ (Male x 65+)	-12.03	-1.26	N.S.
Constant (Female x 55-64)	44.33	7.70	.00

Adjusted R² = .27

F = 15.29 (d.f. = 3,111); p < .000

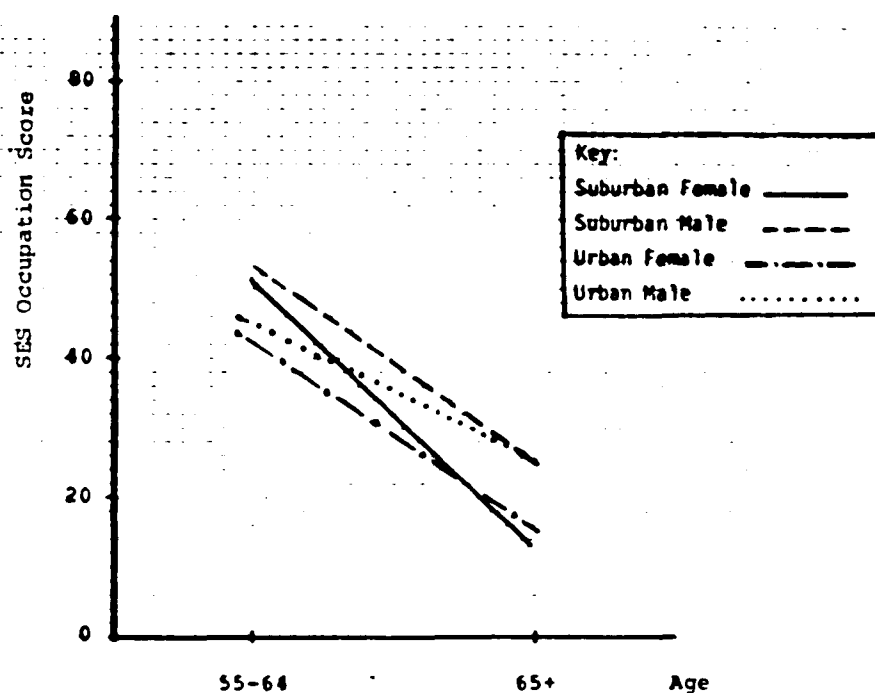
URBAN

<u>Variable</u>	<u>Coefficient</u>	<u>T-Value</u>	<u>Significance</u>
D ₁ (65+)	-20.53	-2.91	.00
D ₂ (Male)	-0.15	-0.02	N.S.
D ₃ (Male x 65+)	9.01	0.95	N.S.
Constant (Female x 55-64)	37.29	6.91	.00

Adjusted R² = .08

F = 4.50 (d.f. = 3,124); p < .000

Figure 31
 PLOT OF MEAN SES OCCUPATION SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN CHICAGO



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-39.24	-6.09	.00
D ₂ (Male)	1.67	0.26	N.S.
D ₃ (Male x 65+)	10.56	1.17	N.S.
Constant (Female x 55-64)	52.15	11.44	.00

Adjusted R² = .30

F = 21.03 (d.f. = 3,135); p < .00

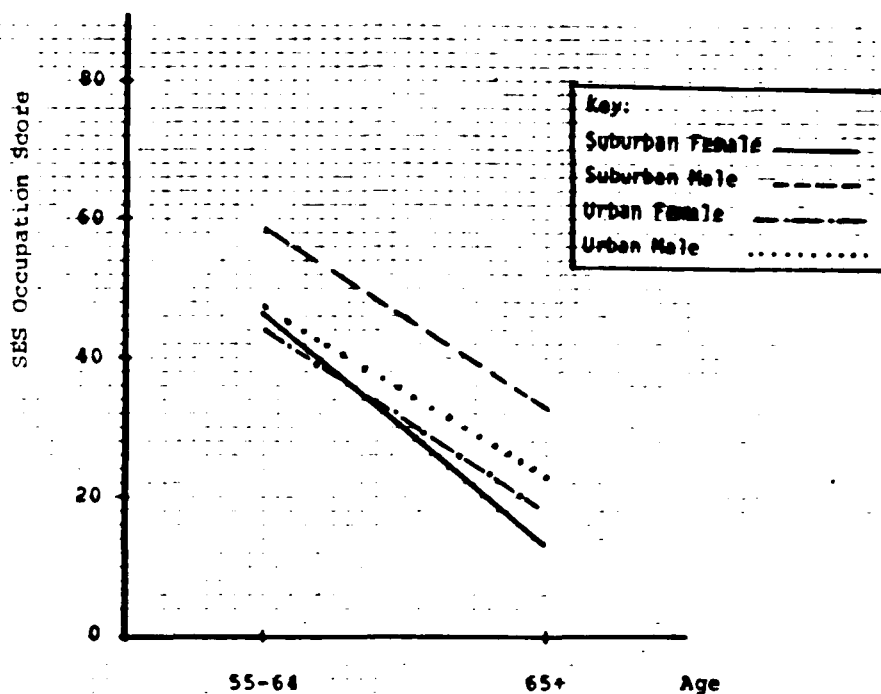
URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-27.96	-4.09	.00
D ₂ (Male)	3.29	0.44	N.S.
D ₃ (Male x 65+)	6.72	0.67	N.S.
Constant (Female x 55-64)	43.26	8.72	.00

Adjusted R² = .18

F = 3.87 (d.f. = 3,104); p < .000

Figure 32
 PLOT OF MEAN SES OCCUPATION SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN DENVER



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-33.66	-3.24	.00
D ₂ (Male)	12.53	1.33	N.S.
D ₃ (Male x 65+)	5.01	0.39	N.S.
Constant (Female x 55-64)	46.50	5.73	.000

Adjusted R² = .27

F = 12.30 (d.f. = 3,87); p < .000

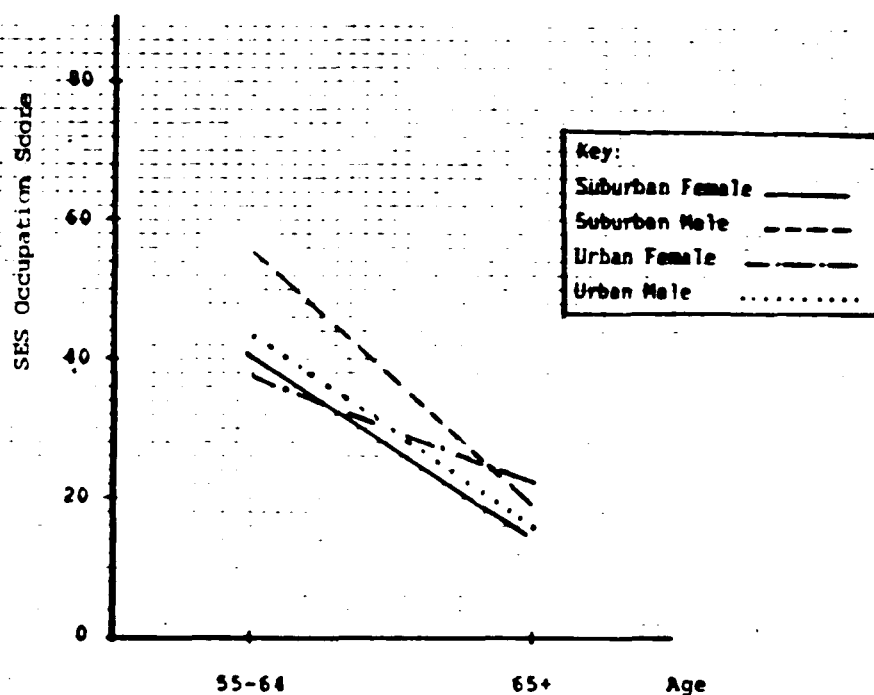
URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-27.18	-3.72	.00
D ₂ (Male)	3.08	0.39	N.S.
D ₃ (Male x 65+)	2.08	0.20	N.S.
Constant (Female x 55-64)	44.64	7.71	.00

Adjusted R² = .17

F = 9.21 (d.f. = 3,117); p < .000

Figure 33
 PLOT OF MEAN SLS OCCUPATION SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN FT. LAUDERDALE



SUBURBAN

<u>Variable</u>	<u>Coefficient</u>	<u>T-Value</u>	<u>Significance</u>
D ₁ (65+)	-26.09	-4.48	.00
D ₂ (Male)	14.07	2.32	.02
D ₃ (Male x 65+)	-8.07	-1.07	N.S.
Constant (Female x 55-64)	40.93	9.00	.00

Adjusted R² = .26

F = 24.72 (d.f. = 3,20); p < .000

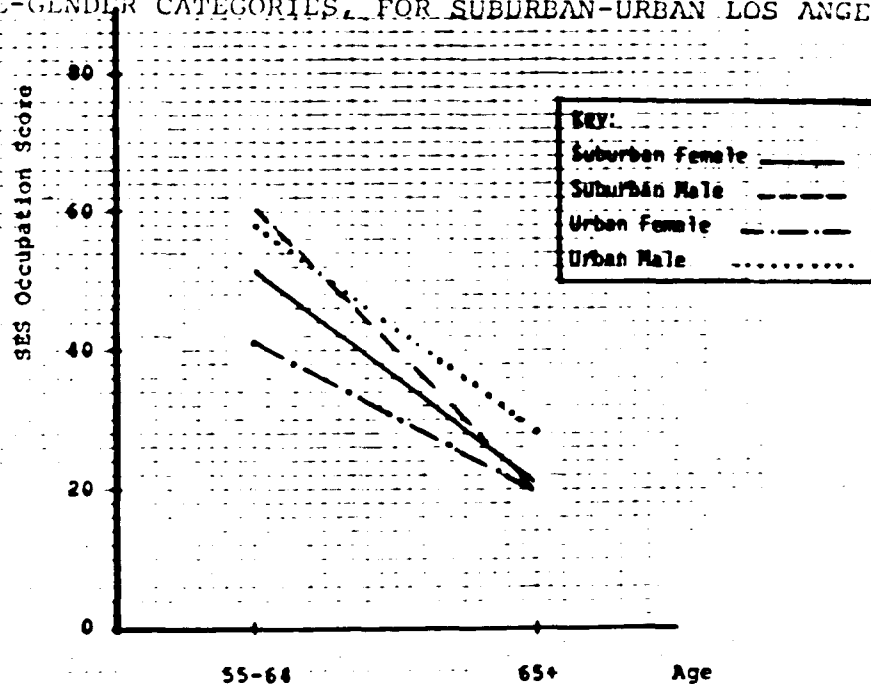
URBAN

<u>Variable</u>	<u>Coefficient</u>	<u>T-Value</u>	<u>Significance</u>
D ₁ (65+)	-15.12	-2.49	.01
D ₂ (Male)	4.52	0.77	N.S.
D ₃ (Male x 65+)	-13.47	-1.73	N.S.
Constant (Female x 55-64)	38.28	8.37	.00

Adjusted R² = .18

F = 13.93 (d.f. = 3,169); p < .000

Figure 34
 PLOT OF MEAN SES OCCUPATION SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN LOS ANGELES



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-31.73	-5.39	.00
D ₂ (Male)	7.70	1.38	N.S.
D ₃ (Male x 65+)	-8.55	-1.07	N.S.
Constant (Female x 55-64)	53.24	12.32	.00

Adjusted R² = .30

F = 26.64 (d.f. = 3,198); $p < .000$

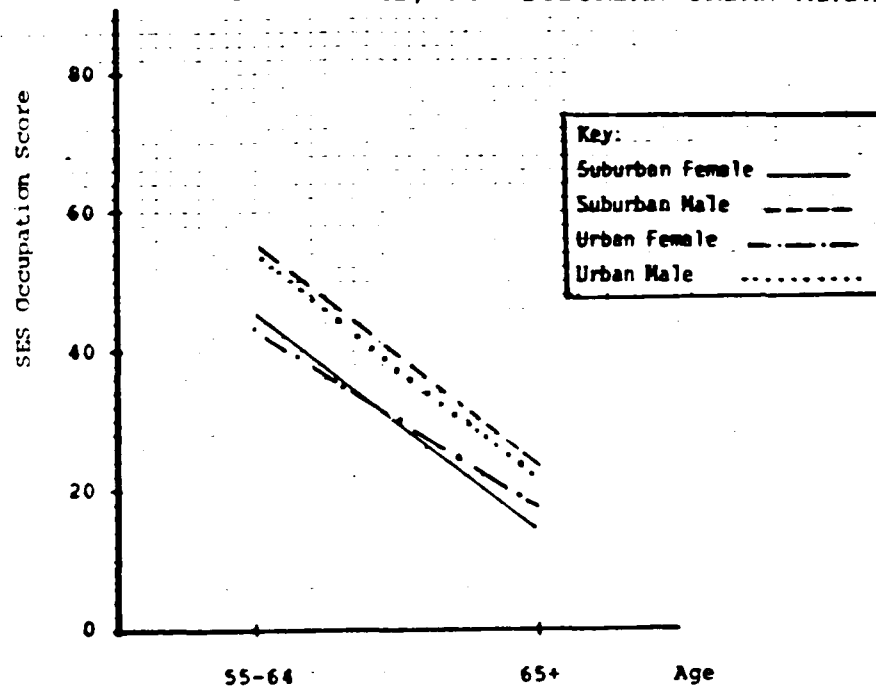
URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-22.67	-1.88	.06
D ₂ (Male)	15.39	1.28	.20
D ₃ (Male x 65+)	-6.57	-0.43	.66
Constant (Female x 55-64)	41.89	4.26	.00

Adjusted R² = .17

F = 5.73 (d.f. = 3,64); $p < .000$

Figure 35
PLOT OF MEAN SES OCCUPATION SCORES
BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN MIAMI



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-30.27	-4.18	.00
D ₂ (Male)	10.42	1.33	N.S.
D ₃ (Male x 65+)	-2.17	-0.22	N.S.
Constant (Female x 55-64)	46.00	7.68	.00

Adjusted R² = .29

F = 16.25 (d.f. = 3,110); p < .000

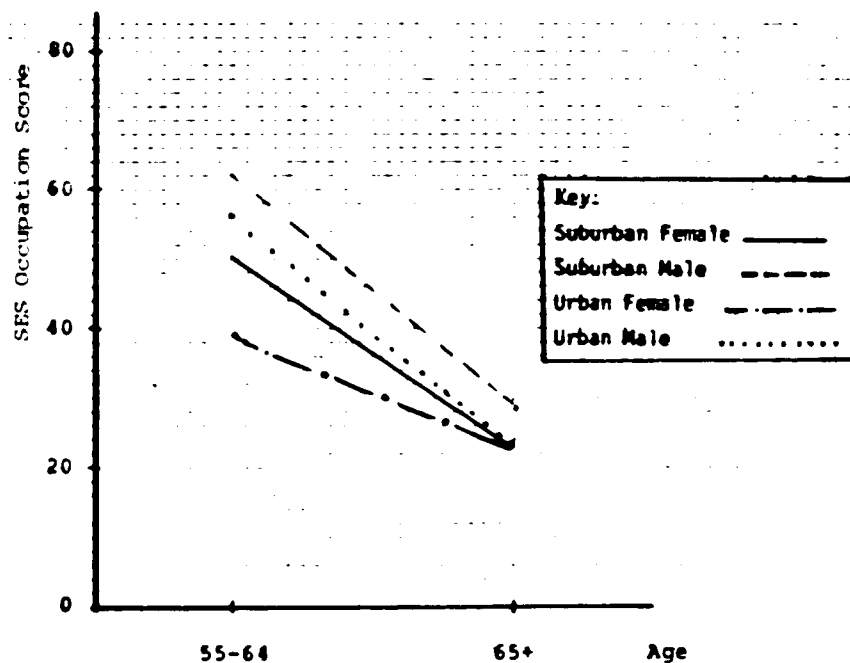
URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	26.52	-3.31	.00
D ₂ (Male)	11.93	1.57	N.S.
D ₃ (Male x 65+)	-5.98	-0.56	N.S.
Constant (Female x 55-64)	43.14	7.62	.000

