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JIMENEZ DE RAMIREZ, IRIS

EFFECT ON RESIDENTS' ATTITUDES OF SOCIAL, PHYSICAL, AND
ENVIRONMENTAL ASPECTS OF HIGH-RISE CONDOMINIUM LIVING IN
METROPOLITAN SAN JUAN

The University of North Carolina at Greensboro

PH.D.

1981

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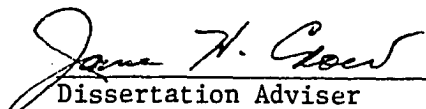
by

Iris Jiménez de Ramírez

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Dissertation Adviser

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This exploratory study analyzed residents' attitudes toward high-rise condominium living in relation to: (1) socioeconomic and housing-related characteristics, and (2) social, physical and environmental aspects of the condominium. The random sample consisted of 260 condominium owner-residents living in metropolitan San Juan, Puerto Rico, during November, 1980. Data collected from homemakers by scheduled interviews were analyzed using frequency counts, percentages, means, standard deviations, modes, Kendall's tau correlation coefficients, t-tests, analyses of variance, and multiple regression analyses.

Analyses of socioeconomic variables showed that slightly over half of the households were composed of married couples and about one third of singles living alone. A typical husband-wife household was composed of two or three members with a male reference person whose age ranged between 26 to 45 years and a spouse the same age or younger. The reference person and the spouse were well educated; 73 and 60 percent respectively had a college degree. Over half of the households had a yearly income of \$20,000 or more.

Housing-related characteristics revealed that the average length of apartment occupancy was five years. A large majority of the respondents considered the apartment permanent housing, and most had lived in urban areas in a single-family detached house during

childhood. Security of property, accessibility to community facilities and services, and ease of maintenance were the most common reasons for purchasing a condominium apartment. The three most-liked aspects of condominium living were, in order of importance, privacy, security, and accessibility; the least-liked aspects were parking facilities, poor management, and cost of the condominium unit. The average price of a condominium unit was \$45,937; the average monthly payment, \$346.

Analysis of the mean scores of the Likert-type attitude scale showed a moderately positive attitude toward high-rise condominium living. A majority of the respondents agreed or strongly agreed that high-rise condominiums economically use land, require less maintenance time, and are safer than other forms of dwelling, but did not believe that high-rise condominiums limit self-expression, are noisy, too crowded with people, or impersonal which is indicative of positivism toward condominiums.

Data regarding social aspects of condominium living indicated the following in relation to most of the respondents: low participation in condominium issues and in social interaction activities within the condominium, moderate satisfaction with management, unawareness of the condominium concepts that were included, awareness of abuse to building and facilities of the condominium, and high adjustment to condominium living.

Generally, physical design features of the condominium were rated between good and excellent for the apartment and between satisfactory and good for the building. The security of the condominium was classified as good or excellent; the neighborhood and

accessibility to community facilities and services were evaluated as very good.

The factors that were significantly associated with residents' attitude toward high-rise condominium living were length of apartment occupancy, intended apartment occupancy, preference of dwelling type, zone of location of the condominium, practice of rules of conduct, social interaction involvement, knowledge of condominium concepts, number of friends within the building, participation in condominium issues, satisfaction with management, features related to the apartment or building, accessibility, security, and neighborhood.

Forty percent of the variability in attitude toward high-rise condominiums was explained by the rating given to the apartment and building features, permanency of intended occupancy, and their satisfaction with management ($R^2 = .397$, $F=37.95$, $p<.01$).

The conclusions resulting from this study were that research on the micro-environment of individual condominiums is essential, that other variables which were not included in this study may also have influenced the residents' attitudes, and that not all high-rise housing has limitations and neither do all occupants manifest a negative attitude toward that form of dwelling.

APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of the Graduate School at the University of North Carolina at Greensboro.

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CHAPTER I
INTRODUCTION

The preference for a single-family detached house is common and is predominant in many countries of the world. This preference is especially marked in those countries where cultural expectations and traditions place high value on proximity to or possession of land. Nevertheless, many countries in the world, especially those with rapidly growing cities are experiencing a changing trend in home building, from single-family homes to an emphasis on multiple-family dwellings. People who live in cities are resisting this change, but still, many have moved into high-density housing. Their adjustment to that form of dwelling, in addition to their attitude toward their residence, is having an effect on nonresidents' attitudes toward that form of dwelling.

In the countries where space for housing construction is limited, government agencies are concerned with public opinion and resistance to multiple-unit dwellings. Researchers have begun investigating all facets of high-density housing, including studies of high-rise apartments. Attitudes toward high-rises have been found to be related to cultural patterns, life cycle stage, and socioeconomic position of the individual household.

A salient point of high-rise literature is that some kind of familiarity is associated with individual attitude. Familiarity with

high-rises can influence individual attitudes in a positive or negative way, depending on the specific means by which a person becomes familiar. For example, knowing someone who lives in a high-rise apartment can be a positive or negative influence on attitudes toward that form of housing.

The study of residents' attitudes toward high-rises and the factors associated with that attitude will expand the knowledge about that form of dwelling and suggest possible explanations for people's reluctance to accept this housing. What causes residents to choose a condominium? What physical, social, and environmental aspects are related to life in that form of housing? What are residents' attitudes toward that form of housing? Are the factors related to living in a high-rise associated with residents' attitudes? Is there any one factor which contributes most to residents' attitude variance?

This study was designed to answer these and other questions related to high-rise living. High-rise condominium living was used as it is the most predominant form of high-rise housing in Puerto Rico.

Statement of Problem

Consumer Housing Preferences Versus Space Limitations in Puerto Rico

The problem of housing in Puerto Rico is increased by the scarcity of space for construction, especially in metropolitan San Juan. The Planning Board of Puerto Rico has implemented a policy of

land use which gives preference to the construction of large-scale housing projects instead of single-family, detached dwellings. As a consequence, the housing industry has increased the number of high-rise condominiums under construction. The high-rise form of dwelling has been popular for designers, developers, and builders. This popularity, however, is not shared by the public. Puerto Ricans prefer to live in single-family, detached dwellings rather than multifamily, multistory buildings. In a study conducted in 1977, Roberto Ponce and Associates found that 81 percent of consumers interviewed preferred single-family, detached dwellings. Only 17 percent preferred apartments, and the residual 2 percent preferred other types of dwellings.

The negative attitude toward high-rise living is of great concern to housing experts and planners who know the importance of large-scale new housing construction in Puerto Rico. The population of the Island of Puerto Rico is increasing constantly, and subsequently, the need for housing is increasing. The Planning Board of Puerto Rico (1979) estimated the population of metropolitan San Juan at between 1.5 and 2.0 million inhabitants by 1985, and a need for 350,000 housing units in 1980. Of these units needed, over 75,000 will be new units. Due to the limited available space, the most expedient alternative appears to be the construction of high-rise buildings.

Condominiums in Puerto Rico

In Metropolitan San Juan, the most common form of high-rise housing is the residential condominium. High-rise condominium

construction increased in response to increased demand for housing created by population concentrations in urban centers during the 1950's. High-rise condominium industry in Puerto Rico has been growing continuously, even though on some occasions it has had short cycle declines. During 1974, Bussman reported that condominium units planned exceeded developments (single-family housing unit projects) planned. The proportion was 27,636 condominium units planned to 7,640 single-dwelling units planned. In the same year, the condominium construction industry accumulated the highest inventory of dwelling units for sale, a total of 7,971 condominium units available for sale, representing 65.6 percent of all housing units for sale in Puerto Rico for that year (Ponce and Associates, 1978). Since that time, the cumulative surplus of condominium units has decreased because permits and construction have also decreased. Still, there is a marked emphasis on high-rise condominium construction.

In 1958, the Horizontal Property Act was passed in Puerto Rico. It defined the ownership of real property under the condominium concept.¹ In 1976, it was amended and became Law Number 157, presently in effect.

The condominium form of ownership can be adapted to many kinds of housing such as high-rise, low-rise, garden complex, townhouse, duplex, triplex, quadruplex, and fiveplex. In Puerto Rico, almost all condominiums are high-rise in form.

¹For further explanation of condominium concept refer to section on definition of terms and review of literature.

Condominiums in Puerto Rico serve a specific socioeconomic group of the population, mostly the upper-middle class. The sale price of a typical new 1,100 square foot condominium unit in Metropolitan San Juan was \$51,832.00 in 1976. The average size of a new condominium unit was 985 square feet, so the average sale price of new condominium units was \$48,890.00 in 1976 (Planning Board, 1977).

The Home Builders' Association (1972) described the residents of condominiums in Puerto Rico as a relatively young population with a lower than average size household unit, in which a majority of the wives were employed outside the home.

Surveys of consumer preferences in metropolitan San Juan have found a ratio of nine to one in favor of single-family homes to condominiums (Planning Board, 1977). Nevertheless, multi-family starts have exceeded single-family starts in recent years. Bussman (1974) analyzed this situation as follows:

As will be seen in the (individual) Zone Sections the overwhelming majority of respondents favor the purchase of houses to the point where many have no second choice and refuse to consider garden apartment complexes, and for that matter, high-rise condominiums. In spite of this however, the fact is that because of Planning Board restrictions and the limited availability of land, urbanization will decline in the near future to unprecedented levels. For those reasons multi-family developments will account for nearly 95 percent of all new construction. Obviously, then, families who don't already own a house or can afford to purchase a resold house will of necessity have to overcome their negative feelings and purchase multi-family housing. (p. 28)

Many factors contribute to this unfavorable attitude toward high-rise condominiums. One of these is the direct or indirect propaganda that is spread from residents who have lived, or are

living, in high-rise condominiums and who are experiencing a series of problems related to life, environment, and to the physical structure of that form of housing. The Consumer Affairs Department is presently investigating numerous complaints from high-rise condominium residents. In response to the citizens' mandate, the Consumers Affairs Commission of the House of Representatives of the Puerto Rico Legislature is actually investigating the rise in costs of condominium maintenance. In spite of this action by the government, the people in Puerto Rico continue to have a negative attitude toward high-rise condominiums.

In summary, the government is encouraging the construction of large-scale housing units, both private and public. At this time, numerous high-rise, large-scale housing complexes have been built and are occupied. Educative agencies must develop programs to improve the quality of life of persons living in these complexes, including high-rise condominiums. It is important to study why Puerto Ricans dislike high-rise condominiums. It is necessary to identify aspects of high-rise condominium living that relate to residents' attitudes toward this form of housing. These studies on high-rise living are needed to give direction to education programs and policy. One of the goals of the Planning Board (1970:16) is focused toward this:

Para lograr esta distribución poblacional se estimulará la construcción de viviendas multifamiliares para familias de ingresos bajos y moderados en las áreas centrales. De parte del gobierno se harán esfuerzos por proveer aquellos incentivos que propicien desarrollos residenciales de altas densidades, o sea de aproximadamente 25 o más familias por acre, en aquellas áreas centrales a ser servidas por el

sistema rápido de transportación colectiva. Por consiguiente, los programas gubernamentales de vivienda estarían orientados a propagar entre familias un mejor conocimiento de las facilidades y ventajas que ofrecen las estructuras residenciales multifamiliares.

[To achieve this population distribution the construction of multi-family housing will be stimulated for low and moderate income families in the central areas. Efforts from the government will be made to provide the incentives necessary for the development of high density housing, approximately 25 or more families per acre of land, in those central areas that will be served by the rapid mass transportation system. So, the government housing programs will be oriented to propagate among the families a better knowledge and understanding of the facilities and advantages of the multiple-family structures.]

Rationale For Study

Human ecologists have been concerned about the effect of the environment on human attitude and behavior. An ecological approach explains an individual's behavior or attitude in terms of the occurrence of an event or the presence of a characteristic in the environment.

The rationale of this study is based on an ecological approach in the sense that it will consider environmental factors as predictors of attitude toward high-rise condominium living. The factors to be considered are physical elements, behavioral and other social patterns in the residential environment, environmental features, housing-related and socioeconomic characteristics of the residents.

Limited acceptance of high-rise living is increased by the effect of negative physical characteristics common to this form of housing. For some time, the physical component of the environment has been studied by many authors (Sommer, 1969; Mitchell, 1971;

J. and C. Greenberg, 1977 ; Aiello, 1977). Shifts from this physical determinism approach have been observed recently. Researchers are including variables other than physical aspects in their studies of designs (Becker, 1974; Michelson, 1977; Francescatto, 1979). Becker (1974:11) said that physical environment is only one of several other factors which may influence the behavior and attitude of the individual in any physical setting.

One assumption of the present study is that physical limitations of high-rise condominiums are only one of several factors that affect living within the environment, and not necessarily the most important. There are social and behavioral factors related to life in high-rise complexes that significantly contribute to the variance of the residents' attitudes toward their environment.

This assumption is based on the conceptual frameworks used by Becker (1974:11): "The physical environment itself is an important factor, but only one of several"; and by Michelson (1977):41): ". . . the truth is that social surroundings are more important in determining what happens to people than are the physical surroundings."

Purpose of the Study

The primary purpose of this study was to analyze factors associated with high-rise condominium living in metropolitan San Juan, Puerto Rico, and their contribution in explaining residents' attitudes toward that form of dwelling.

The specific objectives of the study were:

1. To identify and describe specific socioeconomic and housing-related characteristics of the residents, namely:
 - a. Socioeconomic: household composition, income, education, and occupation of reference person and spouse (if any).
 - b. Housing related: length of apartment occupancy, intended apartment occupancy, place and type of previous residence, preference of type of housing, reasons for purchasing a high-rise condominium, the most liked aspects and least liked aspects of high-rise condominium living, cost of purchase of condominium unit, and monthly payment.
2. To determine residents' attitudes toward high-rise condominium living.
3. To identify and analyze the following elements of high-rise condominium living:
 - a. Social aspects
 1. Participation in condominium issues
 - o Desire to be more involved
 2. Social interaction patterns
 - o Friends and people known in condominium
 3. Satisfaction with management
 4. Rights and responsibilities
 - o Knowledge of condominium concepts
 - o Reading of documents before signing a contract

5. Rules of conduct: use of facilities
 - o Acceptance of rules
6. Adjustment
 - o Information prior to moving
- B. Physical aspects
 1. Design features--common areas and facilities
 2. Design features--apartment space
- C. Environmental aspects
 1. Security
 2. Accessibility
 3. Neighborhood
4. To examine the individual and collective contribution of the following independent variables on the variance of the criterion variable (residents' attitudes toward high-rise condominium):
 - A. Socioeconomic and housing-related characteristics of residents
 - B. Social aspects of high-rise condominium living
 - C. Physical aspects of high-rise condominium living
 - D. Environmental aspects of high-rise condominium living
5. To make recommendations and suggest possible educational needs for housing consumers and residents of high-rise condominiums based on findings.

Definition of Terms

Condominium - a form of ownership of a dwelling unit, generally located in a multi-family development, consisting of an undivided interest in common areas and individual interest in unit.

Condominium unit - the part of a condominium complex that is privately owned and independently and exclusively used by the household.

High-rise condominium - housing project that is formed in a vertical arrangement of condominium units including at least seven stories.

Apartment or condominium apartment - a condominium unit within the high-rise condominium complex.

Attitude toward high-rise condominium living - the feelings, opinions, and perceptions of residents toward high-rise condominium living.

Attitude scale toward high-rise condominium living - a Likert-type scale used to measure residents' specific mental disposition toward high-rise condominium living.

Negative/unfavorable attitude - the specific mental disposition of a resident against high-rise condominium living.

Postive/favorable attitude - the specific mental disposition of a resident in favor of high-rise condominium living.

Social aspects of high-rise condominium living - those factors related to personal behavior and interrelations among neighbors.

Social aspects considered in the study were:

1. Participation in condominium issues - the extent to which resident participates and shares in activities that concern condominium issues and problems.
2. Social-interaction patterns - the extent to which the residents share with each other in activities other than condominium problems, such as friendly chats, social activities, and daily life activities.
3. Satisfaction with management - the way the residents feel about the management.
4. Awareness of rights and responsibilities of residents in a high-rise condominium - the extent to which residents have specific information concerning the condominium housing concept and their conscientiousness with regard to duties and privileges in that form of housing.
5. Residents' knowledge of conduct rules in a high-rise condominium - the extent to which the residents know how to behave, practice rules of conduct, and use common areas in a high-rise condominium.
6. Adjustment - degree of residents' adjustment to high-rise condominium living.

Physical aspects of high-rise condominium living - those factors pertaining to the physical structure or properties inherent to the building construction.

Environmental aspects of high-rise condominium living - the external environment or ecological setting that surrounds the resident of the high-rise condominium. Environmental aspects considered in the study were:

1. Security - the degree of safety of building and protection from strangers that was felt by the residents inside the apartment and in the condominium complex.
2. Accessibility - the degree of satisfaction expressed by the resident in terms of the proximity of communal services such as schools, shopping centers, medical centers, public transportation, recreation-entertainment, grocery stores, churches, and work centers.
3. Neighborhood - the three-or-four-street setting that surrounds the condominium and can be seen from the apartment.

Metropolitan San Juan - the area included in the municipalities of San Juan, Bayamón, Carolina, Cataño, Guaynabo, Trujillo Alto, Loíza, and Tao Baja (U.S. Census definition) (Figure 1).

Assumptions

1. The adult female or wife is assumed to be a representative spokesperson for the household's attitudes and belief.
2. The high-rise condominium residents' attitudes toward that form of dwelling has a direct or indirect effect on non-residents' attitudes.
3. The analysis of physical, social, and environmental factors of high-rise condominium living is essential for use in improvement of the quality of life of the residents.
4. Physical limitations of high-rise condominium living are only one of several factors that affect the environment.

CHAPTER II
REVIEW OF THE LITERATURE

This chapter is a review of literature on three themes. A discussion of attitude theory and measurement is presented first, as a basis for understanding attitudes toward housing. Secondly, research conducted on the topic of high-rise housing focusing on consumer acceptance, satisfaction, and aspects related to life in high-rise dwellings is presented. For the third theme, selected condominium research is summarized, including a brief history of condominiums in Puerto Rico and a discussion of the Horizontal Property Act.

Attitudes

Definition

The concept of attitudes has been studied by social psychologists for many years. It is "the most distinctive and indispensable concept in contemporary American social psychology" (Allport, 1967: 3). The term "attitude" has been defined variously, definitions ranging from those operationalized for a specific study to theoretical concepts regarding the composition of attitudes.

The origin of the word attitude is Latin; its translation has two meanings:

Derived from the Latin aptus, it has on the one hand the significance of "fitness" or "adaptedness" and like its by-form aptitude connotes a subjective or mental state of preparation for action. (Allport, 1967:3)

One of the earliest psychologists who mentioned the term was Herbert Spencer (1862:1):

Arriving at correct judgements on disputed questions, much depends on the attitude of mind we preserve while listening to, or taking part in, the controversy: and for the preservation of a right attitude it is needful that we should learn how true, and yet how untrue are average human beliefs.

The following various traditional definitions of attitude have served as the base for most definitions found in the literature.

. . . readiness for attention or action of a definite sort. (Baldwin, 1905:6)

. . . a tendency to act toward or against something in the environment which becomes thereby a positive or negative value. (Bogardus , 1931:62)

. . . dispositions toward overt action. (Likert,1967 :9)

. . . mental postures, guides for conduct to which each new experience is referred before a response is made. (Morgan, 1934:47)

. . . a relatively enduring system of affective, evaluative reactions based upon and reflecting the evaluative concepts or beliefs which have been learned about the characteristics of a social object or class of social objects. (Shaw, 1967:10)

. . .the affect for or against a psychological object. . . . the sum total of man's inclinations and feelings, prejudice or bias, preconceived notions, ideas, fears, threats, and corrections about any specified topic. (Thurstone, 1967:22)

. . . the evaluative dimension of a concept, where the term "concept" refers to any discriminable aspect of an individual's world, verbalizable or not. (Anderson and Fishbein, 1967:437)

. . . a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related. (Allport, 1967:8)

. . . a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object. (Fishbein and Ajzen, 1975:5)

Contemporary environmental psychologists are concerned with the role of attitudes in their study of the relationship between human behavior and physical environment. Their definition of attitudes follows the same trend as traditional psychologists, but for them, the effect of experience is accentuated.

. . . a tendency to evaluate an object or an idea in a positive or negative way. That is, attitudes involve affect or emotion--feelings of pleasantness or unpleasantness, like or dislike, for something Experience has much to do with how we cognitively organize our evaluations of and beliefs about the environment as well as how we change our behaviors toward it. (Bell, Jeffrey, and Loomis, 1978:38)

In summary, traditional and contemporary definitions of attitudes have one common characteristic: a mental predisposition to respond to situations, and social and physical objects in the environment in a positive or negative way.

Most definitions of attitude include the relationship between attitude and behavior. In other words, the concept encompasses an individual's beliefs about the object, his feelings toward the object, and his behavioral intentions or his action tendencies with respect to the object. This concept of or orientation to attitude is known as a multicomponent view of attitudes. Three components are considered to form an attitude--cognitive, affective, and behavioral. Triandis (1971:8) conceived these components to be interrelated:

. . . (a) a cognitive component--described by the person's categorizations, and the relationship between his categories;

(b) an affective component--described by the way the person evaluates the objects which are included in a particular category; and,

(c) a behavioral component--which reflects the behavioral intentions of a person toward the objects included in a particular category.

Attitude Formation

Attitude formation is often studied by social psychologists. Most agree that learning plays an important role in attitude formation. Theorists affirm that the principles of classical conditioning, instrumental conditioning, and social learning may be used for explaining the attainment of an attitude. The three will be discussed.

The classical conditioning theory is derived from the Pavlovian theory, also known as respondent, or Type I conditioning. The general principle of the classical conditioning theory of attitudes is the automatic response to a given stimulus (object). For example, consider a student who attends a school that is located beside a fertilizer plant that gives off pungent and unpleasant odors. It is expected that he would not like the odors from the plant that will be present in the school. He will associate school with unpleasant odors, and most likely develop a negative attitude or dislike for school, the curriculum, faculty, and all aspects related to the school environment (Bell et al., 1978).