Adjusted R² = .25

F = 11.52 (d.f. = 3,921); p < .000

Figure 36
 PLOT OF MEAN SES OCCUPATION SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN NEW YORK CITY



SUBURBAN

Variable	Coefficient	T-Value	Significance
D_1 (65+)	-27.89	-3.04	.00
D_2 (Male)	11.44	1.37	N.S.
D_3 (Male x 65+)	-4.57	-0.42	N.S.
Constant (Female x 55-64)	-50.56	6.82	.00

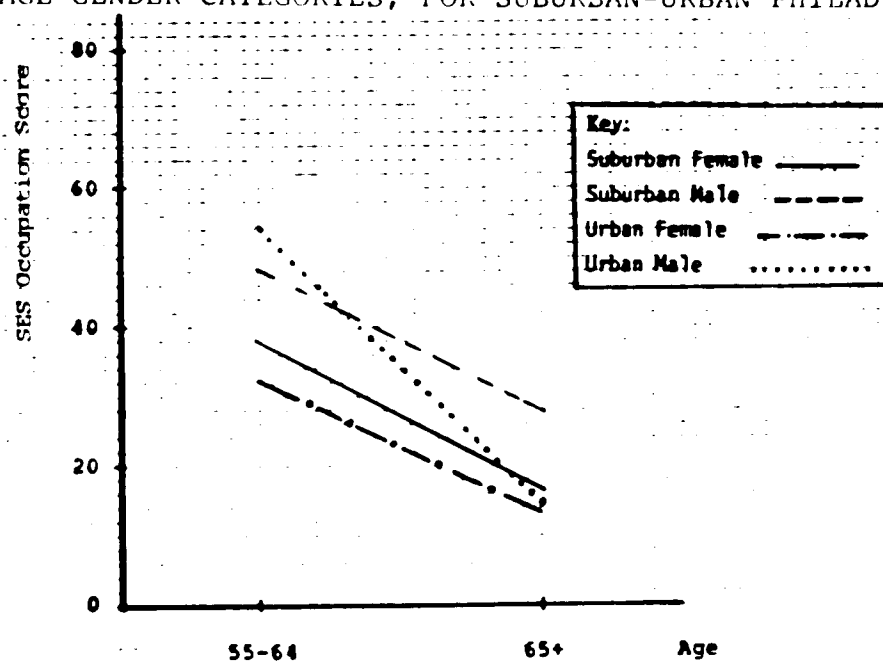
Adjusted R^2 = .23 $F = 16.06$ (d.f. = 3,144); $p < .000$

URBAN

Variable	Coefficient	T-Value	Significance
D_1 (65+)	-16.78	-4.02	.00
D_2 (Male)	16.69	4.10	.00
D_3 (Male x 65+)	-15.69	-2.81	.00
Constant (Female x 55-64)	39.45	12.74	.00

Adjusted R^2 = .21 $F = 34.69$ (d.f. = 3,371); $p < .000$

Figure 37
 PLOT OF MEAN SES OCCUPATION SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN PHILADELPHIA



SUBURBAN

Variable	Coefficient	T-Value	Significance
D_1 (65+)	-21.58	-2.41	.02
D_2 (Male)	10.31	.36	N.S.
D_3 (Male x 65+)	1.30	0.11	N.S.
Constant (Female x 55-64)	38.80	6.70	.00

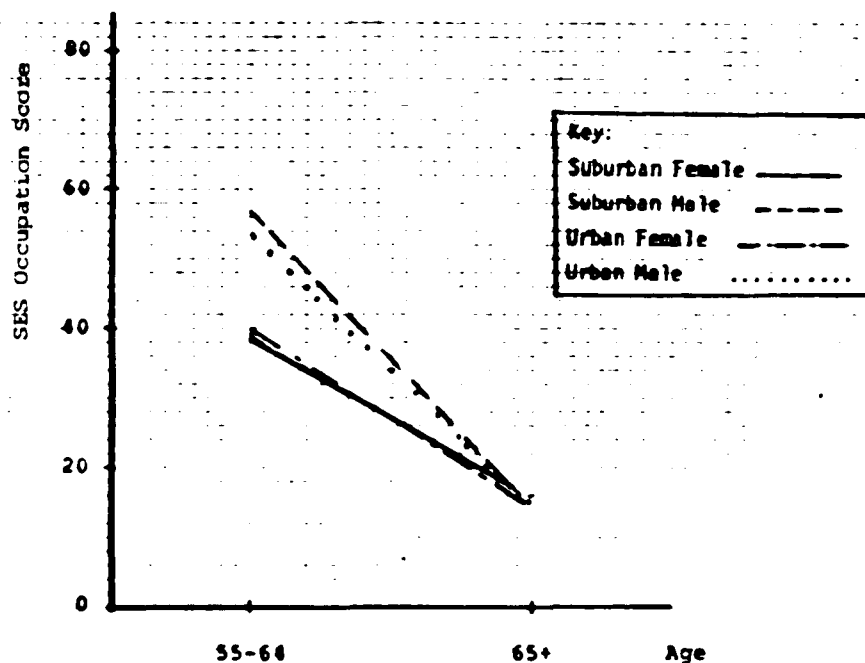
Adjusted R^2 = .12 F = .51 (d.f. = 3,99); $p < .000$

URBAN

Variable	Coefficient	T-Value	Significance
D_1 (65+)	-18.24	-2.44	.02
D_2 (Male)	22.26	2.68	.00
D_3 (Male x 65+)	-21.46	-2.08	.04
Constant (Female x 55-64)	32.92	5.33	.00

Adjusted R^2 = .32 F = 13.84 (d.f. = 3,78); $p < .000$

Figure 38
 PLOT OF MEAN SES OCCUPATION SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN PHOENIX



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-21.60	-3.02	.00
D ₂ (Male)	17.81	2.68	.01
D ₃ (Male x 65+)	-21.15	-2.38	.02
Constant (Female x 55-64)	39.33	7.63	.00

Adjusted R² = .33

F = 24.89 (d.f. = 3,144); p < .000

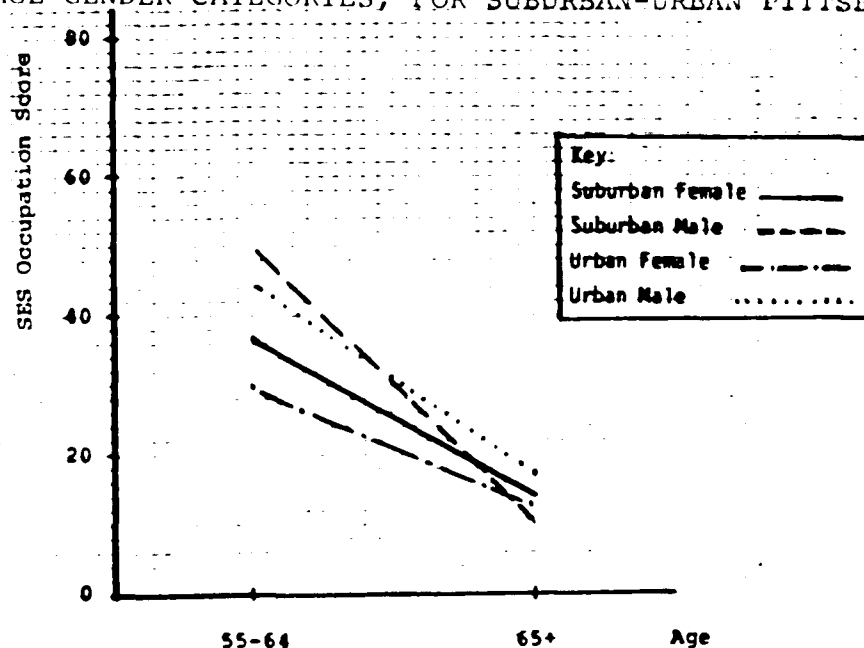
URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-23.82	-3.56	.00
D ₂ (Male)	12.10	1.80	.07
D ₃ (Male x 65+)	-15.80	-1.77	.08
Constant (Female x 55-64)	41.14	7.83	.00

Adjusted R² = .32

F = 3.118 (d.f. = 3,118); p < .000

Figure 39
 PLOT OF MEAN SES OCCUPATION SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN PITTSBURGH



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-22.03	-3.68	.00
D ₂ (Male)	12.42	2.15	.03
D ₃ (Male x 65+)	-16.55	-2.17	.03
Constant (Female x 55-64)	36.70	7.40	.00

Adjusted R² = .40

F = 30.42 (d.f. = 3,126); p < .000

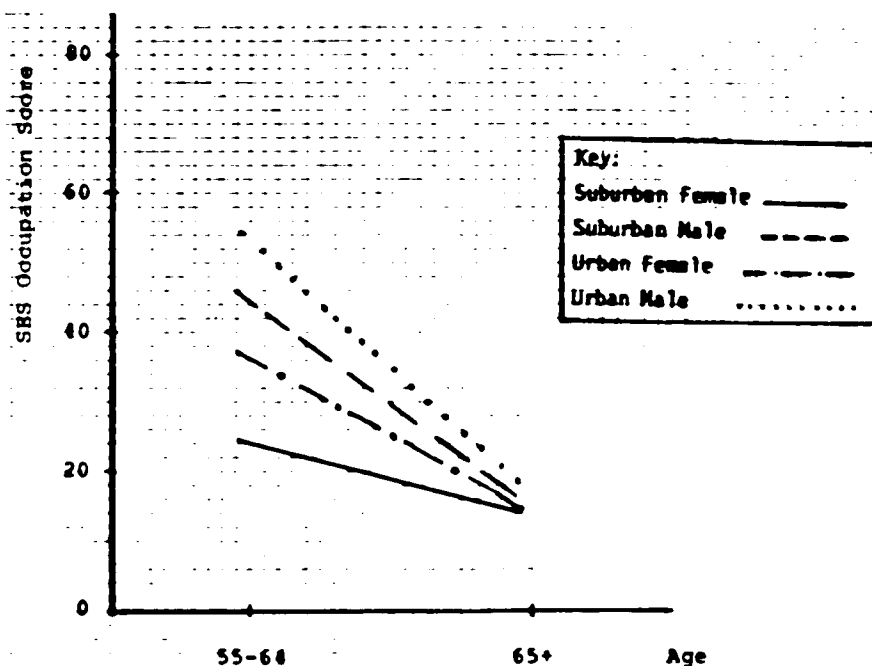
URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-16.33	-2.77	.01
D ₂ (Male)	15.49	2.72	.01
D ₃ (Male x 65+)	-12.04	-1.50	N.S.
Constant (Female x 55-64)	30.27	6.55	.00

Adjusted R² = .27

F = 16.60 (d.f. = 3,121); p < .000

Figure 40
 PLOT OF MEAN SES OCCUPATION SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN SAN DIEGO



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-10.19	-1.44	N.S.
D ₂ (Male)	20.95	3.27	.00
D ₃ (Male x 65+)	-18.57	-2.02	.04
Constant (Female x 55-64)	25.55	5.14	.00

Adjusted R² = .17

F = 11.16 (d.f. = 3,138); p < .000

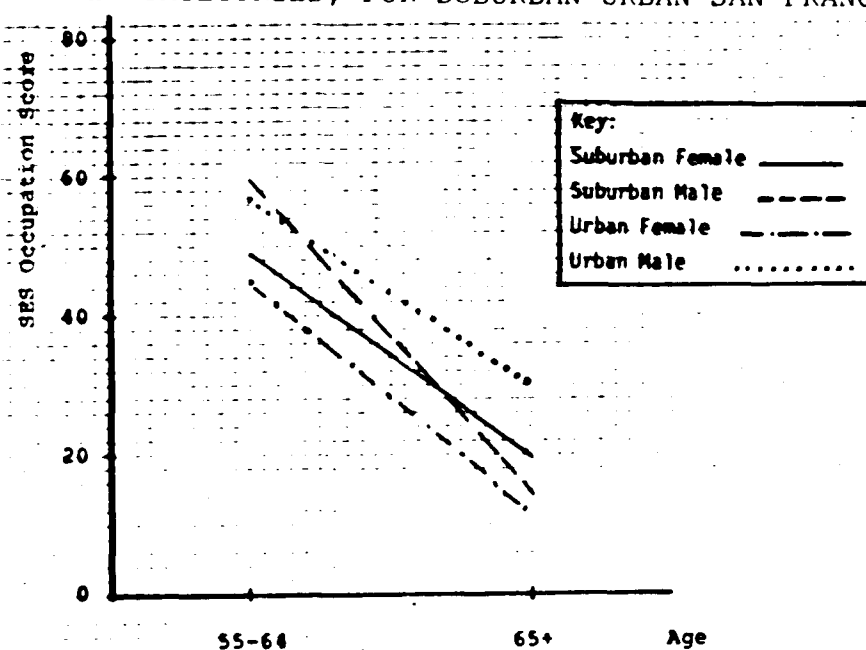
URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-20.08	-2.93	.00
D ₂ (Male)	17.64	2.56	.01
D ₃ (Male x 65+)	-15.49	-1.65	N.S.
Constant (Female x 55-64)	36.74	7.37	.00

Adjusted R² = .22

F = 14.31 (d.f. = 3,138); p < .000

Figure 41
 PLOT OF MEAN SES OCCUPATION SCORES
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN SAN FRANCISCO



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-31.52	-4.66	.00
D ₂ (Male)	10.11	1.78	.07
D ₃ (Male x 65+)	-12.49	-1.52	N.S.
Constant (Female x 55-64)	49.66	10.56	.00

Adjusted R² = .36

F = 37.50 (d.f. = 3,189); p < .000

URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-33.16	-3.83	.00
D ₂ (Male)	11.55	1.34	N.S.
D ₃ (Male x 65+)	6.48	.55	N.S.
Constant (Female x 55-64)	45.82	7.18	.00

Adjusted R² = .22

F = 10.99 (d.f. = 3,103); p < .000

Table 9
SUMMARY OF RESULTS WHEN SES OCCUPATION SCORES ARE THE SURROGATES

14 Specific Metropolitan Markets (Suburban/Urban)														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
H ₁ : With increasing age, there will be a corresponding decline in SES occupation scores.	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A
H ₂ : With advances in age from mature adults to young-elderly, there will be a sharper decline in SES occupation scores than the decline from younger-elderly to older elderly.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H ₃ : Females will score lower than males on the SES occupation scale.	R/A	R/R	R/R	A/A	A/A	A/R	R/A	A/A	A/A	A/A	R/R	R/A	A/A	A/A
H ₄ -H ₅ : Older-females (older-males) will score lower on the SES occupation score scale than younger-females (younger-males).	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A
H ₆ : Younger-females will score lower than younger-males on the SES occupation scale.	A/A	R/R	A/R	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A
H ₇ : Older-females will score lower than older-males on the SES occupation scale.	R/A	A/A	R/A	A/A	A/A	A/R	R/A	A/A	A/A	A/A	R/R	R/A	A/A	R/A
H ₈ : Younger-females will score lower than older-males on the SES occupation scale.	R/R	R/R	R/R	R/R	R/R	R/R	R/R	R/R	R/R	R/R	R/R	R/R	R/R	R/R
OVERALL PATTERN	L/L	L/L	L/D	D/D	D/P	D/L	L/L	P/L	L/L	P/L	L/L	L/L	L/L	L/D

Key:

1 = Atlanta, 2 = Boston, 3 = Buffalo, 4 = Chicago, 5 = Denver, 6 = Ft. Lauderdale, 7 = Los Angeles, 8 = Miami, 9 = New York City, 10 = Philadelphia, 11 = Phoenix, 12 = Pittsburgh, 13 = San Diego, 14 = San Francisco, A = Accepted, R = Rejected, L = Leveling, D = Double Jeopardy, P = Parallelism, NA = Not Applicable.

The results pertaining to this hypothesis differ for suburban and urban markets. Specifically, the evidence for only eight of the fourteen suburban markets support acceptance, whereas, the results for twelve of the fourteen urban markets support acceptance of the hypothesis.