As the example above shows, favorable and unfavorable attitudes are considered to be associated with liked and disliked stimuli. If

the classical conditioning theory is applied to the formation of an attitude toward high-rise condominium living, the following explanations could be used. Whether a person likes or dislikes high-rise condominium living depends, to a large extent, on the positive or negative experiences that person associates with such living. Positive or negative attitudes toward high-rise condominium living can be a response to or associated with pleasant or unpleasant experiences with that form of housing.

The instrumental conditioning theory of attitude formation is also known as Skinnerian, or Type II Conditioning. It consists of the formation of an attitude based on the consequences of reward or punishment response reaction to a particular attitude. Lott and Lott (1968:68) described it thus, "a person who experiences reinforcement or reward for some behavior will react to the reward, i.e., will perform some observable or covert goal response." In other words, the development of a positive or negative attitude toward something will depend on the negative or positive consequences of holding that attitude. Bell et al. (1978) mentioned that the instrumental conditioning of an attitude could be applied to explaining attitudes toward environment.

The social learning of attitudes refers to the acquisition of an attitude based on the influence of another person who is holding that attitude. Bell et al. (1978:42) explained the social learning theory as follows:

. . . if we observe another person (model) behave in a certain way we may imitate that behavior. If we see the model rewarded for the behavior, or if we as observers

are rewarded for imitating, we are more likely to reproduce the behavior. If, on the other hand, we see the model punished or are punished ourselves, we are less likely to imitate.

The social learning theory could be used for explaining the development of negative or positive attitudes of people toward high-rise condominium living. According to the principle of social learning theory, residents of high-rise condominiums are used as "models" for others in developing their own attitudes toward that form of housing.

These three processes of attitude formation might be observed in a person independently or simultaneously. Attitude formation is also explained by approaches other than the learning theories mentioned above. Some of these theories (relations of beliefs to attitudes) are: the balance theories (factors that influence causal attributions of an event to a person), the congruity principle (assertions that link two objects of judgement), the theory of cognitive dissonance (relations between two cognitive elements), and theories of attribution (attribution of a given action or event to some person or object). Most of these theories deal with both beliefs and attitudes. On the other hand, learning theories deal mostly with attitudes (Fishbein and Ajzen, 1975).

Measurement of Attitudes

In the literature on attitudes, a diversity of procedures are described to measure this concept. Differences are generally in terms of the operational definition used, or upon the investigator's theoretical assumptions about the nature of the attitude he is trying

to measure. Fishbein and Ajzen (1975:2) mentioned more than 500 different procedures that have been developed to measure attitudes.

There is considerable variety in the range of operational definitions which include, among others:

standard attitude scales (e.g., Likert, Guttman, Thurstone, and semantic differential scales); other indices across various verbal items; single statements of feelings, opinions, knowledge, or intentions; observations of one or more overt behaviors; and physiological measures.

It has been said that the empirical studies of measurement of attitudes have been more successful than definitions of these concepts (Allport, 1967).

The major procedures recognized for attitude measurement are the standardized methods derived by Emory S. Bogardus, Louis L. Thurstone, Louis Guttman, Charles E. Osgood, and Rensis Likert. Their techniques have served as a basis for later psychologists and sociologists who have been interested in measurement of human properties. Gordon (1977:31) postulated that the development of unidimensional scaling in the social sciences has been affected directly by four of these techniques.

If we were to list the persons who over the past 50 years have contributed to the development of measurement of human characteristics particularly relevant to the areas of sociology and social psychology in the United States, the following four names will have to appear: Emory S. Bogardus, Louis L. Thurstone, Rensis Likert, and Louis Guttman.

A brief explanation of four of these methods will follow. A more in-depth description of the Likert procedure will be given, since it was the technique used in the present study.

Bogardus (1925), a sociologist interested in measurement of social distance (the prejudice of a person toward social, racial, or religious groups), derived an ordinal scale to measure the behavioral intentions of an individual toward an attitude object (people from various nationalities). The procedure consisted of asking the individual whether he would have members of various nationalities as spouse, as close friends, as next-door neighbors, as fellow workers, as citizens of his country, as visitors to his country, or if he would exclude them from his country. The intentions were arranged in rank order of social distance between the observed subject and the various nationalities. Bogardus' procedure was designed to rank the different ethnic and racial groups according to their relative social distance from a sample of respondents, rather than to measure social attitude. Nevertheless, it has been adapted for use in the measurement of attitudes and other human characteristics in that the degree of social distance of an individual toward a nationality could be used in terms of an attitude toward that nationality. For example, the less social distance, the more favorable the attitude toward that nationality.

Thurstone (1967), a psychologist at the University of Chicago, has derived at least three methods of attitude scaling: the paired comparison, the equal-appearing scale, and the successive interval scale. He was concerned with the selection of items for attitude scales and the allocation of scale values to those items. The main principles of Thurstone's technique came from the law of comparative judgement. That is, a number of pooled items concerning beliefs and

intentions are given to a group of subjects who will judge the relative favorability of those attitude statements. Computations are made to determine on what items the judges agree in ranking. Those items are assigned a "scale value" and constitute the final scale that will be given to the subjects whose attitudes are to be assessed. The final attitude scale will be formed of unambiguous, relevant items which will range on a value scale from "extremely favorable" to "extremely unfavorable."

Guttman (1967) developed a method called scalogram analysis. In this scale, items on the measuring instrument are arranged in an order of favorableness or unfavorableness toward an object. If an individual responds positively to an item, he will respond positively to the rest of the items which have a lower rank. The items that can be arranged in a rank order are called scalable. Chisman (1976:41) explained Guttman's scalogram as follows:

Guttman believes the way to determine whether an individual has an attitude is to determine whether he will endorse all opinions that are favorable to an object up to a certain point; and the way to determine what attitude he has is to determine the most favorable opinion he will endorse.

Osgood (Fishbein, 1967) developed a measure technique called semantic differential. His main purpose was to measure meaning. In his theory of behavior, he maintained that the individual responds to an object according to the object's meaning for him. His procedure consists of stating bipolar adjective scales to describe an object or a concept. The individual whose attitude is to be measured, rates the concept on a scale of seven points for each pair of adjectives.

The respondent will indicate the direction and intensity of his feelings toward the object based on words which describe that object. A final score is obtained by assigning integral weights to each position on the rating scale.

Likert (1932-33; 1967) devised the technique of summated ratings for attitude scale construction. This scale is one of the most popular procedures in social research as reported by professional literature, because it is one of the least tedious techniques (Nachmias and Nachmias, 1976).

The evolution of Likert's summated ratings (1967:90-91) can be summarized in five steps. First, a collection of items that indicate beliefs or intentions toward the object is developed from literature, newspapers, small surveys, and consultations with specialists or individuals knowledgeable with the concept to be measured. These statements should: express desired behavior, not facts; be stated as simply as possible; be worded to elicit differences in ranking on a continuum; be about equally divided to correspond to the two ends of the continuum; should be mutually exclusive as to attitude included; and should avoid neutral attitudes. These statements are usually provided with a five-point continuum which ranges through "strongly agree," "agree," "undecided," "disagree," to "strongly disagree." For scoring the results, a weight of 1, 2, 3, 4, 5, or 5, 4, 3, 2, 1 is given to each item according to the favorableness or unfavorableness of the item. The final score will represent the individual's attitude toward the concept or object. The higher the score, the more favorable the attitude. Next, the scale is

administered to a sample drawn from the target population. The respondents are asked to check their response to all items according to the intensity of their feelings. A statistical method is then used to select the items which correspond to one relevant dimension. These items will constitute the final scale. The selection may be done following the method of "internal consistency" or "item analysis." The first method involves the correlation of each item value with the mean value of all items for that person. The final selection of items will be based on those items which correlate highest. An "item analysis" involves the measurement of each item in terms of its ability to separate the extremely favorable or high scores from the extremely unfavorable or low scores. Factor analysis is also commonly used.

High-Rise Living

The review of literature on high-rise living will be classified into three broad groups: (1) studies related to acceptance and attitudes toward high-rise living; (2) studies on high-rise residents' satisfaction; and (3) aspects related to high-rise apartment living.

Research conducted on high-rise housing included a diversity of settings and populations. Variance in study designs, findings, and conclusions are associated with differences in sample characteristics. Four categories studied may be classified according to type of high-rise population: low and moderate income public high-rise rental apartments ; moderate and middle income high-rise apartments which are cooperatives or federally subsidized condominiums; middle and upper-middle

income high-rise rental apartments ; and middle and upper-middle income high-rise apartments which are private condominiums. Although a few studies have been conducted with middle and upper-middle class families, most have focused on high-rise living among low and moderate income populations. Research evidence has shown that acceptance, attitudes, satisfaction, and problems with apartment living are different for each socioeconomic population under study. These differences should be taken into account when analyzing high-rise living research literature.

Acceptance and Attitudes Toward High-Rise Living

Studies on preferences of housing have consistently shown that single-family detached houses are preferred. Other forms of dwellings such as high-rise apartments, townhouses, and garden apartments are accepted to a lesser extent. The preference for a specific form of dwelling is associated with an individual's cultural heritage, family life cycle, socioeconomic status, and familiarity with the housing form.

Cultural differences affect acceptance of a specific form of dwelling. Canter and Thorne (1972) found the attitude toward housing design to be associated with cultural background. When exposed to sixteen illustrations of types of houses, differences in response to similar house designs were shown by the different cultural groups.

A Canadian study, using a sample of middle and upper-middle income families, residents in single-family detached houses and high-rise rental and condominium apartments in Toronto, showed that the

most preferred type of dwelling was the detached house (Homenuck, 1974). Regardless of the type of dwelling and life cycle stage, the responses were indicative of nonacceptance of high-rise apartments as an ideal form of housing. Michelson (1977), in Toronto, using a population of mixed socioeconomic status and occupants of different forms of housing, found the same attitude toward high-rises. Both the housing aspirations and attitudes of interviewees showed a resistance to high-rise living while supporting the single-family house in the suburbs as a goal. Homenuck (1973) considered the preference for a detached house as a cultural tradition for Canadians.

After studying socialization patterns of high-rise residents in cities located in Germany and Italy, Williamson (1978:130) concluded that, "the data suggest that a sizable minority of the urban population will find the high rise an acceptable if marginal option as their habitat." Williamson (1978:123) reviewed several research studies carried out in different countries of Europe and found that acceptance of high-rise housing varied in different cultural settings. A study of four German cities showed that:

less than 20 percent categorically opposed high-rise living, but most of the interviewees found something--wind, noise of neighbors, feeling of isolation--to criticize.

Opposition to high-rise was also shown in Scandinavia and Britain, where the ideal house was a detached, double, or, in the last choice, a small, multiple complex. He concluded that a reason given for moving to a high-rise was the lack of another choice.

In the United States, several studies have found similar attitudes toward high-rise living as those found in Canada and Europe. In 1968, Michelson found that the majority of respondents (85 percent) in a survey conducted in the United States preferred living in a detached house. Two-thirds of those who lived in multifamily dwellings preferred the single-family house. He also found that the resistance to living in a high-rise was not based on tenure, or form of ownership. When the interviewees were asked whether they preferred a high-rise condominium or a rented house, only 2 percent preferred renting the house to the ownership of a high-rise condominium. This finding is evidence that desire for ownership dominates the resistance of living in a high-rise.

Cooper-Marcus (1974:19) explained desires for a detached house as a universal trend expressed by Americans in search of a private and unique form of independent dwelling. She stated:

The high-rise apartment building is rejected by most Americans as a family home because, I would suggest, it gives one no territory on the ground, violates the archaic image of what a house is, and is perceived unconsciously as a threat to one's self-image as a separate and unique personality. The house form in which people are being asked to live is not a symbol-of-self, but the symbol of a stereotyped, anonymous filing-cabinet collection of selves, which people fear they are becoming.

Bubar (1968) studied the preferences of residents in a middle and upper-middle income high-rise apartment complex in Los Angeles. She found that the majority of the residents expressed a positive attitude toward high-rise living. The factors considered most favorable by residents were design and prestige.

Haber (1977) conducted research to determine the attitudes of a group of college students at the University of Maryland toward tall buildings, and found that a majority of students did not recommend tall buildings for housing. Over 70 percent of the sample answered that tall buildings should be used exclusively for offices. The least desirable aspects of tall buildings were waiting for elevators, missing greenery, and fear of fire. The characteristics students liked most about tall buildings were the view, the enjoyment of seeing far, and economical use of space.

Consumer acceptance of high-rise living has been associated with several factors. Becker (1977) mentioned the "image" consideration as a factor that contributes to the acceptance of a form of housing. He mentioned the social prestige or status symbol that high-rise living represents for some people. Personal factors, such as age and familiarity with the structure, have been analyzed and found to be related to a positive attitude toward high-rise living. Egolf and Herrenkohl (1977) found a positive relationship between a respondent's familiarity with a house's design and his acceptance of that residence as a place to live. In other words, they found that respondents tend to accept the housing designs with which they were familiar.

The studies conducted in Puerto Rico have findings similar to those conducted in Canada, Europe, and the United States. Puerto Ricans have expressed a marked resistance to high-rise living, and a strong endorsement of a single-family detached house as the ideal form of housing. Differences have also been found according to socioeconomic status and other variables.

In Puerto Rico, three studies have been located regarding the acceptance of high-rise housing. They were published by Homebuilders Association of Puerto Rico (1972), Bussman Construction (1974), and Roberto Ponce and Associates (1978). All of them analyzed the preferences of housing consumers in Puerto Rico, and the factors contributing to the purchase of a house. Their approach was basically merchantilist. All of them affirmed the fact that there is resistance to high-rise housing in Puerto Rico. All research was conducted in Metropolitan San Juan. Different factors were found to be related to the residents' or consumers' opinions about high-rise living.

Ponce and Associates (1978) mentioned the following as reasons for the consumer disliking high-rises: the sense of property and land possession is limited (a cultural pattern that gives Puerto Ricans security); the impression of limitation of expansion; a loss of contact with nature—living in seclusion; and limitation in terms of physical movements of children's activities. The Homebuilders Association of Puerto Rico (1972) found this additional negative image of high-rises: units are small; maintenance is inadequate; when you buy a condominium, you own nothing; and lack of recreational areas. Bussman Construction (1974) found the preference for a single-family detached house so marked that the interviewees did not indicate a second housing alternative. The following disadvantages of condominiums were cited: limited recreational green areas, impersonal communal ownership, elevator problems, and high-density crowding.

Homenuck and Schindeler (1974) summarized four factors that may explain the tendency to reject multiple-unit dwellings, including high-rises. In the first place, there is resistance from those who view the growth of cities (taller buildings being a manifestation of crowded and congested facilities) as a threat to an agrarian, rural society. Secondly, there is a strong influence of the English axiom, "the Englishman's home is his castle," on the perception people may have of a house. A castle symbolizes a single-family home on a private lot. Homenuck and Schindeler (1974:51) added:

Wedded to this belief is another strongly held cultural value--that land and property are private goods, and that a man's overall worth as an individual can be measured by how much of each he possesses.

A third factor mentioned by Homenuck and Schindeler (1974) is a cultural value related to the rearing of children. In North America, the middle-class parents believe in the free expression of children, socialization, and creative play. High-rise living deprives children of some of these activities. Fourth, people tend to relate high-density housing with apartment complexes for low-income families. The image of those high-density buildings for low-income families is one of a high incidence of social problems and physical deterioration. Negative attitudes are formed based on experience with some high-density complexes; as a consequence, people "resist them as a threat to the most valued features of the urban environment" (Homenuck and Schindeler, 1974:53).

The various studies summarized above reported a common conclusion: that high-rise housing is not accepted by a diversified

population. Cultural, socioeconomic, and other variables were found to be associated with the acceptance of high-rise living.

Of particular relevance to the present study were the various reasons for nonacceptance mentioned in some of the research. For example, the need for a unique, private form of residence that strengthens the individual character of Americans. It is important to consider the influence of the United States on Puerto Rican society. The values of individualism, privacy, and self-expression that characterize North Americans are having an impact, to some degree, on the cultural expectations and cultural values of Puerto Ricans, especially in urban areas. Nevertheless, none of the studies conducted in Puerto Rico have mentioned values of individualism, privacy, and self-expression as a reason for disliking high-rise living.

On the other hand, a cause of nonacceptance of high-rise living in Puerto Rico not found in other studies is the need of Puerto Ricans to own their own piece of land ("propio pedacito de tierra"), a cultural value that reinforces their sense of fondness for land. This belief is rooted in traditional values of an agrarian society, the type of society that prevailed in the past in Puerto Rico. Yet, some of the predominant values of that agrarian society are still maintained.

Satisfaction With High-Rise Housing

A great deal of the literature on high-rise dwellings is related to residents' satisfaction. The extent to which the high-rise

occupants were satisfied with their housing varied according to population and high-rise complex characteristics. Differences in residents' satisfaction have been found for similar populations by different researchers.

Francescato et al. (1979) studied residents' satisfaction of 37 HUD-assisted developments in the United States. They considered four components of housing to be of relevance for the study of residents' satisfaction. These were the physical characteristics of the complexes, the residents (perceptions, behaviors, and characteristics), the management, and the community. They found that the majority of the residents were satisfied with living in the developments. Only 19 percent of them were found to be dissatisfied. The components that contributed most to explain overall residential satisfaction were satisfaction with other residents, pleasant appearance, and economic value.

Michelson (1977) found similar results in a comprehensive study including high-rise apartments and single-family detached houses, in urban and suburban areas, and mixed socioeconomic groups in Toronto. He found that the factors of residential satisfaction were both physical and nonphysical and that residents were satisfied with housing regardless of its type; however, satisfaction was shown at a higher level for those who lived in suburban houses than for those in apartments.

Williamson (1978) studied four groups of residents living in high-rise and traditional housing from two different cultures, German and Italian. He found that the two groups with higher degrees of

satisfaction were those living in high-rise structures in Germany and those in non-high-rise dwellings in Italy. In other words, satisfaction was not associated with type of housing. On the other hand, he found that the factors that contributed most to the variation in residential satisfaction were education and income levels.

Field (1975) studied the importance of socioeconomic, physical, locational, and social-psychological variables on residential satisfaction of a group of families from metropolitan Lansing, Michigan. The sample included residents from urban, suburban, and rural areas in both high-rise and non-high-rise dwellings. She found that physical factor variables were the most important predictors of housing satisfaction. This finding differed from the results of the authors previously mentioned (Francescato, 1979; Michelson, 1977; and Williamson, 1978).

Becker (1974) studied low and moderate income residents' satisfaction with high-rise developments of the Urban Development Corporation of New York State. He found that residents of low-rise developments were satisfied with living in them to a higher degree than were high-rise development residents, and low income residents were satisfied with development living to a higher degree than were moderate-income residents. Residents indicating the greatest satisfaction were the elderly. Factors mentioned as reasons for satisfaction were newness and cleanliness, security, privacy, and economic rent.

Some of the residential satisfaction studies mentioned previously concluded that the type of housing design is a factor that affects

satisfaction, in that high-rise residents tended to have a lower degree of residential satisfaction than did non-high-rise residents. Newman (1977) found that when a simple relationship existed between the type of housing and residential satisfaction, families who live in single-family dwellings showed a higher degree of satisfaction than did families living in high-rise apartments. However, once many other important factors were included in the relationship, the specific importance of the type of dwelling factor diminished. These other variables which affected satisfaction included personal characteristics, various features of the residential environment, and residents' perceptions of the residential environment.

Characteristics of the residents and location of the high-rise were two important factors that have been mentioned as affecting high-rise occupants' satisfaction. Wekerle (1974) studied nine high-rise complexes in Chicago's Carl Sandburg Village which had a high concentration of single, professional occupants under forty years of age. The area is close to the Rush Street night club district, exclusive Michigan Avenue shops, the Gold Coast, and Lake Michigan. She found that 90 percent of the respondents expressed a high level of satisfaction with living in the complexes. The majority mentioned internal aspects of the dwelling as an important factor affecting satisfaction. In contrast to what Field (1975) found in her study, residents of Carl Sandburg Village emphasized physical aspects of the high-rises. These differences are explained by the fact that the characteristics of the sample for each study were different. The four factors that respondents of Carl Sandburg Village mentioned

to be most influential in their selection of the apartments were closeness to work center, closeness to entertainment, economic reasons, and "high percentage of singles" among occupants. In general, the main differences between Wekerle's research (1974) and the rest of the studies mentioned were symbolic and social aspects attributed to the residential environment under study.

Homenuck (1974) found a significant relationship between satisfaction with the size of current housing and the type of housing and between ownership and satisfaction among a selected group of Metropolitan Toronto residents. Nevertheless, there was not a significant relationship between ownership and satisfaction when only high-rise residents were studied. This means that there were no differences in satisfaction among owners and renters of high-rise dwellings. Analysis of life-cycle stages in relation to satisfaction with size of the current home showed a significant relationship. The group of respondents who were most dissatisfied were married with two or more children at home. The most satisfied were single or married, over thirty-five years of age, with no children living at home. No significant differences were found when single-family detached homeowners were studied in relation to satisfaction by stage in the life cycle.

Another factor that has been studied in relation to satisfaction with housing is the perception of the resident toward the residential environment. Ermuth (1974) found that the residential satisfaction of a typical resident in metropolitan Des Moines, Iowa, was primarily

based on attitude toward the residential environment. He studied selected variables associated with satisfaction by factor analysis. Resulting factors were neighborhood environment, housing environment, shopping, accessibility, employment, and transportation, in descending order of total variance explained. The elements of the residential environment factor which most affected satisfaction with residence were quality of services, quietness and condition of streets, separation of pedestrians and cars, and natural features existing in the environment.

Sanoff and Sawhney(1972) studied low-income families living in the town of Asheboro, North Carolina, and found a significant relationship between residential satisfaction and attitudes toward the residential environment. The components of neighborhood that were most important to the respondents were the services such as fire protection, police protection, good schools, regular trash collection, and safety for children.

Even though Ermuth (1974) and Sanoff and Sawhney(1972) found the neighborhood to be associated with residential satisfaction, the components of the neighborhood that respondents mentioned to be most important were different. However, variations in socioeconomic characteristics, cultural and psychological factors, and location of the residence were determinants of diversity of environmental features mentioned in each study.