H₈: Younger-females will score lower than older-males on the SES occupation scale.

The findings associated with this hypothesis are unequivocal in supporting its acceptance. All of the individual results, for both suburban and urban markets, indicate the rejection of the hypothesis.

As far as advancing leveling or double jeopardy, the evidence summarized in Table 9 provides rather strong support for leveling. Specifically, there are nineteen cases (nine suburban, ten urban) that uphold leveling, six cases (three suburban, three urban) that champion double jeopardy, and three that indicate a pattern of parallelism (two suburban, one urban).

Number of Employed Family Members

Figures 42-55 display the plot of the mean number of employed family members for each of the age-gender categories, for the specific matched suburban-urban subsamples. Also, presented immediately below these plots are the corresponding dummy regression equations and

their associated statistics.

As a basis for examining the hypotheses, Table 10 summarizes the appropriate results from Figures 42-55.

H_1 : With increasing age, there will be a corresponding decline in the number of employed family members.

As revealed in Table 10, the evidence for all suburban and urban market areas suggest that this hypothesis be accepted.

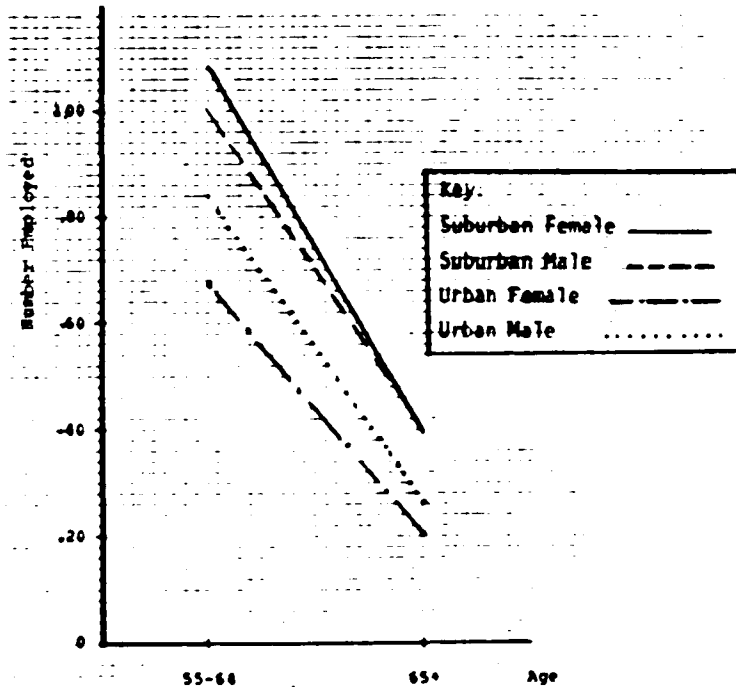
H_2 : With advances in age from mature adults (age category 55-64) to young-elderly (age category 65-74), there will be a sharper decline in the number of employed family members than the decline from young-elderly (age 65-74) to old-elderly (age category 75-plus).

This hypothesis does not apply to this level of analysis.

H_3 : Females will score lower than males on the number of employed family member scale.

The evidence suggests that this hypothesis be accepted for both the suburban and urban market areas. More precisely, the findings indicate that for twelve of the fourteen suburban markets the hypothesis should be accepted, and for all of the urban markets the results support the hypothesis.

Figure 42
 PLOT OF MEAN NUMBER OF EMPLOYED FAMILY MEMBERS
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN ATLANTA



SUBURBAN:

Variable	Coefficient	T-Value	Significance
D_1 (65+)	-0.69	-2.41	.02
D_2 (Male)	-0.08	-0.32	N.S.
D_3 (Male x 65+)	0.08	0.21	N.S.
Constant (Female x 55-64)	1.08	4.86	.00

Adjusted R^2 = .11

F = 4.15 (d.f. = 3,71); $p < .000$

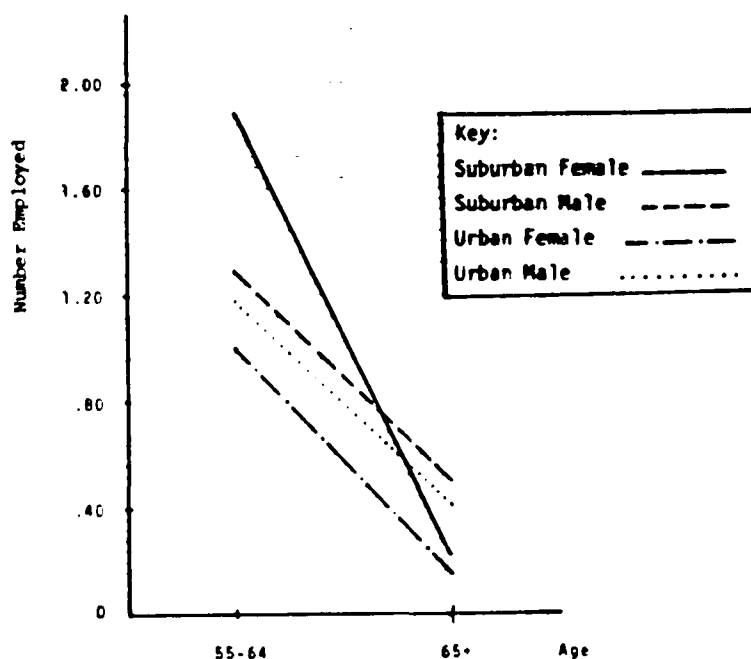
URBAN:

Variable	Coefficient	T-Value	Significance
D_1 (65+)	-0.47	-2.64	.00
D_2 (Male)	0.17	1.04	N.S.
D_3 (Male x 65+)	-0.11	-0.48	N.S.
Constant (Female x 55-64)	0.67	5.41	.00

Adjusted R^2 = .17

F = 7.14 (d.f. = 3,89); $p < .000$

Figure 43
 PLOT OF MEAN NUMBER OF EMPLOYED FAMILY MEMBERS
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN BOSTON



SUBURBAN

<u>Variable</u>	<u>Coefficient</u>	<u>T-Value</u>	<u>Significance</u>
D ₁ (65+)	-1.67	-6.36	.00
D ₂ (Male)	-0.58	-2.30	.02
D ₃ (Male x 65+)	0.89	2.71	.00
Constant (Female x 55-64)	1.87	8.90	.00

Adjusted R² = .33

F = 18.76 (d.f. = 3,58); p < .000

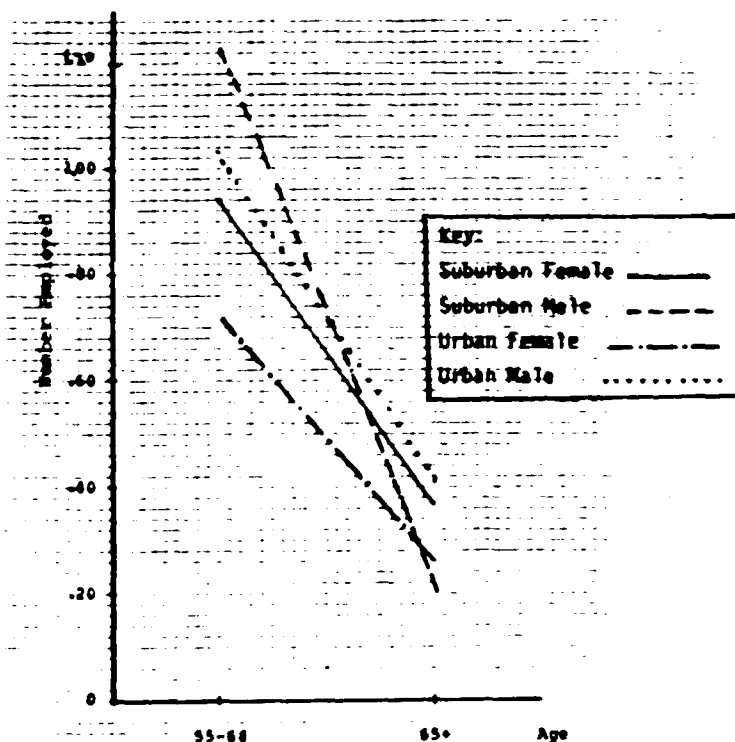
URBAN

<u>Variable</u>	<u>Coefficient</u>	<u>T-Value</u>	<u>Significance</u>
D ₁ (65+)	-0.86	-4.23	.00
D ₂ (Male)	0.18	0.83	N.S.
D ₃ (Male x 65+)	0.09	0.31	N.S.
Constant (Female x 55-64)	1.00	6.00	.00

Adjusted R² = .38

F = 13.86 (d.f. = 3,61); p < .000

Figure 44
 PLOT OF MEAN NUMBER OF EMPLOYED FAMILY MEMBERS
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN BUFFALO



SUBURBAN

<u>Variable</u>	<u>Coefficient</u>	<u>T-Value</u>	<u>Significance</u>
D_1 (65+)	-0.57	-2.68	.01
D_2 (Male)	0.29	1.48	N.S.
D_3 (Male x 65+)	-0.46	-1.67	N.S.
Constant (Female x 55-64)	0.94	5.69	.00

Adjusted R^2 = .27

F = 15.5 (d.f. = 3,112); $p < .000$

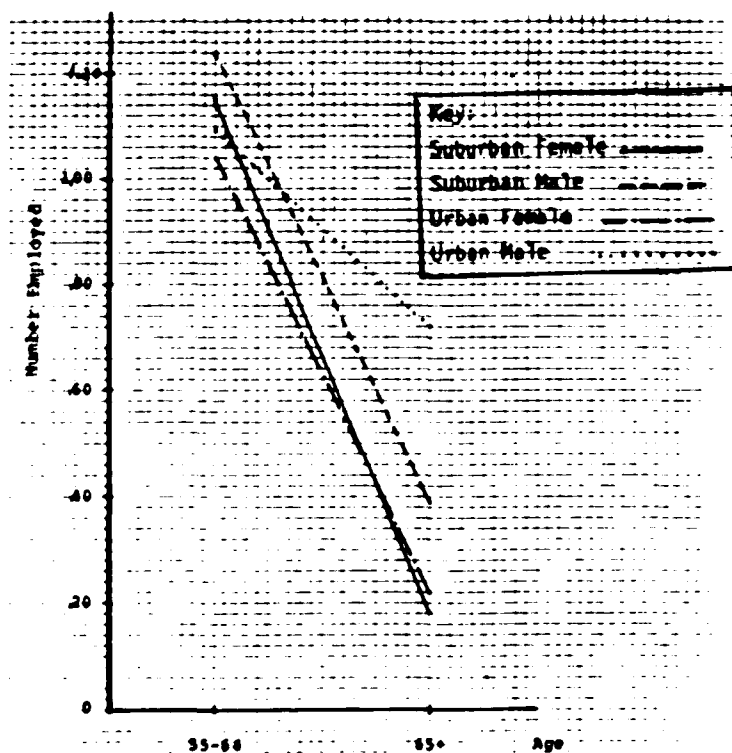
URBAN

<u>Variable</u>	<u>Coefficient</u>	<u>T-Value</u>	<u>Significance</u>
D_1 (65+)	-0.48	-2.74	.01
D_2 (Male)	0.31	1.75	.08
D_3 (Male x 65+)	-0.14	-0.60	N.S.
Constant (Female x 55-64)	0.72	5.35	.00

Adjusted R^2 = .16

F = 9.36 (d.f. = 3,125); $p < .000$

Figure 45
 PLOT OF MEAN NUMBER OF EMPLOYED FAMILY MEMBERS
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN CHICAGO



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-0.97	-5.05	.00
D ₂ (Male)	0.99	5.20	N.S.
D ₃ (Male x 65+)	0.12	0.44	N.S.
Constant (Female x 55-64)	1.15	8.48	.00

Adjusted R² = .25

F = 16.55 (d.f. = 3,135); $p < .000$

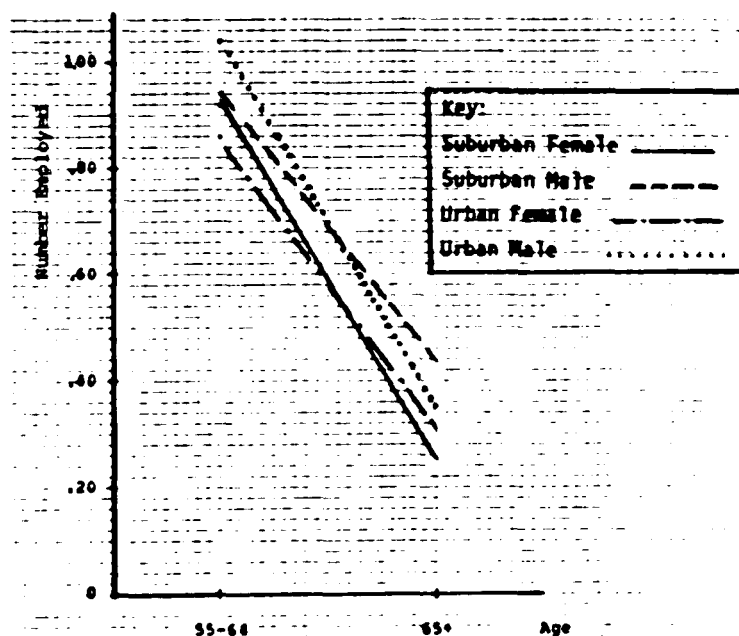
URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-0.84	-3.92	.00
D ₂ (Male)	0.05	0.23	N.S.
D ₃ (Male x 65+)	0.47	1.51	N.S.
Constant (Female x 55-64)	1.04	6.69	.00

Adjusted R² = .15

F = 7.12 (d.f. = 3,104); $p < .000$

Figure 46
 PLOT OF MEAN NUMBER OF EMPLOYED FAMILY MEMBERS
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN DENVER



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-0.67	-3.19	.00
D ₂ (Male)	0.02	0.13	N.S.
D ₃ (Male x 65+)	0.15	0.58	N.S.
Constant (Female x 55-64)	0.92	5.54	.00

Adjusted R² = .20

F = 8.39 (d.f. = 3,88); p < .000

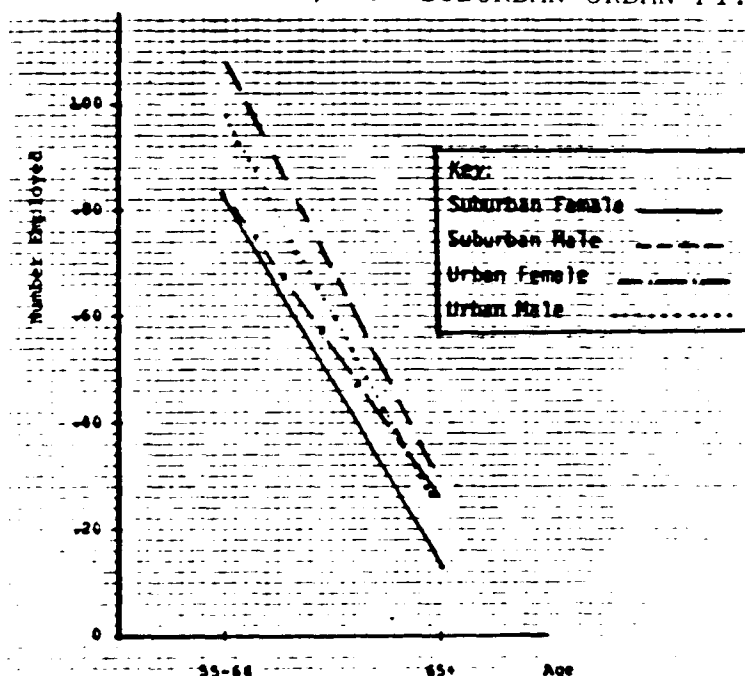
URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-0.57	-3.38	.00
D ₂ (Male)	0.18	0.95	N.S.
D ₃ (Male x 65+)	-0.12	-0.52	N.S.
Constant (Female x 55-64)	0.86	6.38	.00