In summary, satisfaction with residential environment varied according to social, economic, cultural, and geographical characteristics of the population under study. Different authors measured

satisfaction with the living environment in various ways. Findings of selected research have identified components of housing satisfaction as physical design, environmental or neighborhood design, management, and social environment. The special importance of each one of these components of housing satisfaction varied according to socioeconomic characteristics of the residents, and to type and location of housing.

Aspects Related to High Rise Apartment Living

The review of literature on high-rise housing showed that there were selected factors which were associated with high-rise apartment living. Some of these factors are length of apartment occupancy and intended apartment occupancy, previous residence (location and type), social, physical and environmental aspects of the high-rise living.

A large group of the families who move to high-rise units use them as temporary housing. Their intention is to move to a single-family detached house in the future (Norcross, 1973; Homenuck, 1973).

Greenberg and Greenberg (1977) found that residents of high-rise housing who planned to live in the apartment for a short time expressed negative expectations toward it. These families assumed a behavior that they would not assume if the apartment were considered permanent. There was a tendency to ignore the administrative and social problems of the high-rise complexes and to resist involvement in those issues related to the residential environment.

Greenberg and Greenberg (1977:170) hypothesized that the effect of expected long-term residency would result in greater positive feelings toward the environment due to need to justify the decision.

These residents must psychologically prepare themselves for a longer stay and cognitively adjust their beliefs to conform to the external realities of the situation. In other words, residents who anticipate a shorter length of occupancy would have less mental perceptions than residents who anticipate longer tenancy.

Wekerle (1974) explained the general conception of people in terms of who should live in a high-rise apartment:

High-rise apartment living is viewed by the majority of households as suitable for only certain life-cycle stages--pre-family, post-family, childless couples, and never-married households. (p. 237)

Experience with location and type of residence has been associated with attitude toward high-rise housing. Individuals who had been reared in rural areas and in non-high-rise dwellings tended to have a greater resistance to acceptance of high-rise living. On the other hand, individuals who had spent most of their lives in cities and in high-rise forms of dwelling were expected to have a higher degree of tolerance to high-rise living.

The social and physical aspects of high-rise living were the most common factors studied in respect to their importance for residents. Physical aspects refer to the building and apartment unit; social aspects refer to all kinds of relationships among the human subjects in a high-rise complex (residents, visitors, and management). Michelson (1977) referred to these aspects as properties "inherent to the structure" (physical aspects), and properties that appear "in response to its construction" (social aspects).

Two factors are almost always confused in any discussion of high-rise apartments: (1) the properties inherent in the high-rise building, and (2) properties that only appear connected to them insofar as these buildings are constructed in a particular way. A good number of social implications

of high-rise apartments are, in fact, implications of these buildings as they are conventionally constructed. (p. 43)

The environmental aspects of high-rise apartment living include factors such as security, accessibility of services and conveniences in the community, and neighborhood characteristics.

History of Condominiums

The word "condominium" is derived from Latin "com"plus"dominium." It literally means joint ownership, control or joint dominion. The concept of condominium is relatively new in America, but it has been known since the time of Ancient Rome. Land that was near the Forum became scarce for housing the citizens of Rome. The need for a new kind of housing for the masses of Roman citizens created the condominium apartments. When the Roman Empire declined, the original usage of the concept of joint ownership condominium also declined. It was in Western Europe, during the Middle Ages when the condominium form of ownership was revived, because of the need for housing in the crowded walled cities of that time. Its popularity decayed when the walled cities became obsolete. Condominium usage was intensified during the first half of the twentieth century when some European countries regulated this form of ownership by enacting detailed statutes. Statutes permitting condominiums were passed in Germany, Italy, Spain, Belgium, France, and the United Kingdom, where this form of ownership became popular (Warner, 1976; HUD, 1972). The condominium form of housing was adopted and spread in Latin America during the twentieth century. The first Latin American countries to

adopt condominium laws (called horizontal property) were Brazil in 1928, and Chile in 1937 (Clurman and Hebard, 1970). The rest of the Latin American condominium laws were enacted in the late 1940's and 1950's.

The condominium as a form of ownership was introduced to the United States by Puerto Rico. Several authors have explained the important role that Puerto Rico had in the development of a condominium law in the United States.

A few condominiums existed in the United States as early as 1947, but condominiums were not legally established in this country until 1951 when the Territory of Puerto Rico,¹ plagued by a scarcity of land for housing, a rapidly growing population, and an acute housing shortage, passed a law establishing the legal status of condominiums. This was followed in 1958 by the passage of another Puerto Rican law, "The Horizontal Property Act," governing the ownership of real property under the condominium method.

In 1962, F.H.A. drew up a condominium statute, which was based on the Puerto Rican statute, and which subsequently served as a model for the United States in enacting condominium legislation. (HUD, 1972:3)

The real impetus for condominium growth in this country came from the Federal Housing Administration as it responded to the need for government-insured financing in Puerto Rico. (FHA has insured but few condominium loans in the United States.) Its initial research proved to be very favorable, and the FHA model statute gave the U.S. a head start in establishing condominium regimes. (Cromwell, 1973:2)

Puerto Rico went on to enact horizontal property legislation in 1958. These new laws gave legal recognition to the condominium form of ownership and served to introduce the concept to the United States. (Warner, 1976:3)

¹Puerto Rico became a U.S. Commonwealth rather than a U.S. Territory in 1952.

The situation in Puerto Rico set the immediate precedent for enactment of condominium legislation in the United States. The first action to stimulate interest in condominiums came in 1961. That year, the National Housing Act was amended to include Section 234, which extended the condominium government mortgage insurance provided by the Federal Housing Authority (FHA) of the Department of Housing and Urban Development (HUD). (Institute of Real Estate Management, 1978:9)

The idea spread from Brazil to Puerto Rico, where in 1958, the Horizontal Property Act was passed, establishing the ownership of real property within the condominium concept as we know it today. The Federal Housing Authority then wrote a model condominium statute for individual states to consider, based on the Puerto Rican legislation. (Holeman, 1980:7)

Definition

The law defines condominium as a form of ownership, not as a building or apartment. The buyer of a condominium dwelling receives the ownership of an individual apartment unit, generally located in a multi-family development, and the ownership of land and other assets pertaining to the development (I.R.S.M., 1978). That is, the condominium unit buyer holds individual ownership of an apartment unit and common ownership of specific areas, buildings, improvements, equipment, and services of the whole development. The owner of a condominium unit shares an "undivided interest" in the common areas of the condominium complex. This means that "ownership cannot be divided" (I.R.S.M., 1978:5). All the condominium owners, jointly, own the common areas and the land; they cannot divide these areas into equal portions, so they all have responsibility for them.

Holeman (1980:6) explained:

Undivided interest means that the unit holder owns a share of the whole, yet his or her percentage cannot be defined apart from the whole."

The form of ownership of condominiums is legally called "fee simple absolute interest." This means that the owner has a title of property for the use and disposition of the exclusive condominium unit and an undivided interest in the common areas without restriction. A person who possesses this kind of ownership is called a "unit owner." The unit owner can be one person or more than one person, such as a married couple, partners of a firm, or a corporation. All the unit owners of a condominium form the "association of owners," or "homeowners association," or "condominium association." The association is responsible for funding, managing, and maintaining the undivided, commonly owned property through an elected "Board of Directors," or "Council of Co-owners." This executive board must operate within the framework of the "Bylaws." There are many technical concepts found in condominium literature, which are necessary to an understanding of the condominium concept. Some of these are:

- (1) By-laws--rules and guidelines for operation of a condominium; they regulate membership requirements, election procedures, and the powers and duties of the directors and officers; they provide for the enforcement of rules and regulations by the Board of Directors. (Holeman, 1980)
- (2) Common area or common estate--all of the condominium area which is not specifically delineated and described as dwelling or commercial units. (HUD, 1976)
- (3) Condominium regime--the mode of self-rule established when condominium documents are recorded, or all documents necessary to legally constitute a condominium and to permit it to operate as such. (HUD, 1976)

- (4) Deed--a document used to transfer a fee simple interest in the unit together with an undivided interest in the common estate in the case of condominium title transfers. (HUD, 1976)
- (5) Master deed or declaration of condominium--legal document that establishes the definition of the private and common elements within the condominium community, and outlines the rights and obligations of the owners; it provides for funding to maintain the property, and creates the condominium association. (Holeman, 1980)
- (6) Reserve funds (general operating)--funds which are accumulated on a monthly basis to provide a cushion of capital to be used when and if a contingency arises. (HUD, 1976)
- (7) Reserve funds (replacement)--funds which are set aside in escrow from monthly payments to replace common elements, such as roofs, at some future date. (HUD, 1976)
- (8) Rules and regulations--statement of norms of expected behavior of residents respecting the use, occupancy, and maintenance of the project and the use of the general and limited common elements. (Holeman, 1980)

The Condominium in Puerto Rico

The form of condominium property in Puerto Rico had its first legal character through Article 396 of the Spanish Civil Code, extended to Cuba, the Philippines, and Puerto Rico in 1889 (Benítez-Rosario, 1968). This statute was not relevant during that time

because condominiums were not known in Puerto Rico. When Puerto Rico became a territory of the United States in 1898, the Spanish Code was still in effect. In 1900, a disposition included in the Foraker Law ordered a review of all laws existing in Puerto Rico. The Article 396 passed through a series of revisions, and was changed to become Article 330 of the Civil Code, but the text remained unchanged.

During the 1950's, the urban problems of San Juan began. This forced the Legislature to amend Article 330 of the Civil Code and Article 8 of the Mortgage Law. The Act number 421 was approved on May 13, 1951, and established the legal character of condominiums in Puerto Rico. The Act had several deficiencies and was amended in 1958 to become Law 104. The number of condominiums rapidly increased, especially in San Juan. In 1960, a group of Puerto Rican legislators went to public hearings in the Senate and House of Representatives of the Congress of the United States to advocate an amendment to the federal housing law. This amendment made possible the insurance of condominium mortgages by the Federal Housing Administration. In 1961, Section 234 of the Housing Act was passed in the Congress of the United States. This law defined the concept of horizontal property, and redefined the following aspects of condominium living: percentage of participation in common elements, norms to be followed during the process of sale, mechanism for collection of common funds, faculty to impose special fee for unit owners with excessive common expenses. It delineated and established the specific powers of the Board of Directors, established norms for the control of the administration, and established the mechanisms for unit owners to present

complaints (through the Consumers Affairs Department) (Medina-Ateca, 1977).

The number of condominiums in Puerto Rico has increased since the decade of the 1950's. The Planning Board made a Condominium Inventory in 1980, and found that there were 618 condominium complexes in the metropolitan area of San Juan. Most of them were high-rise in type. The increase of condominiums in Puerto Rico has caused concern and interest among the public, the housing experts, the government, and legislators. One main concern of the public and legislators is the rise in costs. On April 20, 1979, the House of Representatives of Puerto Rico passed a resolution to investigate the increase in maintenance costs of condominiums in Puerto Rico. The Consumer Affairs Commission of the House of Representatives is currently working on this investigation.

The major concern of the residents of condominiums is consumer protection against possible condominium problems. The Consumer Affairs Department of Puerto Rico is the responsible governmental agency to protect condominium consumers. It regulates the mechanism for complaints through the Condominium Reglamente. Thirty-five complaints were presented during 1977-1978, fifty-two during 1978-1979, and from 1979 to April 1980, forty-seven complaints had been presented to the Department of Consumer Affairs. The causes for complaints were: (1) impugnation of agreements and determinations taken by the Board of Directors, (2) inaccessibility of the audited books, (3) delay of transfer of condominium management from the developer to the association of owners, (4) violation of the

reglament by the interim manager, (5) increased costs of maintenance, (6) lack of maintenance service in common areas, (7) nonfulfillment of the Board's duties, (8) suspension of services, (9) collection of maintenance costs not owed, and (10) unassigned parking space (Letter from Dr. Carmen P. de Busquets, Secretary of Consumer Affairs Department, April 15, 1980).

Selected Research on Condominiums

Since the condominium form of ownership is a relatively new phenomenon in America, there are not many research studies on this topic. Most of the literature found on condominiums concerned management and problems associated with living in condominiums.

Warner (1976) made a survey among real estate developers and brokers in the State of South Carolina and other states to determine the acceptance of condominiums among that group. He found that condominiums as a form of ownership were not widely accepted by the respondents. Most of the respondents manifested interest in revision of condominium control laws.

Several other sources mentioned problems related to condominiums in the United States and Puerto Rico (Otsuji, 1972; HUD, 1975; and HUD, 1976). There are human, sociological, and management problems in condominium living. Otsuji (1972:21) mentioned several problems that he studied in Hawaiian condominium developments:

- (1) Friction arising among owners with heterogeneous social and economic backgrounds within the same project
- (2) Conflicting interests of resident-owners and investor-owners in the same project
- (3) Inadequately trained property managers, including resident managers

- (4) Excess repetition of unit types available within a single project.

In 1975, HUD held hearings concerning the problems associated with condominium development, sales, financing, and ownership. The final summary of the hearings is considered one of the most complete documents representative of condominium problems, because it included concerns of a wide range of interested parties, such as unit owners, attorneys, U.S. Congressmen, condominium association representatives, brokers, developers, and state and local officials. Sources of problems presented in the hearings were: (1) questionable sales techniques, (2) low estimates of common expenses, (3) developers' excessive profit from recreational leases, (4) loss of deposits due to project failures, (5) misunderstanding of legal documents because of complexity and length, (6) poor quality of construction, (7) delay in establishment of the condominium management, (8) management misunderstanding of regulations, rules, and legal constraints of condominiums and difficulties in management operations, (9) income taxability of unit owners association, and (10) difficulty with resale markets and unavailability of financing resources. Action is required from the individual states and the federal government to provide solutions for these and other problems. In spite of that, condominiums continue to be one of the most popular ways for many families in the world to satisfy the desire to own a home. This form of ownership is more common in areas where space is scarce and land is expensive.

CHAPTER III

PROCEDURE

The objectives of the study were: (1) to develop a scale to measure attitudes toward high-rise condominium living; (2) to identify and analyze socioeconomic and housing-related characteristics of the household, and social, physical, and environmental aspects of high-rise condominium living. An interview schedule was developed and administered to a group of selected owner-occupants of high-rise condominiums to obtain data relative to attitudes toward this form of housing and factors associated with it. This chapter will include the procedures used in selecting the sample, developing the schedule, collecting, and analyzing the data.

The Sample

The multistage stratified sample consisted of 260 owner-occupants of high-rise condominiums in metropolitan San Juan, Puerto Rico, from a population of 273 high-rise condominium complexes of seven or more stories that have existed for four or more years, and have no commercial units. Those newly established were omitted because they may have organizational problems that could affect results. To achieve this, a list of all condominium complexes in metropolitan San Juan for 1980 was obtained from the Planning Board of Puerto Rico, 618 in number. The remaining condominium complexes on the list included 273 high-rise condominiums that

were residential.

Metropolitan San Juan was divided into ten zones based on the criteria of geographical proximity, characteristics of the area, and number of high-rise condominium complexes. See Figure 1. A stratified random sample of 29 condominium complexes was drawn from the 273 listed. In order to have representation from all ten zones in metropolitan San Juan, the high-rise condominium complexes were selected in proportion to the total number in each zone. The ten zones included the following number of condominium complexes and sample, and condominium units selected:

	<u>Condominium Complexes</u>		<u>Condominium</u>
	<u>Population</u>	<u>Sample</u>	<u>Units</u>
(1)Condado--Old San Juan	60	6	23
(2)Ocean Park	37	4	13
(3)Miramar	32	3	7
(4)Central Santurce	13	2	9
(5)Isla Verde	30	3	36
(6)Río Piedras- Trujillo Alto- Carolina	19	2	38
(7)Hato Rey	34	3	37
(8)Puerto Nuevo-Monacillo	20	2	26
(9)Caparra-Guaynabo	25	3	45
(10)Levitown-Bayamón- Cataño	<u>3</u>	<u>1</u>	<u>26</u>
Total	273	29	260

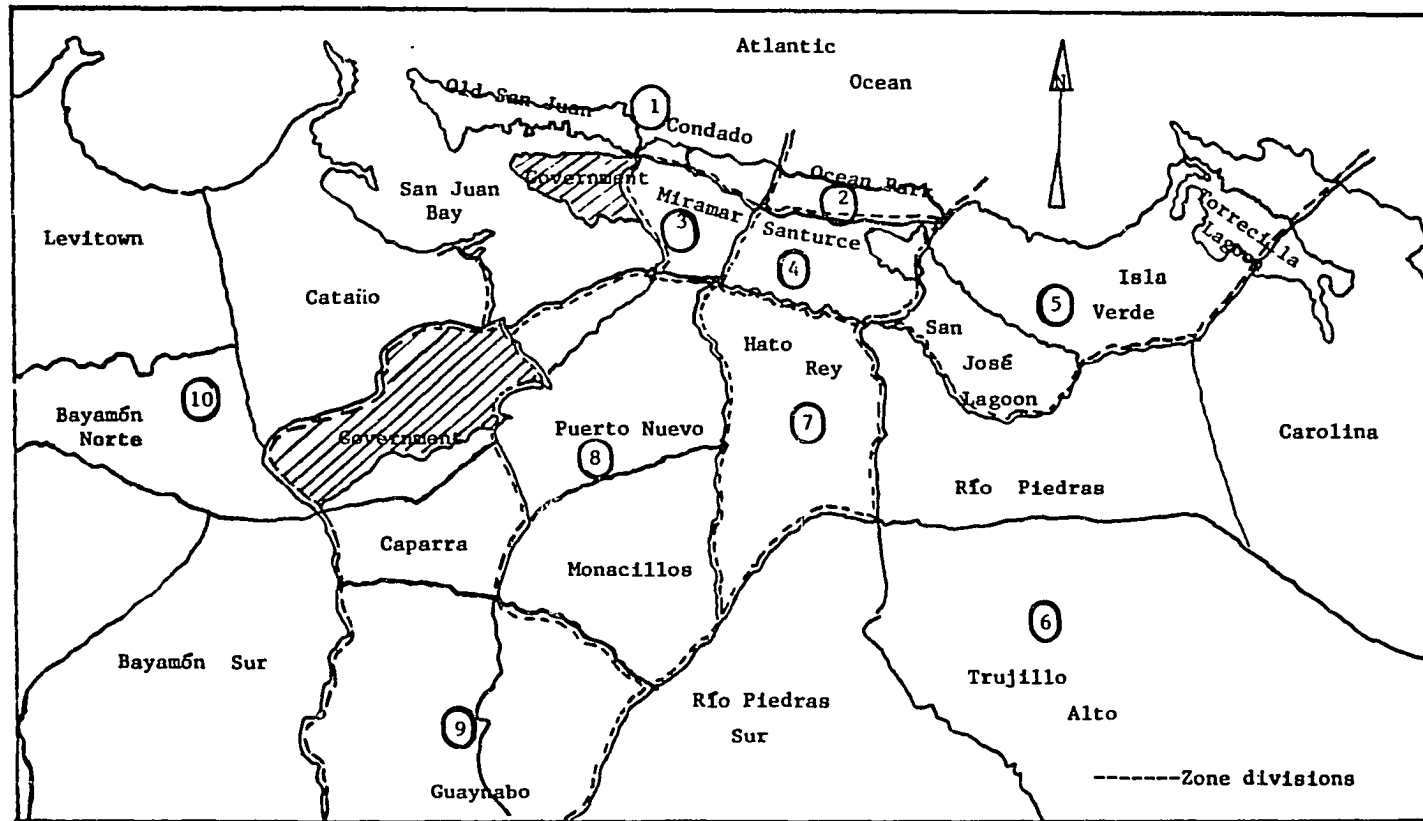


Figure 1
Zoned Map of Metropolitan San Juan, Puerto Rico, (1980)

The list of all owner-occupied apartments was prepared for each condominium complex. A proportional random sample of 260 condominium apartments was drawn from the list of all owner-occupied apartments, 2055 in number. The list of all condominium complexes utilized in the study is included in Appendix A. If after three contacts there was no response, another unit was drawn from the sample to replace it.

The Schedule

An interview schedule, based on high-rise condominium literature, was developed for use in face-to-face interviews (see Appendix B). It was pretested for improvement. The schedule, "Residents' Attitudes Toward High-Rise Condominium Living," was organized into six parts, including the following topics:

1. Socioeconomic characteristics of the household

Data about household composition, income, employment, and education of reference person and spouse.

2. Housing-related characteristics of the household

Length of apartment occupancy, intended apartment occupancy, previous residence (location and type), preferences of type of housing, reasons for purchasing a high-rise condominium, most-liked aspects and least-liked aspects of condominium living, cost of condominium unit, and monthly payment.

3. Social aspects of condominium living

Participation in condominium issues, social interaction patterns, awareness of rights and responsibilities, perception of residents' practices or rules of conduct and use of facilities, and adjustment to condominium living.

A scale of participation in condominium issues, based on Chapin's model (1939), was created. It consisted of assigning a determined value to a list of possible participation activities. The degree of participation was divided into: (1) high participation--24 to 34 points, (2) moderate participation--13 to 23 points, and (3) very limited or no participation--12 or fewer points.

4. Physical aspects of high-rise condominium living

Design features of common areas, facilities, and apartment space (rated as excellent, good, satisfactory, less than satisfactory, or poor).

5. Environmental aspects of high-rise condominium living

Security of the condominium complex and apartment, accessibility to community services (rated as excellent good, satisfactory, less than satisfactory, or poor), and description of neighborhood by Michelson (1975) semantic scale.

6. Attitude toward high-rise condominium

Attitude determined by a Likert-type scale including 21 statements relevant to attitude toward high-rise condominium living.

The questionnaire was submitted to a panel of three experts to evaluate its face validity. Revisions were made for clarity of statements. It was translated and given to three Spanish-speaking specialists in housing for evaluation. The three evaluations were compared to avoid misinterpretation due to translation. After

translation, it was pretested with fifteen residents of high-rise condominiums for clarity and better understanding of questions.

A group of twenty interviewers was trained by the researcher to help in data collection (see Appendix C). The training consisted of techniques of the interviewing process, explanation of purpose and scope of the study, instructions and explanations for the use of the interview schedule, and participation in the pretest of the schedule. An interviewer's manual was developed, using models already developed by the School of Home Economics of the University of North Carolina at Greensboro (Project S-98, 1975; Project S-63, 1975).