Adjusted R² = .18

F = 10.24 (d.f. = 3,119); p < .000

Figure 47
 PLOT OF MEAN NUMBER OF EMPLOYED FAMILY MEMBERS
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN FT. LAUDERDALE



SUBURBAN

<u>Variable</u>	<u>Coefficient</u>	<u>T-Value</u>	<u>Significance</u>
D ₁ (65+)	-0.68	-4.91	.00
D ₂ (Male)	0.25	1.73	.08
D ₃ (Male x 65+)	-0.13	-0.71	N.S.
Constant (Female x 55-64)	0.83	7.55	.00

Adjusted R² = .26

F = 25.20 (d.f. = 3,206); p < .000

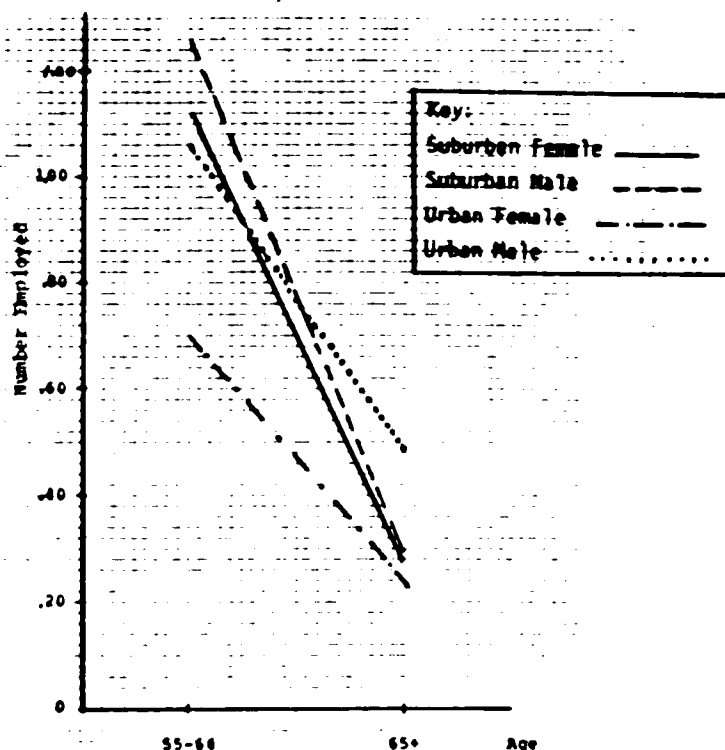
URBAN

<u>Variable</u>	<u>Coefficient</u>	<u>T-Value</u>	<u>Significance</u>
D ₁ (65+)	-0.58	-3.77	.00
D ₂ (Male)	0.15	1.00	N.S.
D ₃ (Male x 65+)	-0.17	-0.88	N.S.
Constant (Female x 55-64)	0.83	7.10	.00

Adjusted R² = .22

F = 17.09 (d.f. = 3,171); p < .000

Figure 48
 PLOT OF MEAN NUMBER OF EMPLOYED FAMILY MEMBERS
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN LOS ANGELES



SUBURBAN:

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-0.81	-6.03	.00
D ₂ (Male)	0.14	1.10	N.S.
D ₃ (Male x 65+)	-0.17	-0.90	N.S.
Constant (Female x 55-64)	1.09	11.05	.00

Adjusted R² = .33

F = 33.77 (d.f. = 3,200); p < .000

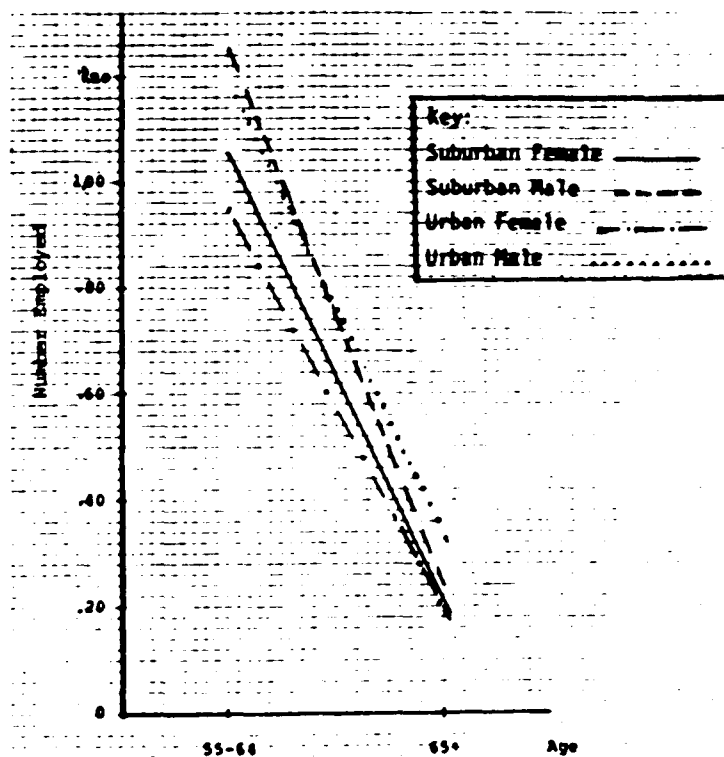
URBAN:

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-0.46	-1.79	.08
D ₂ (Male)	0.39	1.51	N.S.
D ₃ (Male x 65+)	-0.10	-0.31	N.S.
Constant (Female x 55-64)	0.67	3.18	.00

Adjusted R² = .17

F = 5.80 (d.f. = 3,66); p < .000

Figure 49
 PLOT OF MEAN NUMBER OF EMPLOYED FAMILY MEMBERS
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN MIAMI



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-0.87	-4.68	.00
D ₂ (Male)	0.19	0.98	N.S.
D ₃ (Male x 65+)	-0.12	-0.52	N.S.
Constant (Female x 55-64)	1.06	7.10	.00

Adjusted R² = .35

F = 21.62 (d.f. = 3,111); p < .000

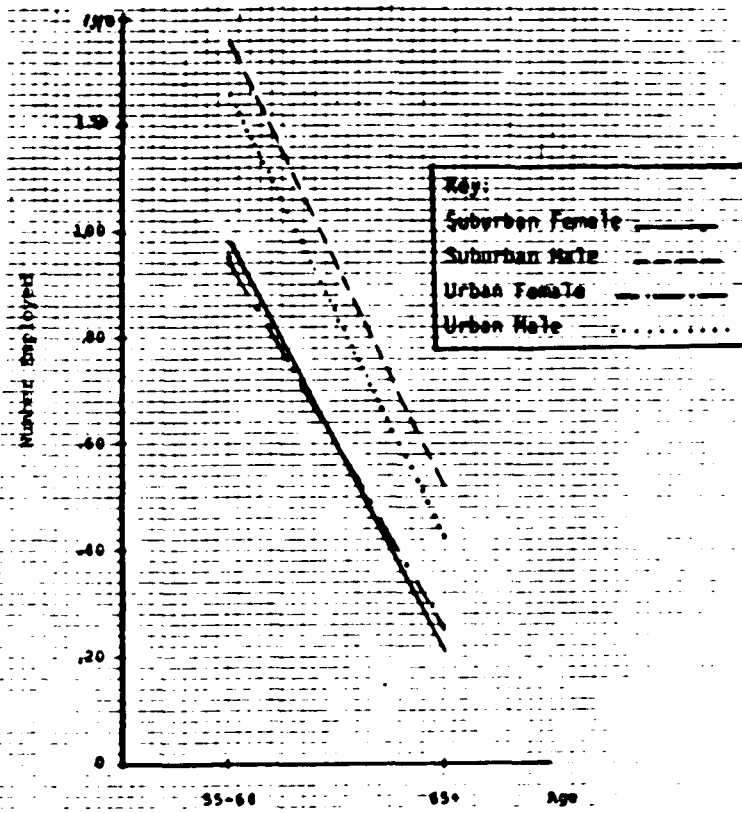
URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	0.77	-4.81	.00
D ₂ (Male)	0.24	1.39	N.S.
D ₃ (Male x 65+)	-0.10	-0.42	N.S.
Constant (Female x 55-64)	0.95	7.40	.00

Adjusted R² = .33

F = 16.67 (d.f. = 3,93); p < .000

PLOT OF MEAN NUMBER OF EMPLOYED FAMILY MEMBERS
BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN NEW YORK CITY



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	0.78	-3.67	.00
D ₂ (Male)	0.37	1.88	.06
D ₃ (Male x 65+)	-0.06	-0.22	N.S.
Constant (Female x 55-64)	1.00	5.70	.00

Adjusted R² = .30

F = 22.66 (d.f. = 3,146); p < .000

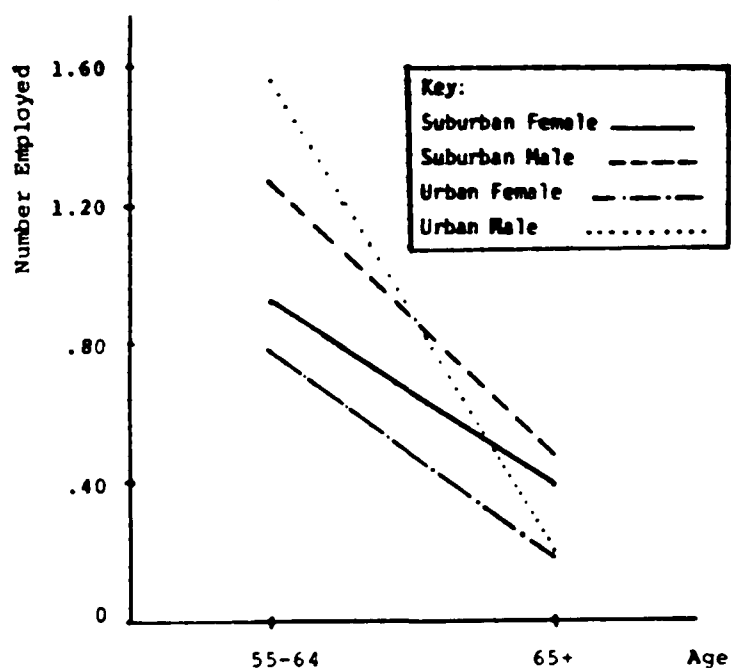
URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-0.72	-7.01	.00
D ₂ (Male)	0.30	3.00	.00
D ₃ (Male x 65+)	-0.13	-0.97	N.S.
Constant (Female x 55-64)	0.96	12.60	.00

Adjusted R² = .28

F = 50.00 (d.f. = 3,378); p < .000

Figure 51
 PLOT OF MEAN NUMBER OF EMPLOYED FAMILY MEMBERS
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN PHILADELPHIA



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-0.53	-2.03	.05
D ₂ (Male)	0.34	1.52	N.S.
D ₃ (Male x 65+)	-0.25	-0.72	N.S.
Constant (Female x 55-64)	-0.92	5.43	.00

Adjusted R² = .13

F = 6.11 (d.f. = 3,99); p < .001

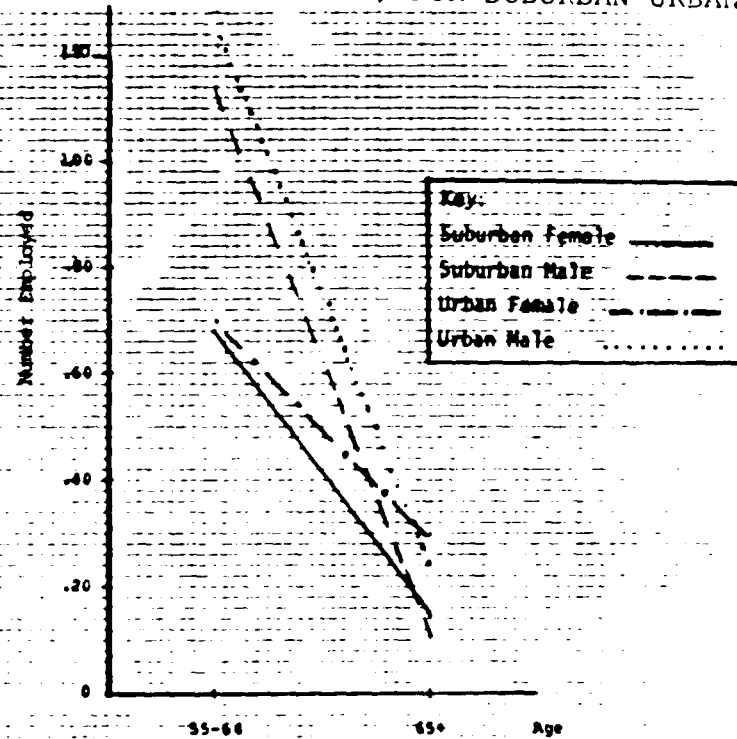
URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-0.59	-2.73	.01
D ₂ (Male)	0.79	3.30	.00
D ₃ (Male x 65+)	-0.77	-2.58	.01
Constant (Female x 55-64)	0.77	4.31	.00

Adjusted R² = .40

F = 19.25 (d.f. = 3,78); p < .000

Figure 52
 PLOT OF MEAN NUMBER OF EMPLOYED FAMILY MEMBERS
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN PHOENIX



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-0.52	-3.50	.00
D ₂ (Male)	0.47	3.39	.00
D ₃ (Male x 65+)	-0.52	-2.83	.00
Constant (Female x 55-64)	0.67	6.18	.00

Adjusted R² = .40

F = 33.98 (d.f. = 3,145); p < .000

URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-0.42	-2.37	.02
D ₂ (Male)	0.56	3.12	.00
D ₃ (Male x 65+)	-0.62	-2.62	.01
Constant (Female x 55-64)	0.71	5.13	.00

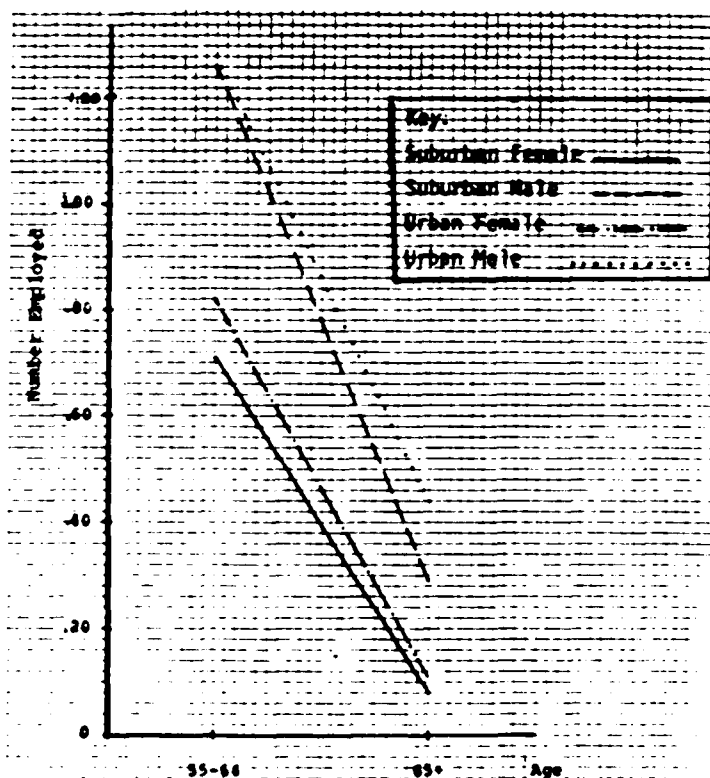
Adjusted R² = .31

F = 18.75 (d.f. = 3,118); p < .000

Figure 53

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PLOT OF MEAN NUMBER OF EMPLOYED FAMILY MEMBERS
BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN PITTSBURGH



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-0.62	-3.83	.00
D ₂ (Male)	0.55	3.49	.00
D ₃ (Male x 65+)	-0.34	-1.64	N.S.
Constant (Female x 55-64)	0.71	5.23	.00