During October, 1980, the researcher contacted the administrators of the 29 high-rise condominium complexes and asked permission to conduct the interviews (see Appendix D). One week before the interviews were conducted, a letter was sent to the selected families in each complex to explain the purpose of the study, to ask for assistance, and to introduce the interviewer. Interviewing time required about 50 minutes. The interviews were made in three weeks.

Analysis of Data

Descriptive statistical procedures, such as frequency counts, percentages, ranges, standard deviations, and means, were used to analyze the socioeconomic and the housing-related characteristics of the households.

Kendall's correlation analyses were used to determine relationship between the variables measured in an ordinal scale and the residents' attitudes toward high-rise condominiums. t-tests and

analysis of variance analyses were used to compare significant differences in attitude means for various nominal variables. An .01 level of confidence was used for determining statistical significance.

The use of a multivariate statistical technique of multiple regression was believed to be appropriate, because it permitted examination of the individual and collective contribution of the independent variables on the variance of the dependent variable (residents' attitudes toward high-rise condominium living). The independent variables used as predictors of attitudes toward high-rise condominium living were classified as socioeconomic characteristics of household, housing-related characteristics of households, and social, physical, and environmental aspects of high-rise condominium living.

CHAPTER IV
RESULTS AND DISCUSSION

The researcher analyzed data concerning factors associated with high-rise condominium living in metropolitan San Juan, Puerto Rico, and their contribution in explaining residents' attitudes toward that form of dwelling. This chapter will include the analysis of the data, organized into four sections: (1) description of specific socioeconomic and housing-related characteristics of the residents, (2) residents' attitudes toward high-rise condominium living, (3) analysis of elements of high-rise condominium living, and (4) relationship between elements of high-rise condominium living and residents' attitudes toward that form of dwelling.

Description of Socioeconomic and Housing-Related

Characteristics of the Residents

Socioeconomic Characteristics: Household
Composition

The factors of household composition that were studied were: size of families, adults living in household, children living in household, sex of reference person, and age of reference person and spouse.

Size of household. The size of families was small. Of the total 260 households in the study, a majority (72 percent) had three or fewer members. The average number of persons per household was

2.7; this is fewer than the Planning Board of Puerto Rico (1979:38) estimated (3.81) for 1980 for the entire island. However, previous studies on high-rises in Puerto Rico have indicated that the households were small. The number of persons in households in this study ranged from one to six; 21 percent had four members, and 7 percent had five to six members.

Adult-household composition. The most common pattern of adults within a household was the married couple (53 percent). Approximately one-third of the households were constituted of singles living alone; a majority was single females (26 percent). The pattern of non-related persons living in condominium apartments was found to be infrequent, only 5 percent. Other compositions were primarily extended families or siblings sharing a unit (Table 1).

Table 1
Adults Living in Household

Relationship	Households (n=260)	
	Number	Percent
Married Couple	137	53
Single Male	13	5
Single Female	69	26
Siblings	7	3
Extended Family	22	9
Non-Related	9	4
Extended and Non-Related	2	*
Couple and Non-Related	1	*

*Less than 1 percent.

Children living in household. A high incidence (77 percent) of the households had no children under ten years of age living in the condominium apartment; however, one-third had at least one child under the age of eighteen years living at home. From the total of 260 households, 15 percent had one child under the age of ten years; 8 percent had two children under ten years of age; but only one of the households had three children under ten years of age (Table 2).

Table 2

Presence of Children in Households

	Households (n=260)	
	Number	Percent
Children Under 18 Years of Age		
Yes	86	33
No	174	67
Children Under 10 Years of Age		
0	200	77
1	39	15
2	20	8
3	1	*

*Less than 1 percent.

Sex of reference person. The reference person, a term used by the U.S. Census Bureau since 1978, was the member of the household designated as the person or one of the persons who owns the home

(U.S. Labor Department, 1979). Approximately two-thirds (64.6 percent) of the reference persons were male.

Age of reference person. The average age for the reference person was 44 years. In those households that had husband-wife composition (151 cases), the age of the spouse was asked. The average age of the spouse was 41 years. One-third of the reference persons (34 percent) were 35 years old or younger, whereas 43 percent of the spouses were in that age group. Only 9 percent of the reference persons and 4 percent of the spouses were older than 65 years (Table 3).

Table 3
Age of Reference Person and Spouse

Age	<u>Reference Person (n=257)</u>		<u>*Spouse (n=149)</u>	
	Frequency	Percent	Frequency	Percent
25 or Less	12	5	16	11
26 - 35	74	29	49	33
36 - 45	69	27	31	21
46 - 55	50	19	27	18
56 - 65	29	11	20	13
66 - 75	20	8	6	4
76 or More	3	1	0	0

*There were 151 spouses, but the age of two was not given.

This is not unusual, for it has been found that high-rise condominium occupants in Puerto Rico tend to be younger than the average age for persons in other types of dwellings (Asociación de Constructores de Hogares, 1972; Bussman Construction, 1974; Ponce and Associates, 1978).

Socioeconomic Characteristics: Income

The yearly income as reported for the households that were included seemed to be fairly high compared to the yearly income of all Puerto Rican households. In 1980, the average yearly household income in Puerto Rico was \$12,928 in current dollars (Junta de Planificación, 1980:A-2). Half of the households in this study (52 percent) had a yearly income of \$20,000 or more, and one-third had a yearly income of \$25,000 or more. On the other hand, only 26 percent of the households had an income less than \$13,000 - approximately the median (Table 4).

Table 4
Yearly Income of Households

Income	Households (n=245)	
	Frequency	Percent
Under \$5,000	4	2
\$5,000 - \$7,499	18	7
\$7,500 - \$9,999	19	8
\$10,000 - \$12,999	23	9
\$13,000 - \$14,999	19	8
\$15,000 - \$19,999	35	14
\$20,000 - \$24,999	45	18
\$25,000 and over	82	34
Total	245	100

Socioeconomic Characteristics: Education
Of Reference Person and Spouse

Eighty percent of the reference persons had at least some college education. Only 1 percent had not completed high school. By and large reference persons had a higher educational level than the spouses. Among the spouses who gave their educational level, 70 percent had at least some college education. When specific categories of education were compared for the two groups, the reference persons showed higher percentages in the master's and doctoral categories; spouses showed a higher percentage with the bachelor's degree (52 percent) than the reference persons (45 percent) (Table 5).

Table 5

Education of Reference Persons and Spouses

Education	Households			
	Reference (N=254)		Spouse (N=136)	
	Frequency	Percent	Frequency	Percent
Less Than High School	3	1	3	2
High School	31	13	28	21
Technical-Skill Course	15	6	10	7
Some College	18	7	13	10
Bachelor's Degree	116	45	70	52
Master's Degree	43	17	7	5
Doctorate	27	11	5	4

Socioeconomic Characteristics:
Occupation of Reference Person

Occupations of the reference persons and spouses were classified into eight categories adapted from Nam and Powers (1965). The occupations under each category are described in Appendix E.

The most predominant occupational categories for the reference persons were professional (34 percent) and manager/official (18 percent). The professions that were most represented among reference persons were physician, lawyer, and university teacher. Bank and construction managers, industry personnel administrators, and private business managers were commonly found in the manager/official category. The third highest incidence of occupation was the retired/disabled/student group (14 percent) (Table 6). Five percent of the reference persons were owners of their own business; eight were housewives (3 percent).

Table 6
 Occupation of Reference Persons and Spouses

Occupation	Households			
	Reference (N=258)		Spouse (N=140)	
	Frequency	Percent	Frequency	Percent
Unemployed	2	**	*	
Professional	88	34	33	24
Managerial/Official	45	18	3	2
Clerical	18	7	19	14
Sales and Service	29	11	7	5
Craftsmen, Opera. and Fore.	10	4	1	**
Technicians	8	3	2	1
Owner of Business	13	5	5	3
Retired/Disabled/Student	37	14	6	4
Housewife	8	3	64	46

*Unemployed spouses were coded under category housewife. Eleven of the households with spouses did not report occupation of spouses.
 **Less than 1 percent.

Socioeconomic Characteristics:
Occupation of Spouse

Slightly less than half of the spouses (46 percent) were housewives; as was found for the reference persons, the professional occupations were frequent (24 percent) among spouses. Their second most frequent occupation was clerical (14 percent). In 1978, 23 percent of all Puerto Rican females 16 years of age or older were part of the labor force (Junta de Planificacion, 1979:88). Therefore, the 50 percent of spouses who reported working outside the home was considerably higher than that for the island as a whole (Table 6).

Housing-Related Characteristics:
Length of Apartment Occupancy

The length of apartment occupancy ranged from less than one month to 20 years. The mean length of occupancy was 4.7 years. Ten percent of the residents had lived in the apartments for less than a year, 31 percent for one or two years, and 22 percent for three to four years. Approximately one-fourth of the residents (28 percent) had lived in the apartments for five to ten years; 9 percent had occupied the apartments for 11 or more years.

Housing-Related Characteristics:
Intended Apartment Occupancy

A large majority of the condominium residents (73 percent) considered the condominium apartment permanent housing. When asked how long they plan to live in the condominium apartment, more than half of them (52 percent) answered that they had no specific plan to move, 24 percent were unsure, and 24 percent answered in years. The

length of intended apartment occupancy for those who answered in years ranged from less than one month to ten years; the mean was 2.3 years. This finding differed from that in previous studies in the United States and Canada (Norcross, 1973; Homenuck, 1973), which found that a large group of the families who moved to high-rise units used them as temporary housing with intentions to move to a single-family detached house in the future.

Housing-Related Characteristics:
Place and Type of Previous Residence

Slightly less than half of the respondents (47 percent) grew up in a metropolitan area, 24 percent in an urban non-metropolitan or suburban area, and 17 percent spent childhood in a small town. (A small town was defined as a small typical town in Puerto Rico which includes the square and the surrounding streets and neighborhood.) Twelve percent of the respondents lived in a rural area while growing up. A large majority of the interviewees (87 percent) lived in a single-family detached house in their early years.

Housing-Related Characteristics:
Preference for Housing--Ownership and Type

Ninety-six percent of the respondents preferred to own their dwelling unit. More than half of the respondents (51 percent) preferred to live in a multifamily house. Previous studies on preference of housing have consistently indicated that single-family detached houses are preferred. Familiarity with any housing form has been found to be an important factor associated with the preference for housing. This may explain the high percentage of residents in this study who preferred to live in multifamily housing.

Housing-Related Characteristics:
Reasons for Purchasing a Condominium Apartment

The three main reasons for purchasing a condominium apartment, in order of preference, high to low were: security, accessibility, and ease of maintenance. Several other reasons frequently mentioned were economic reasons, apartment features, building features, neighborhood, change in family size, and change in family composition. The least frequently mentioned reasons for purchase of the condominium were prestige-status, advantage to have people around, and privacy (Table 7).