Adjusted R² = .44

F = 35.76 (d.f. = 3,128); p < .000

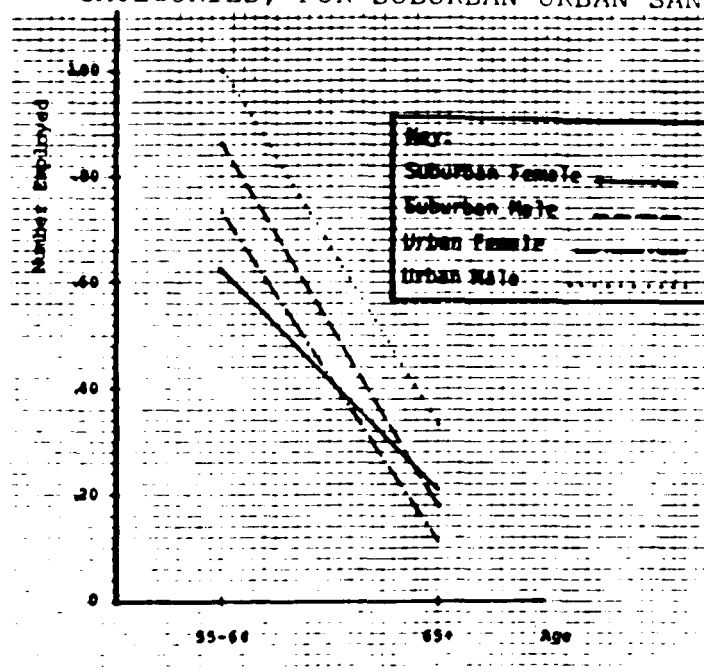
URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-0.70	-3.89	.00
D ₂ (Male)	0.46	2.64	.01
D ₃ (Male x 65+)	-0.13	-0.55	N.S.
Constant (Female x 55-64)	0.82	5.76	.00

Adjusted R² = .33

F = 21.38 (d.f. = 3,121); p < .000

Figure 54
 PLOT OF MEAN NUMBER OF EMPLOYED FAMILY MEMBERS
 BY AGE-GENDER CATEGORIES, FOR SUBURBAN-URBAN SAN DIEGO



SUBURBAN

Variable	Coefficient	T-Value	Significance
D_1 (65+)	-0.41	-2.50	.01
D_2 (Male)	0.24	1.65	N.S.
D_3 (Male x 65+)	-0.27	-1.32	N.S.
Constant (Female x 55-64)	0.62	5.44	.00

Adjusted R^2 = .18

F = 11.41 (d.f. = 3,141); $p < .000$

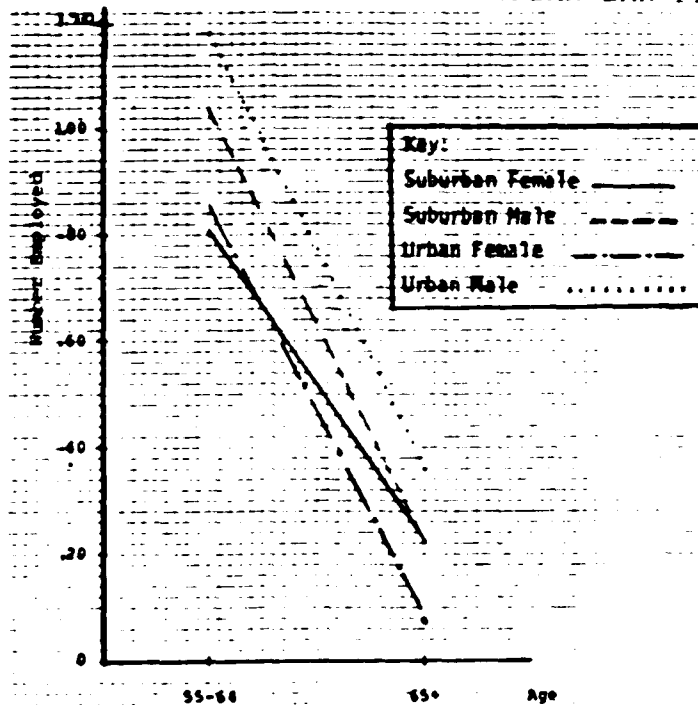
URBAN

Variable	Coefficient	T-Value	Significance
D_1 (65+)	-0.60	-3.88	.00
D_2 (Male)	0.29	1.86	.06
D_3 (Male x 65+)	0.08	-0.36	N.S.
Constant (Female x 55-64)	0.71	6.28	.00

Adjusted R^2 = .21

F = 13.98 (d.f. = 3,140); $p < .000$

Figure 55
 PLOT OF MEAN NUMBER OF EMPLOYED FAMILY MEMBERS
 BY AGE-GROUP CATEGORIES, FOR SUBURBAN-URBAN SAN FRANCISCO



SUBURBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	-0.58	-3.90	.00
D ₂ (Male)	0.23	1.85	.06
D ₃ (Male x 65+)	-0.22	-1.21	N.S.
Constant (Female x 55-64)	0.81	7.67	.00

Adjusted R² = .28

F = 26.12 (d.f. = 3,189); p < .000

URBAN

Variable	Coefficient	T-Value	Significance
D ₁ (65+)	0.79	-5.08	.00
D ₂ (Male)	0.31	2.02	.05
D ₃ (Male x 65+)	0.04	-0.20	N.S.
Constant (Female x 55-64)	0.86	7.40	.00

Adjusted R² = .38

F = 23.15 (d.f. = 3,106); p < .000

Table 10

SUMMARY OF RESULTS WHEN NUMBER OF EMPLOYED FAMILY MEMBERS ARE THE SURROGATES

14 Specific Metropolitan Markets (Suburban/Urban)														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
H ₁ : With increasing age, there will be a corresponding decline in the number of employed family members.	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A
H ₂ : With advances in age from mature adults to young-elderly, there will be a sharper decline in the employed family members than the decline from young-elderly to old-elderly.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H ₃ : Females will score lower than males on the number of employed family member scale.	R/A	R/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A
H ₄ -H ₅ : Older-females (older-males) will score lower than younger-females (younger-males) on the number of employed family member scale.	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A
H ₆ : Younger-females will score lower than younger-males on the number of employed family member scale.	R/A	R/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A
H ₇ : Older-females will score lower than older-males on the number of employed family member scale.	R/A	A/A	R/A	A/A	A/A	A/R	A/A	A/A	A/A	A/R	R/R	A/A	R/A	R/A
H ₈ : Younger-females will score lower than older-males on the number of employed family member scale.	R/R	R/R	R/R	R/R	R/R	R/R	R/R	R/R	R/R	R/R	R/R	R/R	R/R	R/R
OVERALL PATTERN	L/L	L/D	L/L	D/D	D/L	L/L	L/L	L/L	L/L	L/L	L/L	L/L	L/L	L/L

Key:

1 = Atlanta, 2 = Boston, 3 = Buffalo, 4 = Chicago, 5 = Denver, 6 = Ft. Lauderdale, 7 = Los Angeles, 8 = Miami, 9 = New York City, 10 = Philadelphia, 11 = Phoenix, 12 = Pittsburgh, 13 = San Diego, 14 = San Francisco, A = Accepted, R = Rejected, L = Leveling, D = Double Jeopardy, P = Parallelism, NA = Not Applicable.

H₄-H₅: Older-females (older-males) will score lower than younger-females (younger-males) on the number of employed family member scale.

The summary evidence indicates that these two hypotheses should be accepted for all of the fourteen pairs of suburban-urban markets.

H₆: Younger-females will score lower than younger males on the number of employed family member scale.

While not unanimous, the findings for both suburban and urban markets strongly advocate the acceptance of this hypothesis. Specifically, the results for twelve of the fourteen suburban markets and all fourteen of the urban markets point toward the acceptance of this hypothesis.

H₇: Older-females will score lower than older-males on the number of employed family member scale.

While favoring acceptance of this hypothesis, the results for the suburban and urban do reveal somewhat different patterns. Specifically, the evidence for nine of the fourteen suburban markets and eleven of the fourteen urban markets advance the acceptance of the hypothesis.

H₂: Younger-females will score lower than older-males on the number of employed family member scale.

All of the findings, for both suburban and urban markets, indicate rejection of this hypothesis.

As summarized in Table 10, an exploration of the plots and their underlying predicted values provides rather strong support for the notion that leveling is occurring with regard to the relationship between the various age-gender categories and number of employed family members. In particular, the evidence reveals that leveling was observed in twenty-four of the twenty-eight possible cases (twelve suburban, twelve urban), and that double jeopardy was found in the remaining four cases.

Some Additional Analysis

To supplement the dummy variable regression analysis, and to explicitly test for possible suburban-urban differences in the surrogates of subjective well-being, some additional analysis was undertaken using the paired comparison t-test procedure (described earlier in this chapter). More precisely, the output of the dummy variable regression analysis, in the form of predicted values for the fourteen matched suburban-urban metropolitan markets (see Tables 11-13), were input to paired comparison t-test analyses.

Table 11
THE MEAN SES INCOME PREDICTED VALUES
PRODUCED BY DUMMY VARIABLE REGRESSION ANALYSIS

	<u>Suburban</u>				<u>Urban</u>			
	<u>Females</u> <u>55-64</u>	<u>Males</u> <u>55-64</u>	<u>Females</u> <u>65+</u>	<u>Males</u> <u>65+</u>	<u>Females</u> <u>55-64</u>	<u>Males</u> <u>55-64</u>	<u>Females</u> <u>65+</u>	<u>Males</u> <u>65+</u>
Atlanta	44.91	73.88	22.11	39.23	51.52	67.08	23.25	59.04
Boston	50.87	64.97	24.04	46.55	49.54	73.12	23.58	54.21
Buffalo	42.55	67.83	16.19	40.59	34.08	60.82	17.41	45.91
Chicago	58.97	72.09	28.18	48.75	41.55	60.59	24.93	47.24
Denver	49.50	73.76	21.68	51.53	43.77	68.20	19.89	46.84
Ft. Lauderdale	52.07	73.70	27.59	50.27	42.03	66.16	36.47	49.48
L. A.	58.95	76.93	34.00	47.02	58.78	70.06	26.34	48.40
Miami	45.35	74.71	23.65	51.08	48.76	68.69	26.76	49.96
New York City	63.94	76.22	24.03	64.21	45.21	67.69	28.35	46.76
Philadelphia	39.16	70.54	32.83	48.95	41.38	63.37	23.07	37.44
Phoenix	43.67	78.22	31.92	57.82	44.00	65.76	24.56	41.97
Pittsburgh	31.41	68.57	21.05	41.19	35.43	65.56	21.57	47.80
San Diego	51.83	68.18	24.18	51.98	51.48	64.41	30.09	43.05
San Francisco	55.90	86.15	30.10	51.41	44.27	75.15	30.04	57.94

Table 12
THE MEAN SES OCCUATION PREDICTED VALUES
PRODUCED BY DUMMY VARIABLE REGRESSION ANALYSIS

	<u>Suburban</u>				<u>Urban</u>			
	<u>Females</u> <u>55-64</u>	<u>Males</u> <u>55-64</u>	<u>Females</u> <u>65+</u>	<u>Males</u> <u>65+</u>	<u>Females</u> <u>55-64</u>	<u>Males</u> <u>55-64</u>	<u>Females</u> <u>65+</u>	<u>Males</u> <u>65+</u>
Atlanta	49.91	53.63	21.39	18.16	36.62	52.92	17.35	19.96
Boston	52.13	46.34	21.65	31.66	65.73	64.53	12.91	34.54
Buffalo	44.33	50.83	21.42	15.89	37.29	37.14	16.76	25.92
Chicago	52.15	53.82	12.91	25.14	43.26	46.54	15.30	25.31
Denver	46.50	59.03	12.84	33.38	44.64	47.72	17.46	22.62
Ft. Lauderdale	40.93	55.00	14.84	20.84	38.28	42.79	23.16	14.21
L. A.	53.24	60.94	21.54	20.66	41.89	57.28	19.22	28.04
Miami	46.50	56.42	15.73	23.97	43.14	55.07	16.62	22.57
New York City	50.56	62.00	22.67	29.53	39.45	56.15	22.67	23.68
Philadelphia	38.80	49.11	17.22	28.83	32.92	55.18	14.68	15.48
Phoenix	39.33	57.14	17.73	14.39	41.14	53.24	17.32	13.62
Pittsburgh	36.71	49.13	14.68	10.55	30.27	45.77	13.94	17.00
San Diego	25.55	46.50	15.36	17.73	36.74	54.38	16.66	18.81
San Francisco	49.66	59.77	18.13	15.75	45.82	57.37	12.65	30.69

Table 13
THE MEAN NUMBER OF EMPLOYED FAMILY MEMBERS PREDICTED VALUES
PRODUCED BY DUMMY VARIABLE REGRESSION ANALYSIS

	<u>Suburban</u>				<u>Urban</u>			
	<u>Females</u> <u>55-64</u>	<u>Males</u> <u>55-64</u>	<u>Females</u> <u>65+</u>	<u>Males</u> <u>65+</u>	<u>Females</u> <u>55-64</u>	<u>Males</u> <u>55-64</u>	<u>Females</u> <u>65+</u>	<u>Males</u> <u>65+</u>
Atlanta	1.08	1.00	.39	.39	.67	.84	.20	.26
Boston	1.87	1.29	.22	.51	1.00	1.18	.14	.41
Buffalo	.94	1.23	.37	.20	.72	1.03	.24	.41
Chicago	1.15	1.24	.18	.39	1.04	1.09	.22	.72
Denver	.92	.94	.25	.42	.86	1.04	.29	.35
Ft. Lauderdale	.83	1.08	.15	.27	.33	.98	.25	.23
L. A.	1.09	1.23	.28	.25	.67	1.06	.21	.50
Miami	1.06	1.25	.18	.25	.95	1.19	.18	.32
New York City	1.00	1.37	.22	.53	.96	1.26	.25	.41
Philadelphia	.92	1.26	.39	.48	.77	1.56	.18	.20
Phoenix	.67	1.14	.15	.10	.71	1.27	.29	.24
Pittsburgh	.71	1.26	.08	.29	.82	1.28	.11	.44
San Diego	.62	.86	.21	.18	.71	1.00	.11	.33
San Francisco	.81	1.04	.23	.24	.86	1.18	.07	.34

First in the way of collaboration of the more micro dummy regression analysis just completed, the present evidence provides the following important confirmation:

1. That neither leveling nor double jeopardy are the dominant pattern that explains the relationship between the age-gender variables and SES income scores. Instead, as Figure 56 confirms, parallelism is a dominant pattern for both suburban and urban markets.

2. That leveling is the dominant pattern for both suburban and urban markets with regard to the relationship between age-gender variables and SES occupation scores. This is revealed by Figure 57, which supports the micro fourteen market-by-market analysis considered in the prior subsection.

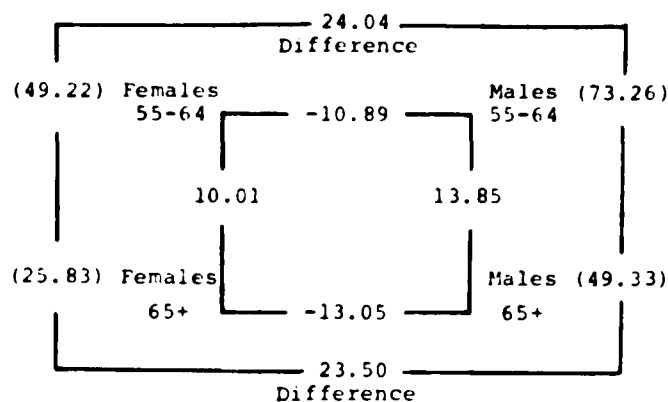
3. That leveling also is the prevailing pattern for both suburban and urban markets with respect to the number of employed family members. This collaborating pattern is indicated by the evidence provided in Figure 58.

The paired comparison t-test analysis also provided an opportunity to explicitly test for suburban-urban differences in the three surrogates of subjective well-being.

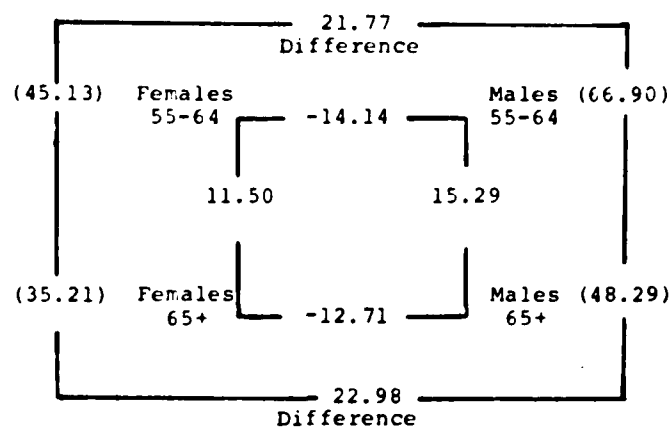
Again, for simplicity of presentation, the results pertaining to each of three surrogates are discussed separately.

Figure 56
A COMPARISON OF MEANS AND PAIRED t-TEST RESULTS FOR
THE SES INCOME SCORES, FOR A COMBINATION OF THE
14 SPECIFIC SUBURBAN-URBAN METROPOLITAN MARKETS

A. Suburban Markets



B. Urban Markets

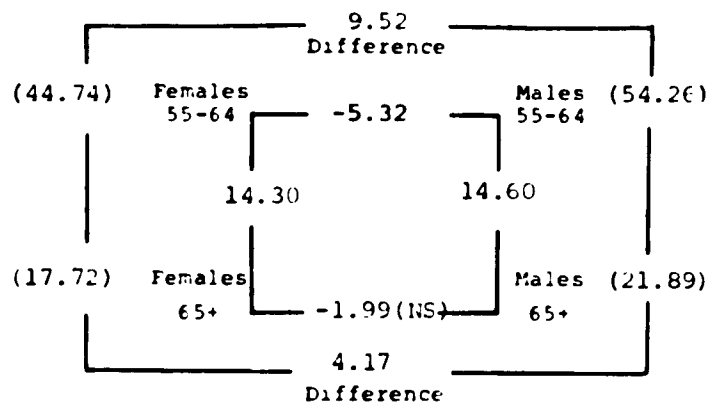


Note:

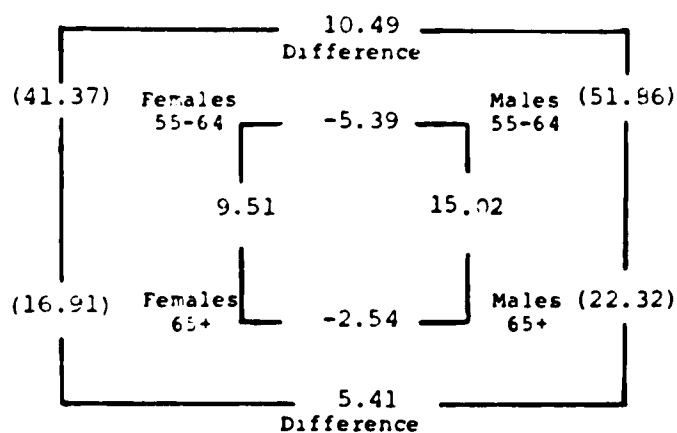
The four numbers in parenthesis, near the corners of the outer rectangle, are mean-values corresponding to the age-gender they are located nearest. The four numbers located on the inner rectangle are t-values (which are significant at the .05 level or beyond, unless otherwise noted). Finally, the numbers at the center top and center bottom of the outer rectangle --labelled "difference" are the differences between the horizontal mean-values (i.e., females 55-64 versus males 55-64, and females 65+ versus males 65+). A comparison of these differences reveals the overall pattern of the relationship (i.e., leveling, double jeopardy, or parallelism).

Figure 57
A COMPARISON OF MEANS AND PAIRED t-TEST RESULTS FOR
THE SES OCCUPATION SCORES, FOR A COMBINATION OF THE
14 SPECIFIC SUBURBAN-URBAN METROPOLITAN MARKETS

A. Suburban Markets



B. Urban Markets

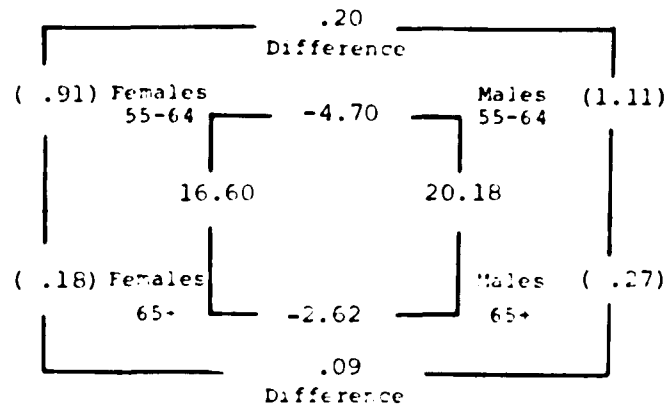


Note:

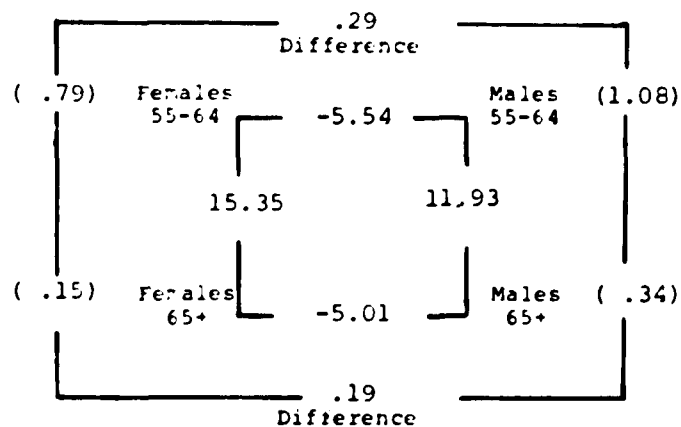
The four numbers in parenthesis, near the corners of the outer rectangle, are mean-values corresponding to the age-gender they are located nearest. The four numbers located on the inner rectangle are t-values (which are significant at the .05 level or beyond, unless otherwise noted). Finally, the numbers at the center top and center bottom of the outer rectangle --labelled "difference" are the differences between the horizontal mean-values (i.e., females 55-64 versus males 55-64, and females 65+ versus males 65+). A comparison of these differences reveals the overall pattern of the relationship (i.e., leveling, double jeopardy, or parallelism).

Figure 58
A COMPARISON OF MEANS AND PAIRED t-TEST RESULTS FOR
THE NUMBER OF EMPLOYED FAMILY MEMBERS, FOR A COMBINATION OF THE
14 SPECIFIC SUBURBAN-URBAN METROPOLITAN MARKETS

A. Suburban Markets



B. Urban Markets



Note:

The four numbers in parenthesis, near the corners of the outer rectangle, are mean-values corresponding to the age-gender they are located nearest. The four numbers located on the inner rectangle are t-values (which are significant at the .05 level or beyond, unless otherwise noted). Finally, the numbers at the center top and center bottom of the outer rectangle --labelled "difference" are the differences between the horizontal mean-values (i.e., females 55-64 versus males 55-64, and females 65+ versus males 65+). A comparison of these differences reveals the overall pattern of the relationship (i.e., leveling, double jeopardy, or parallelism).

SES Income Scores

The paired comparison t-tests offered a ready chance to test H_9 , the only hypothesized relationship that has not been explored yet. In terms of SES income scores, the hypothesis states:

H_9 : Suburban dwellers will score higher than urban dwellers on the SES income scale.

A comparison of suburban and urban dwellers, presented in Table 14a, reveals that this hypothesis should be accepted; that is, the significant and positive t-test indicates that the SES income scores of suburban dwellers are significantly greater than those of urban dwellers.

SES Occupation Scores

The paired comparison t-tests also provided an opportunity to test H_9 within the context of SES occupation scores. In terms of this surrogate of subjective well-being, the hypothesis states:

H_9 : Suburban dwellers will score higher than urban dwellers on the SES occupation scale.

The evidence in Table 14b indicates that this hypothesis should be rejected.

Table 14
SUMMARY OF SELECTED SUBURBAN-URBAN PAIRED t-TEST RESULTS

	<u>Suburban Means</u>	<u>Urban Means</u>	<u>T</u>	<u>Significance</u>
<u>A. SES Income Scores</u>				
Suburban versus Urban Markets	49.38 (4.92)	46.44 (3.84)	2.44	.03
<u>B. SES Occupation Scores</u>				
Suburban versus Urban Markets	34.56 (4.27)	32.80 (4.42)	1.60	N.S.
<u>C. Number of Employed Family Members</u>				
Suburban versus Urban Markets	.67 (.13)	.63 (.07)	1.31	N.S.

Note: Numbers in parenthesis are standard deviations.

Number of Employed Family Members

Finally, H_9 was tested within the context of the number of employed family members. In terms of this final surrogate of subjective well-being, the hypotheses states:

H_9 : Suburban dwellers will score higher than urban dwellers on the number of employed family member scale.

As was the case with SES occupation, the results presented in Table 14c show that this hypothesis should be rejected.

This concludes the presentation of the findings of this dissertation research. The next and final chapter reflects on these findings.

CHAPTER 6

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

As the title suggests, this final chapter is devoted to summarizing all dimensions of this dissertation research; discussing and drawing conclusions from the findings of the empirical aspects of the research, which were set out in the last chapter; reflecting on the marketing and public policy implications of the findings; and offering specific recommendations for future research.

Summary

This dissertation had as its main objective the exploration of leveling and double jeopardy, two competing social gerontological viewpoints on the relationship between age-gender categories and subjective well-being. As an outgrowth of this main objective, the four specific research goals were: (1) to test for leveling or double jeopardy within the domain of consumer behavior, (2) to determine if the outcome of leveling or double jeopardy is influenced by geographic-environmental factors, (3) to

identify a number of different correlates and proxies to service as a replacement for a traditional multi-item measure of subjective well-being, and (4) to consider the central issue of the degree of heterogeneity existing within the elderly market.

A detailed literature review focusing on appropriate consumer behavior and marketing topics (e.g., market segmentation, demographic segmentation and age segmentation) and age-gender issues drawn from the social gerontological literature (e.g., types of ages and theories of aging) provided some useful insights, but revealed little material that explicitly and substantially advanced either the leveling or the double jeopardy arguments.

However, within the scope of market segmentation, socioeconomic and demographic variables are frequently positioned as innate measures of inequality. For example, higher income is almost always a better state than lower income, or it is generally more desirable to be younger than older. Thus, common demographic variables function as barometers of status and inequality.

It is the issue of inequality and stigma that is at the heart of the leveling versus double jeopardy debate. Within this context, leveling suggests that as men age, their life situation deteriorates at a more rapid rate than is the case for aging women. Thus, for men

age is a leveler. In contrast, double jeopardy proposes that the greater inequalities that exist among women in society worsen with advancing age. Therefore, being a female and elderly has the additional effects of belonging to two stigmatized groups.

To empirically explore the merits of a leveling versus double jeopardy explanation to advancing age, and to test a series of relevant hypotheses, the availability of a suitable data base was secured. Specifically, the sample and subsamples examined in this dissertation research were drawn from a stratified simple random sample representative of the geographic area comprising the continental United States. The sample consisted of about 16,000 males and females who were at least 55 years of age. Furthermore, the sample was limited to those respondents who were either the head of household or the spouse. Members of minority groups were excluded because initial analysis revealed that cell sizes were frequently too small for the types of data analysis anticipated; and most important, it was the purpose of the present research to focus on age-gender inequalities, not ethnic inequalities.

Since one of the goals of this dissertation was to determine if various geographic subdivisions influenced the presence of leveling versus double jeopardy, the

large data base was especially attractive for the present research. More precisely, the data was "sliced" at three specific levels of geographic aggregation: (1) samples of the entire continental United States, (2) samples of overall suburban versus overall urban markets, and (3) samples of specific suburban-urban metropolitan markets. Such a three-level exploration was considered to be especially important since only very limited attention had been given to the impact of geographic factors in prior research.

To settle on a group of particular suburban-urban markets, an initial examination of the geographic divisions revealed that there were some fourteen markets for which "matched" data for suburban and urban areas were available. Unfortunately, the way the data was organized made it impossible to extract a matched set of rural geographic areas for comparison.

The selection of the variables to serve as the dependent variables for this dissertation research was derived from the prevailing social gerontological literature. The literature revealed that in most prior research, the central dependent variable has been some standard multi-item measure of subjective well-being, such as the 20-item Life Satisfaction Index A (LSIA) scale. Thus, a very real restriction of the present research was

the lack of any such standard measure of subjective well-being. However, a number of established correlates of subjective well-being were available as part of the data base; and a number of psychographic scales were deemed as having the potential to serve as proxies of subjective well-being.

It is possible to classify most potential correlates of subjective well-being into three broad categories: health factors, socioeconomic factors, and social-activity factors. Only the socioeconomic status (SES) and social-activity factors were considered as part of this dissertation research.

According to the literature review, socioeconomic factors (e.g., current family income, education level and occupational status) were the most popular and successful correlates of subjective well-being. The literature suggests that those elderly who have higher SES scores (e.g., more family income, higher occupational status, or more education) have higher subjective well-being scores than those with lower SES levels. Employment status, a related factor, has also generally been found to be positively associated with subjective well-being.

While receiving less attention, social-activity factors (e.g., social participation, group membership, and informal-interpersonal contacts) are also closely

related to standardized measures of subjective well-being. Again, positive relationships between social-activity and subjective well-being measures have uniformly been observed.

Matching the variables available from the data base with those promising correlates identified from the social gerontological literature suggested that five SES factors and nine of the social-activity factors were worthy of receiving some initial screening analysis. The SES factors included established components of social class status and a traditional employment status measure. Also, included was a perceived financial outlook item. In contrast, the social-activity factors featured a number of multi-item psychographic scales that were felt to capture aspects of social communications, and a number of telephone usage questions to ascertain the extent of social contact.

The independent variable consisted of the following six age-gender categories: (1) mature-adult (age 55-64) females, (2) mature-adult (age 55-64) males, (3) young-elderly (age 65-74) females, (4) young-elderly (age 65-74) males, (5) old-elderly (age 75+) females, and (6) old-elderly (age 75+) males.

Based upon an extensive review of the age-gender literature, the nine hypotheses listed in Table 15 were

developed. With the exception of H_9 , which dealt with geographic subdivisions, all of the other hypotheses dealt with one or more dimensions of the relationship between age and gender, and the surrogates of subjective well-being. The purpose was to test aspects of the leveling versus double jeopardy issue.

A variety of basic data analysis procedures were employed in conducting the empirical phase of this dissertation research. As part of some initial exploratory investigation, factor analysis, correlational analysis and causal modeling procedures were used to isolate those independent variables that served as surrogates of subjective well-being. Then, to test the nine hypotheses, the data were analyzed using dummy variable regression and paired comparison t-test procedures.

Summary of Research Findings

Since an important objective of this research was to develop consumer specific surrogates of subjective well-being from the available psychographic items, it was necessary to subject the four multi-item psychographic scales to "psychometric scrutiny." This included traditional factor analyses of the psychographic items, with the identification of four multi-item psychographic

scales that required exploration as to their reliability and validity.

In order to assess the reliability and validity of the psychographic scales, specific causal modeling procedures suggested by Bagozzi (1981) were followed. As an initial outcome of this analysis, one of the psychographic scales ("home decorating concerns") was dropped from further analysis because of a poor fit; and two of the five original items of another psychographic scale ("active long distance calling") were eliminated because they were shown to detract from the scale's overall reliability. More detailed causal analysis revealed that three of the four psychographic scales could be considered to be "satisfactory" in terms of their reliability and their convergent, concurrent and predictive validity.

Ultimately, dummy variable regression analysis was selected as the principal statistical procedure to test eight of the nine hypotheses that dealt with the various age-gender dimensions of the leveling versus double jeopardy controversy. This statistical procedure seemed particularly suitable because it provided both the main and interaction effects for the age-gender independent variables. Also, the availability of predicted values which were equal to mean values of each of the six age-gender categories was desirable from a plotting and

interpretation standpoint.

Since thirteen surrogates of subjective well-being (one psychographic scale was eliminated as an outcome of the causal modeling procedures) were deemed an analysis burden, preliminary dummy variable regression analysis, using a series of five random samples, were carried out to attempt to pinpoint surrogates that could be deleted before the hypotheses testing stage. The results of this initial analysis revealed that all but three of socioeconomic surrogates (i.e., SES income scores, SES occupation scores, and number of employed family members) should be eliminated because of either an insignificant overall F-test, or coefficients of determination that were so small that the regression equation seemed to lack any stability (across test subsamples).

The loss of so many of the surrogates of subjective well-being was at best a very mixed blessing. For while it reduced the amount of analysis, it also eliminated all eight of the social-activity factors, including all of the psychographic scales and all of the telephone usage variables. This was most unfortunate, since it was these social-activity factors that contained the strongest direct link to consumer behavior.

The primary dummy variables regression analysis was conducted at three levels. The most macro level of

analysis consisted of hypothesis testing at an overall or "national" level; that is, with a sample drawn without any specific geographic subdivisions. The second intermediate examination of the hypotheses was based on an overall suburban versus an overall urban subdivision. Finally, the third level of analysis narrowed down to fourteen metropolitan markets, for which distinct analysis was performed on each suburban-urban subdivision. Tables 15-17 summarize the findings across all three levels of analysis for each of the three socioeconomic surrogates. In addition, the results of the paired comparison t-test procedure are summarized with respect to H_9 and the overall observed pattern for each of the three surrogates.

Conclusions

It is the purpose of this section to reflect on the findings presented in Chapter 5, as they appear in summary form in Tables 15-17. To provide an organization for the discussion, a hypothesis-by-hypothesis focus is followed.

H_1 : With increasing age there will be a corresponding decline in scores on surrogates of subjective well-being.

For each of the three surrogates of subjective well-being, the results of the dummy variable regression

Table 15

SUMMARY OF ALL RESULTS WHEN SES INCOME SCORES ARE THE SURROGATES

	Overall Markets	Overall Suburban Markets	Overall Urban Markets	14 Suburban Markets	14 Urban Markets	t-Test Results	Total
H ₁ : With increasing age, there will be a corresponding decline in SES income scores.	A	A	A	11A	12A	NA	26A/31*
H ₂ : With advances in age from mature adults to young-elderly, there will be a sharper decline in SES income scores than the decline from young-elderly to old-elderly.	A	A	A	NA	NA	NA	3A/3
H ₃ : Females will score lower than males on the SES income scale.	A	A	A	14A	14A	NA	31A/31
H ₄ -H ₅ : Older-female (older-males) will score lower on the SES income scale than younger-females (younger-males).	A	A	A	14A	14A	NA	31A/31
H ₆ : Younger-females will score lower than younger-males on the SES income scale.	A	A	A	14A	14A	NA	31A/31
H ₇ : Older-females will score lower than older-males on the SES income scale.	A	A	A	11A	13A	NA	27A/31
H ₈ : Younger-females will score lower than older-males on the SES income scale.	R	R	R	7A	11A	NA	18A/31
H ₉ : Suburban dwellers will score higher than urban dwellers on the SES income scale.	NA	NA	NA	NA	NA	A	1A/1
OVERALL PATTERN	P	P	P	6L/5D/3P	4L/3D/7P	P	10L/8D/14P

KEY: A = Accepted, R = Rejected, L = Leveling, D = Double Jeopardy, P = Parallelism, NA = Not Applicable

*Note: As an example, this should be read: "26 out of the 31 tests of this hypothesis indicate acceptance."

Table 16
SUMMARY OF ALL RESULTS WHEN SES OCCUPATION SCORES ARE THE SURROGATES

	Overall Markets	Overall Suburban Markets	Overall Urban Markets	14 Suburban Markets	14 Urban Markets	t-test Results	TOTAL
H ₁ : With increasing age, there will be a corresponding decline in SES occupation scores.	A	A	A	14A	14A	NA	31A/31
H ₂ : With advances in age from mature adult to young-elderly, there will be a sharper decline in SES occupation scores than the decline from young-elderly to old-elderly.	A	A	A	NA	NA	NA	3A/3
H ₃ : Females will score lower than males on the SES occupation scale.	R	A	A	3A	10A	NA	20A/31
H ₄ -H ₅ : Older-females (older-males) will score lower on the SES occupation scale than younger-females (younger-males).	A	A	A	14A	14A	NA	31A/31
H ₆ : Younger-females will score lower than younger-males on the SES occupation scale.	R	A	A	13A	12A	NA	27A/31
H ₇ : Older-females will score lower than older-males on the SES occupation scale.	R	A	A	8A	12A	NA	22A/31
H ₈ : Younger-females will score lower than older-males on the SES occupation scale.	R	R	R	14A	14A	NA	31R/31
H ₉ : Suburban dwellers will score higher than urban dwellers on the SES occupation scale.	NA	NA	NA	NA	NA	R	1R/1
OVERALL PATTERN	L	P	P	9L/3D/2P	10L/3D/1P	L	21L/6D/5P

Key: A = Accepted, R = Rejected, L = Leveling, D = Double Jeopardy, P = Parallelism, NA = Not Applicable

Table 17
SUMMARY OF ALL RESULTS WHEN NUMBER OF EMPLOYED FAMILY MEMBERS ARE THE SURROGATES

	Overall Markets	Overall Suburban Markets	Overall Urban Markets	14 Suburban Markets	14 Urban Markets	t-Test Results	Total
H ₁ : With increasing age, there will be a corresponding decline in the number of employed family members.	A	A	A	14A	14A	NA	31A/31
H ₂ : With advances in age from mature adults to young-elderly, there will be a sharper decline in the number of employed family members than the decline from young-elderly to old-elderly.	A	A	A	NA	NA	NA	3A/3
H ₃ : Females will score lower than males on the number of employed family member scale.	*A	*A	*A	12A	14A	NA	29A/31
H ₄ -H ₅ : Older-females (older-males) will score lower than younger-females (younger-males) on the number of employed family member scale.	A	A	A	14A	14A	NA	31A/31
H ₆ : Younger-females will score lower than younger-males on the number of employed family member scale.	A	A	A	12A	14A	NA	29A/31
H ₇ : Older-females will score lower than older-males on the number of employed family member scale.	R	R	R	9A	11A	NA	20A/31
H ₈ : Younger-females will score lower than older-males on the number of employed family member scale.	R	R	R	14R	14R	NA	31R/31
H ₉ : Suburban dwellers will score higher than urban dwellers on the number of employed family member scale.	NA	NA	NA	NA	NA	L	1R/1
OVERALL PATTERN	L	L	L	12L/2D	12L/2D	L	28L/4D

Key: A = Accepted, R = Rejected, L = Leveling, D = Double Jeopardy, P = Parallelism, NA = Not Applicable

analysis (as summarized in Tables 15-17) suggest that this hypothesis should be accepted.

In actuality, the findings pertaining to this age-related hypothesis are not surprising. It is well established in both the social gerontological literature and the popular mass media that socioeconomic aspects of life satisfaction tend to deteriorate with advancing age. The present results confirm this pattern across socioeconomic factors, and for a variety of different geographic subdivisions.

H₂: With advances in age from mature adults to young-elderly, there will be a sharper decline in scores on surrogates of subjective well-being than the decline from young-elderly to old-elderly.

This hypothesis was tested at both the overall or "national" level, and the intermediate overall suburban versus overall urban level. These two levels were examined because there were sufficient data available to include all three age categories in the dummy variable regression analysis (i.e., age: 55-64, 65-74, and 75+). In all cases, the hypothesis was confirmed.

These results provided support for the social gerontological position that it is worthwhile to distinguish between the young-elderly (those 65-74 years of age) and the old-elderly (those 75+ years of age).

It also suggests that the elderly are not a homogeneous entity, and that age segmentation is likely to be a viable practice. For instance, changes in the pattern of the surrogates that occurred between age categories 65-74 and 75+ showed that in about one-half of the cases some form of convergence in the socioeconomic positions of males and females was occurring. This implies that it was indeed unfortunate that the young-elderly and old-elderly groups had to be combined into a single 65-plus group for analyzing the specific market level data. Most likely the combined 65-plus age group is masking some interesting age-related distinctions in the mean values of the surrogate dependent variables.

H₃: Females will score lower than males on the surrogates of subjective well-being.

The results in Tables 15-17 suggested that this gender-only hypothesis should be accepted. The evidence indicated that women tend to be more disadvantaged socio-economically than men at all of the age points considered in this dissertation research.

Recalling the literature reviewed on age-gender characteristics in Chapter 3, these findings are not surprising. However, looking at the differences across the socioeconomic surrogates does hint at some possible worthwhile distinctions. In particular, the

hypothesis is uniformly upheld for SES income. This suggests that women are especially worse-off when it comes to income-related scores. On the other hand, that the hypothesis is rejected in some eleven out of the thirty-one cases for SES occupation scores, supports that social gerontological literature which proposes that occupational status losses are especially destructive for older men. This interpretation is bolstered by the observation that in ten of the eleven cases where the hypothesis is rejected (with regard to SES occupation surrogate), leveling is the prevailing overall pattern. This research implies that shifting occupational status is seemingly more painful for men than for women.

An interesting exception is Boston. The SES occupation results reveal a reverse leveling for suburban Boston. That is, while women start off at age 55-64 having higher occupational status than comparably aged men, the position of women deteriorate more rapidly than is the case for their male age-counterparts.

H₄-H₅: Older-females (older-males) will score lower than younger-females (younger-males) on the surrogates of subjective well-being.

The findings across all three surrogates of subjective well-being, for all levels of analysis, revealed that these two companion hypotheses should be accepted.

In essence, the acceptance of these hypotheses suggested that within each sex-category, older individuals are less well-off on all three of surrogate indicators.

H₆: Younger-females will score lower than younger-males on the surrogates of subjective well-being.

The evidence at the various levels of analysis support the acceptance of this hypothesis for all three surrogates. The confirmation of the hypothesis indicates that within the younger-age category (i.e., those aged 55-64 and/or those aged 65-74), females tended to have lower surrogate scores than males. In a sense, these results bolster the argument that mature women are economically disadvantaged when contrasted with comparably aged males.

H₇: Older-females will score lower than older-males on the surrogates of subjective well-being.

This hypothesis parallels H₆ in terms of examining the difference in surrogate scores for males and females who are within the same older-age category (i.e., 75-plus). The results pertaining to this hypothesis, however, are somewhat less clear-cut; with only three-quarters of the cases supporting acceptance. The difference is, in part, explained by the greater convergence in surrogate scores occurring between the two sexes,

within this older age category.

H₈: Younger-females will score lower than older-males on the surrogates of subjective well-being.

It should be noted that it was the purpose of this hypothesis to explore the possibility of the "extreme" case of women in their best age position (younger women, 55-64 years of age) still being less well-off than men in their worse age position (older men, 75-plus). To the extent that this hypothesis would be confirmed, it would vividly document that women really hold lower socioeconomic status positions than men.

For SES occupation status and number of employed family members, the evidence is entirely for rejection of this hypothesis. On the other hand, for some 18 of the 31 cases where this hypothesis was tested within the realm of the SES income surrogate, the indication is that the hypothesis should be accepted.

Given the outcome of the first seven hypotheses, it is understandable that such a pattern is not confirmed for SES occupation scores and number of employed family members. Similarly, it would not have been surprising to find a few instances where this hypothesis would be acceptable with regard to SES income scores. However, it was unexpected to find so many cases where this hypothesis would be accepted. Specifically, such findings

indicate that women who are best-off in terms of age, are less well-off in terms of income, than men who are least well-off in terms of age. In some respects this condition suggests that being a female is an "economic hardship." Looking further into the data, the evidence shows that this situation occurs somewhat more often in a suburban rather than an urban environment.

H₉: Suburban dwellers will score higher than urban dwellers on the surrogates of subjective well-being.

This hypothesis was tested by means of the paired comparison t-test. The evidence revealed that it should be accepted when SES income is the subjective well-being surrogate. This conclusion seems to suggest that suburban-urban differences do exist with regard to income levels. However, suburban-urban differences were not found to exist with respect to the other two socioeconomic surrogates.

Leveling Versus Double Jeopardy

Beyond the nine hypotheses, there is the central issue of the relative merit of the leveling versus double jeopardy points-of-view for explaining the age-gender patterns of particular interest to social gerontologist.

The evidence presented in Chapter 5, and summarized in Tables 15-17, suggest that double jeopardy occurred

substantially less often than leveling. While double jeopardy's frequency of occurrence was greatest when it came to the SES income surrogate; for none of the three surrogates was it the dominant pattern. Indeed, based upon the results of the specific hypotheses just reviewed, which generally suggested that even younger-women may be worse off than older-men, it might have been expected that double jeopardy would have occurred more often with regard to SES income surrogate.

However, a third pattern, one not originally accounted for in the social gerontological literature, here labelled "parallelism," occurred most often, with respect to the SES income surrogate. Parallelism might be thought of as an age-gender pattern in which the position of men and women (in terms of a surrogate of subjective well-being), remains relatively fixed over time or between different age groups.

In looking deeper into this parallelism pattern, it becomes evident that in the majority of cases women are worse-off to begin, and their poor position, compared to men, does not substantially worsen or improve.

Focusing on the SES occupation scores and the number of employed family members, the evidence is more clear-cut in favor of leveling as the observed overall pattern. This observation seems to be in keeping with

the greater male involvement in the role loss or loss in occupational status, that accompanies retirement and its related dramatic shift in lifestyle.

Finally, it was decided to see if there were any potential geographic order with regard to the outcomes of leveling, double jeopardy and parallelism.

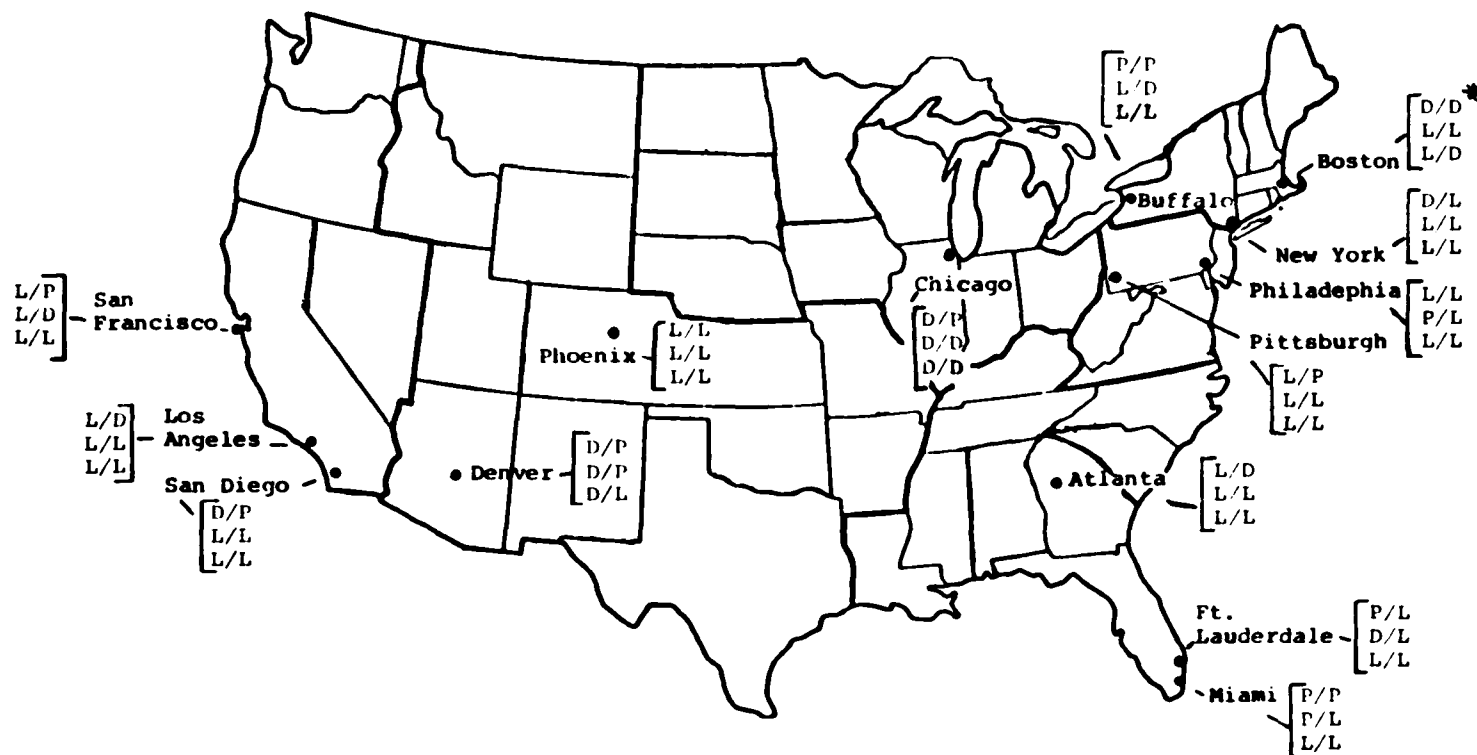
To determine if any such regularities prevailed, the overall patterns for each of three surrogates of subjective well-being were plotted on a map. The results as depicted in Figure 59 do reveal some interesting cases. For instance, Chicago is shown to be a very strong double jeopardy market, and so is suburban Denver. In contrast, Phoenix is completely a leveling community; and such areas as Atlanta, Los Angeles, New York, Philadelphia, and Pittsburgh also reveal a strong leveling position. The remaining market areas have somewhat more mixed patterns.

In any event, while there is some preliminary evidence that a particular market might have a predisposition toward one of the overall outcome patterns, there is not real support for any sectional or regional patterns.

Recommendations

This final section reflects on the marketing and public policy implications of the main findings of this dissertation research, and makes recommendation for areas

Figure 59
A SUMMARY OF GEOGRAPHIC CONCENTRATIONS OF OVERALL AGE-GENDER PATTEPNS



Key: L = Leveling, D = Double Jeopardy, and P = Parallelism.

*Note: For example, the results pertaining to Boston are to be read as follows: the top row (D/D = Double Jeopardy - suburban, Double Jeopardy - urban) presents the results relevant to SES income scores, the middle row (L/L = Leveling - suburban, Leveling - urban) presents the results relevant to SES occupation scores, and the bottom row (L/D = Leveling - suburban, Double Jeopardy - urban) presents the results pertaining to the number of employed family members. In a similar fashion, the results are set out for the remaining metropolitan markets.

of needed future research.

Marketing and Public Policy Implications

From both a marketing and public policy perspective, the research reconfirmed the importance of segmenting the elderly market; and thereby, provided some additional evidence that it is a mistake to consider and treat the elderly as one distinct market group. The evidence also supported the usefulness of segmenting the older portion of the population in terms of age-gender categories. In particular, the present research offered confirmation of the popular social gerontological position that is informative to subdivide the 65-plus population into at least two subgroups: those 65-74 and those 75-plus.

Similarly, the specific geographic-subdivisional results provided additional corroboration for the few existing social gerontological studies that suggest that geographic environmental factors may influence age-gender and subjective well-being patterns (e.g., Donnenwerth, et al, 1978; Felton, et al, 1981; Liange & Warfel, 1983).

In a sense, these implications are a warning to marketers and public policy makers to be sensitive to the possibility that older consumers are not a monolith market; and that their specific age, gender and suburban-

urban environments are several behavioral factors that influence the quality of their lives -- at least as reflected by a number of established socioeconomic surrogates of subjective well-being.

Suggestions for Future Research

The findings of this dissertation, as with all research, tend to raise more questions for future research than they themselves answer. The following are some possible avenues for additional research that builds on the present study:

1. At the most elementary level, it would be desirable to extend the present research by employing an established measure of subjective well-being as the principal dependent variable.

2. Future research might also attempt to take into consideration how the changing sex roles, especially as the influence the careers and life choices of females, may impact on the leveling-double jeopardy issue. For instance, as more-and-more women seek careers away from the home, will leveling and reverse leveling be more of an issue with respect to male-female differences, than leveling versus double jeopardy? While questions such as this one are difficult to explore, the rewards in terms of understanding how social-cultural trends impact on age-gender difference might be considerable.

3. Consistent with one of the goals of this dissertation (one that was not realized), it would be useful to further explore the development and testing of a consumer behavior-specific life satisfaction scale.

4. Similarly, future research should explore how age-gender factors tend to influence a wide variety of consumer behavior-relevant issues, e.g., attitude formation and change, levels of perceived risk, brand and patronage loyalty, and consumer-related informal communications patterns.

5. As a final potentially worthy area for future research, it would be useful to secure additional insights as to why a "Chicago" and a "Phoenix" have such very different overall age-gender patterns. Such information could, for example, be employed to identify commercial products and social programs that might be offered on a market-by-market basis, and in such a way as to make life satisfaction easier for specific age-gender market groups.

Appendix

RESULTS OF CAUSAL MODELING PROCEDURES

Table 1
CONVERGENT VALIDITY OF SUBSAMPLE 1

		ERROR	I	II
PSYCHO 1				
RELREGLR	.837(.130)	.301(.158)	.700	.782
FRREGLR	.766(.128)	.414(.143)	.587	
PSYCHO 2				
WORK	.563(.127)	.685(.136)	.317	
LONGTALK	.683(.125)	.563(.133)	.466	.656
LONGDIST	.625(.125)	.612(.133)	.391	
PSYCHO 3				
SMALLHOH	.502(.128)	.754(.131)	.252	
TELCONV	1.000(0)	.026(.158)	1.000	.743

		P ₁	P ₂	P ₃
0 =	P ₁	1.000		
	P ₂	.628	1.000	
	P ₃	.275	.485	1.000

$$\chi^2(12) = 16.6395 \quad P = .1637$$

Standard Errors in Parenthesis

Table 2
CONVERGENT VALIDITY OF SUBSAMPLE 2

		ERROR	I	II
PSYCHO 1				
RELREGLR	1.00 (0)	Ø (Ø)	1.00	.664
FRREGLR	.328 (.110)	.893 (.147)	.108	
PSYCHO 2				
WORK	.742 (.177)	.449 (.230)	.551	
LONGTALK	.475 (.149)	.775 (.160)	.226	.564
LONGDIST	.413 (.146)	.830 (.157)	.171	
PSYCHO 3				
SMALLHOM	.646 (.103)	.583 (.096)	.417	.823
TELCONV	1.000 (.082)	Ø (Ø)	1.000	

	P ₁	P ₂	P ₃
Ø = P ₁	1.00		
P ₂	.157	1.00	
P ₃	.169	.326	1.00

$$\chi^2(14) = 13.24 \quad P = .5071$$

Standard Errors in Parenthesis

Table 3
CONVERGENT VALIDITY OF SUBSAMPLE 3

		ERROR	I	II
PSYCHO 1				
RELREGLR	1.00 (0)	.093 (.160)	1.00	
FRREGLR	.841 (.145)	.348 (.130)	.707	.884
PSYCHO 2				
WORK	.583 (.136)	.662 (.147)	.339	
LONGTALK	.627 (.136)	.609 (.149)	.393	.620
LONGDIST	.571 (.135)	.676 (.147)	.326	
PSYCHO 3				
SMALLHOM	.628 (.148)	.606 (.166)	.394	
TELCONV	.839 (.169)	.295 (.242)	.704	.705

		P ₁	P ₂	P ₃
0 =	P ₁	1.00		
	P ₂	.284	1.00	
	P ₃	-.009	.555	1.00

$$\chi^2(12) = 10.8017 \quad P = .5460$$

Standard Errors in Parenthesis

Table 4
CONVERGENT VALIDITY OF SUBSAMPLE 4

		ERROR	I	II
PSYCHO 1				
RELREGLR	1.000 (0)	0 (0)	1.00	
FRREGLR	.462 (.103)	.787 (.129)	.213	.730
PSYCHO 2				
WORK	.617 (.154)	.620 (.172)	.381	
LONGTALK	.547 (.149)	.701 (.162)	.299	.523
LONGDIST	.383 (.146)	.853 (.158)	.146	
PSYCHO 3				
SMALLHOM	.650 (.103)	.578 (.095)	.423	
TELCONV	1.000 (.082)	0 (0)	1.000	.825

	P_1	P_2	P_3
$\emptyset = P_1$	1.000		
P_2	-.135	1.000	
P_3	-.185	.529	1.000

$$\chi^2(14) = 11.6779 \quad P = .6322$$

Standard Errors in Parenthesis

Table 5
CONVERGENT VALIDITY OF SUBSAMPLE 5

		ERROR	I	II
PSYCHO 1				
RELREGLR	1.00 (0)	0 (0)	1.00	.800
FRREGLR	.601 (.093)	.639 (.105)	.3612	
PSYCHO 2				
WORK	.531 (.138)	.718 (.149)	.281	
LONGTALK	.396 (.139)	.843 (.153)	.157	.5218
LONGDIST	.616 (.141)	.621 (.154)	.380	
PSYCHO 3				
SMALLHOM	.675 (.128)	.544 (.137)	.456	
TELCONV	.958 (.138)	.082 (.209)	.918	.809

	P ₁	P ₂	P ₃
0 = P ₁	1.000		
P ₂	.362	1.000	
P ₃	.265	.661	1.000

$$\chi^2(13) = 20.70 \quad P = .0791$$

Standard Errors in Parenthesis

Table 6

Crombach Alpha Reliability Coefficients for
Psychographic Surrogates of Subjective Well-Being

Subsample	Psycho #1	Psycho #2	Psycho #3	Psycho #4
One	.777	.681	.657	.167
Two	.493	.546	.783	.519
Three	.868	.626	.690	.317
Four	.618	.527	.787	.365
Five	.743	.507	.783	-.084
$\bar{x}$	.700	.577	.740	.296

Table 7

CONCURRENT VALIDITY OF SUBSAMPLE 1

EQ1 = RELREGLR, FRREGLR

EQ2 = WORK, LONGTALK, LONGDIST

EQ3 = SMALLHOM, TELCONV

EQ4 = SESINC, SESEDU, SESOCC

	EQ1	EQ2	EQ3	EQ4
$\emptyset$ = EQ1	1.00			
EQ2	.522(.110)	1.00		
EQ3	.265(.131)	.507(.149)	1.00	
EQ4	-.013(.121)	.286(.141)	.652(.112)	1.00

$$\chi^2(31) = 39.6656 \quad P = .1368$$

Table 8

CONCURRENT VALIDITY OF SUBSAMPLE 2

EQ1 = RELREGLR, FRREGLR

EQ2 = WORK, LONGTALK, LONGDIST

EQ3 = SMALLHOM, TELCONV

EQ4 = SESINC, SESEDU, SESOCC

	EQ1	EQ2	EQ3	EQ4
$\emptyset$ = EQ1	1.00			
EQ2	-.151(.146)	1.00		
EQ3	.131(.125)	.372(.153)	1.00	
EQ4	.009(.127)	.436(.153)	.438(.130)	1.00

$$\chi^2(31) = 30.1617 \quad P = .5090$$

Table 9

CONCURRENT VALIDITY OF SUBSAMPLE 3

EQ1 = RELREGLR, FRREGLR

EQ2 = WORK, LONGTALK, LONGDIST

EQ3 = SMALLHOM, TELCONV

EQ4 = SESINC, SESEDU, SESOCC

	EQ1	EQ2	EQ3	EQ4
$\emptyset$ = EQ1	1.00			
EQ2	.226(.141)	1.00		
EQ3	.015(.139)	.556(.148)	1.00	
EQ4	-.053(.139)	.634(.138)	.544(.133)	1.00

$$\chi^2(31) = 26.45 \quad P = .6990$$

Table 10

CONCURRENT VALIDITY OF SUBSAMPLE 4

EQ1 = RELREGLR, FRREGLR

EQ2 = WORK, LONGTALK, LONGDIST

EQ3 = SMALLHOM, TELCONV

EQ4 = SESINC, SESEDU, SESOCC

	EQ1	EQ2	EQ3	EQ4
$\emptyset$ = EQ1	1.00			
EQ2	-.132(.156)	1.00		
EQ3	-.185(.113)	.527(.150)	1.00	
EQ4	-.190(.128)	.417(.165)	.333(.128)	1.00

$$\chi^2(31) = 27.54 \quad P = .645$$

Table 11

CONCURRENT VALIDITY OF SUBSAMPLE 5

EQ1 = RELREGLR, FRREGLR

EQ2 = WORK, LONGTALK, LONGDIST

EQ3 = SMALLHOM, TELCONV

EQ4 = SESINC, SESEDU, SESOCC

	EQ1	EQ2	EQ3	EQ4
$\emptyset$ = EQ1	1.00			
EQ2	.360(.142)	1.00		
EQ3	.263(.115)	.670(.139)	1.00	
EQ4	.158(.128)	.774(.129)	.324(.130)	1.00

$$\chi^2(31) = 35.20 \quad P = .2759$$

Table 12

PREDICTIVE VALIDITY OF SUBSAMPLE 1

PSYCHO 1, PSYCHO 2, PSYCHO 3 Predicting Tolls & Usage

Parameter	
PSYCHO 1 (γ_1)	-.499(.155)
PSYCHO 2 (γ_2)	1.233(.190)
PSYCHO 3 (γ_3)	.021(.116)

$$\chi^2(25) = 45.46 \quad P=.0074$$

Standard Errors in Parenthesis

Table 13

PREDICTIVE VALIDITY OF SUBSAMPLE 2

PSYCHO 1, PSYCHO 2, PSYCHO 3 Predicting Tolls & Usage

Parameter	
PSYCHO 1 (γ_1)	.018(.102)
PSYCHO 2 (γ_2)	.958(.140)
PSYCHO 3 (γ_3)	.123(.107)

$$\chi^2(27) = 37.77 \quad P=.0815$$

Standard Errors in Parenthesis

Table 14

PREDICTIVE VALIDITY OF SUBSAMPLE 3

PSYCHO 1, PSYCHO 2, PSYCHO 3 Predicting Tolls & Usage

Parameter	
PSYCHO 1 (γ_1)	.038(.095)
PSYCHO 2 (γ_2)	1.055(.161)
PSYCHO 3 (γ_3)	-.119(.137)

$$\chi^2(26) = 30.20 \quad P=.2590$$

Standard Errors in Parenthesis

Table 15

PREDICTIVE VALIDITY OF SUBSAMPLE 4

PSYCHO 1, PSYCHO 2, PSYCHO 3 Predicting Tolls & Usage

Parameter	
PSYCHO 1 (δ_1)	-.054(.083)
PSYCHO 2 (δ_2)	.992(.139)
PSYCHO 3 (δ_3)	.015(.099)

$$\chi^2(27) = 28.67 \quad P=.3770$$

Standard Errors in Parenthesis

Table 16

PREDICTIVE VALIDITY OF SUBSAMPLE 5

PSYCHO 1, PSYCHO 2, PSYCHO 3 Predicting Tolls & Usage

Parameter	
PSYCHO 1 (β_1)	.068(.143)
PSYCHO 2 (β_2)	1.081(.262)
PSYCHO 3 (β_3)	-.180(.222)

$$x^2(26) = 49.81 \quad P=.0033$$

Standard Errors in Parenthesis

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