Table 7
 Reasons for Purchase of Condominium Unit,
 In Order of Importance

Reason	Rank		
	First	Second	Third
Apartment Features	3	6	4
Building Features	5	7	9
Security	1	3	3
Accessibility	2	1	2
Neighborhood	9	5	4
Economic Reasons	4	4	6
Ease of Maintenance	3	2	1
Prestige-Status	10	10	10
People Around	11	10	9
Change in Family Size	6	9	7
Change in Family Composition	7	8	5
Privacy	8	11	8

Security of person and property and accessibility to community facilities and services are two common demands of the residents in metropolitan San Juan in response to the increase in crime rates, and in response to the need for housing close to work, educational centers, and other facilities and services frequently utilized. The ease of maintenance as a reason for purchasing a condominium is evidence of the increasing employment of women. The building and apartment features as a reason for purchase may be explained by the fact that most of the new condominium buildings and model apartments are luxuriously and attractively decorated to gain the attention of the housing consumer.

Housing-Related Characteristics:
Most-Liked Aspects of Condominium Living

The three most-liked aspects of condominium living that were mentioned, in order of importance, were privacy, security, and accessibility. Analysis of the distribution of frequencies for the first choice among most-liked aspects of condominium living showed the six most frequent answers to be privacy (44 percent), security (13 percent), accessibility (12 percent), apartment features (10 percent), neighborhood (5 percent), and building features (5 percent).

The rank order for the first choice of reasons for purchasing a condominium unit was compared with that of the most-liked aspects of condominium living. Table 8 shows that privacy of the condominium unit was one of the least important reasons for purchasing a condominium (eight in rank order). Yet, it ranked first as the most-liked

Table 8
 Rank Order of Most Important Reason for Purchase
 Of Apartment and Most-Liked Aspect of
 Condominium Living

Reasons or Aspects	Rank	
	Reasons for Purchasing	Most Liked Aspects
Building Features	5	6
Apartment Features	3	4
Privacy	8	1
Accessibility	2	3
Security	1	2
Neighborhood	9	5
Maintenance	3	9
Economic Reasons	4	7

aspect of the condominium. On the other hand, security and accessibility of the condominium ranked first and second most important reasons for purchasing and second and third for most-liked aspects. Maintenance was another variable that showed large differences in ranking between purchase priority and most liked aspect. It was the third most important reason for purchasing the condominium unit, but it ranked low (ninth) as one of the most-liked aspects. It must be pointed out that there were two aspects of maintenance involved. The most-liked aspect refers to maintenance of building; reason for buying refers to ease of maintenance of the unit.

Housing-Related Characteristics:
Least-Liked Aspects of Condominium Living

The least-liked aspects of the condominium living, expressed as the first rank, in order of importance, were: parking facilities, poor management, and cost of condominium unit. Twenty-two of the respondents (8 percent) stated that there were no aspects of condominium living that were disliked. Several other aspects of condominium living that were mentioned as disliked by respondents were lack of recreational facilities, noises, misuse of facilities by residents, and vandalism by strangers and children. The least-liked aspects of lower rank were neighbors on the floor, privacy, physical aspects of the apartment, physical aspects of the building, and crowding (Table 9).

Table 9

Least-Liked Aspects of Condominium Living

Aspect	Rank		
	First	Second	Third
Physical Structure of Apartment	11	9	8
Physical Structure of Building	12	7	7
Management	2	4	6
Neighborhood	7	8	8
Residents	8	9	4
Noises	4	6	9
Privacy	11	6	8
Cost	3	2	4
Parking	1	5	3
Security	6	10	3
Neighbors on Floor	10	7	-
Crowding	9	1	5
Poor Maintenance	5	3	2
Recreational Facilities	5	-	1

One of the assumptions of the present study was that the physical limitations of high-rise condominiums were only one of several factors that affect living within the environment, not necessarily the most important. Several negative physical characteristics that are commonly associated with this form of dwelling were not the least-liked aspects of condominium living among respondents in this study. For example, aspects such as physical structure of the apartment, physical structure of the building, crowding and lack of privacy ranked low among respondents as disliked aspects of condominium living. On the contrary, most of these aspects ranked high as most-liked aspects of the apartment. The physical aspect of the condominium which was most disliked was the lack of recreational facilities, ranking fifth among first ranked dislikes.

Two disliked aspects of condominiums that have been mentioned by previous studies conducted in Puerto Rico (Bussman Construction, 1974; and Ponce and Associates, 1978) were lack of recreational facilities, and problems related to condominium management. Findings in this study support those stated above.

Housing-Related Characteristics:
Cost of Purchase and Monthly Payment
For Condominium Unit

The average cost of purchase of the condominium units was \$45,937. The minimum purchase price was \$14,000; the maximum was \$125,000. In 1976, the average sale price of a new condominium unit in Puerto Rico was \$48,890 (Planning Board, 1977).

The average monthly payment was \$346; the highest was \$1,097. Fifty-four of the residents interviewed did not report the monthly payment. This monthly payment included principal, interest, insurance, and maintenance for the majority of the respondents. For 42 percent of the respondents, it also included taxes.

Residents' Attitudes Toward High-Rise

Condominium Living

The residents' attitudes toward high-rise condominium living was measured with a five-point Likert scale which included 21 items, ten positively stated and eleven negatively stated. Each positive statement was scored from one (strongly disagree) to five (strongly agree); each negative statement had reversed scoring. The higher the score, the more positive the attitude. Respondents could have accumulated from 21 to 105 points on the scale. Actual scores ranged from 41 to 94, with a mean score of 68.3 points. No extreme scores were found; in other words, there were no extremely positive or extremely negative attitudes. Most of the respondents were around the middle of the scale. If the scale had been divided into three categories, based on points accumulated, the majority of the respondents would be in the intermediate category. When analyzing the frequency distribution of average scores for each respondent, it was observed that, even though a majority was in the middle of the scale (from 43 points to 83 points), 65 percent of all respondents had an average of 67 or more points. That means that a larger number of respondents were grouped on the positive side of the scale. The skewness was

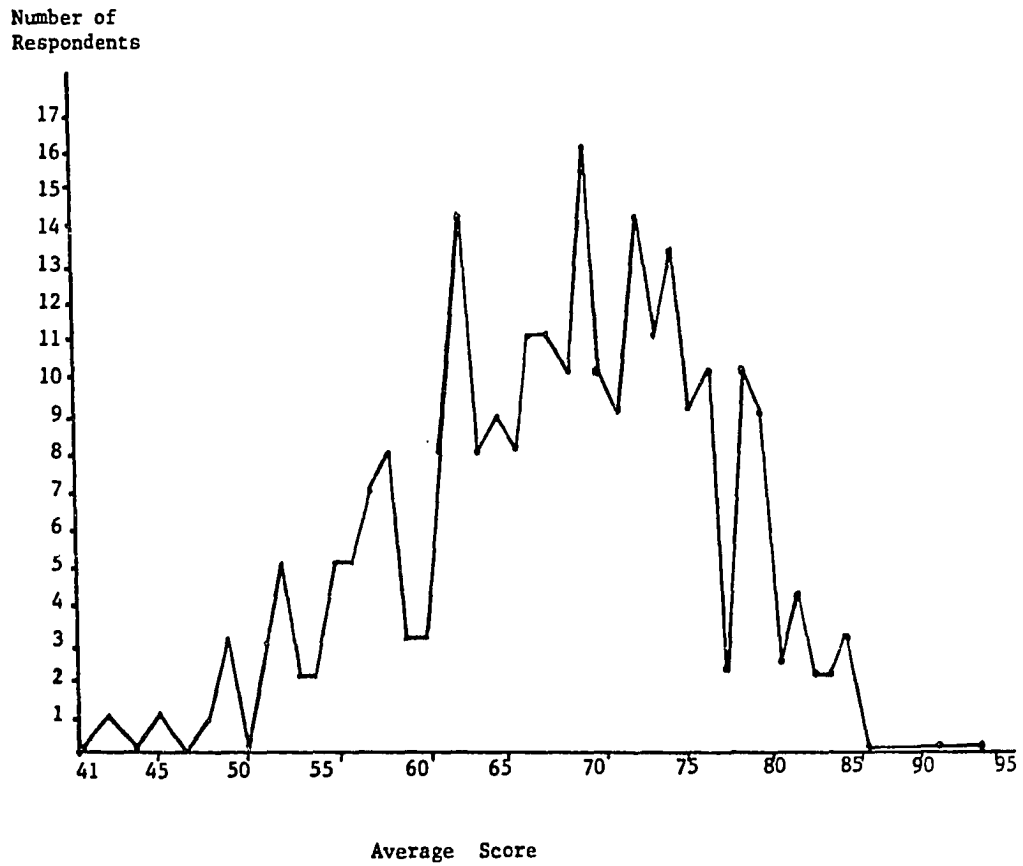
-.46. Figure 2 shows the distribution of the average scores. Respondents' answers to each item are shown, in percentages, in Table 10.

A majority of the respondents agreed or strongly agreed that high-rise condominiums economically use land (96 percent), require less maintenance time (87 percent), and are safer than other forms of dwellings (76 percent), did not believe that high-rise condominiums limit self-expression (69 percent), are noisy (62 percent), too crowded with people (56 percent), or impersonal (51 percent), which is indicative of positivism toward condominiums. A considerable majority of the respondents agreed or strongly agreed that high-rise condominiums are more hazardous than other types of dwellings in event of fire (72 percent), and preferred to own a single-family detached dwelling (62 percent), which is indicative of negativism toward condominiums. Scores relative to resistance of high-rise condominiums to earthquake and inadequacy of their management showed neutrality of opinion for the group as a whole.

Analysis of attitude mean scores indicated that a majority of the residents had a moderately positive attitude toward high-rise condominium living. This may be explained by the fact that the respondents had voluntarily chosen among housing alternatives to purchase a high-rise condominium.

These results differ from those of Bussman Construction (1974) and Ponce and Associates (1978) in that respondents did not perceive condominiums as limiting one's sense of property, promoting seclusion, as small in space, having inadequate maintenance, as an unwise investment, impersonal, nor crowded with people. Although

Figure 2
Distribution of Average Scores of Residents
Attitudes Toward High-Rise Condominium



Skewness = $-.46$

Table 10
Attitude Toward High-Rise Condominium Living

Items	Precents (N=260)				
	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
<u>Positive Statements (5-1 Scoring)</u>					
It is preferable to live in a high-density area.	15	34	14	32	5
High-rise condominium is safer	41	35	10	9	5
Greater social contacts	14	34	14	31	7
Increases one's prestige	7	8	19	54	12
Requires less maintenance	49	38	2	9	2
Economical use of land	65	31	2	1	1
Resistance to earthquakes	16	24	32	8	10
Wise investment	28	42	17	10	3
Environment of independence from social pressures.	29	40	9	18	4
Advantageous to have rules and regulations	29	43	11	13	4
<u>Negative Statements (1-5 Scoring)</u>					
Goal is to own house and lot	40	22	9	22	7
People with children should not move to high-rise condominium	25	23	13	30	9
High-rise condominium apartments are small	9	27	14	43	7
Inadequate maintenance	8	27	18	42	5
High-rise condominiums are impersonal	9	31	9	47	4
Single-family detached house is ideal type of dwelling	26	22	14	33	5
People are crowded in condominiums	12	25	7	50	6
Limits self-expression	7	12	12	59	10
People who dislike noises should not move to condominium	13	17	6	50	12
Inadequate management	15	26	18	36	5
Hazardous when fire occurs	30	42	12	15	1

approximately two-thirds of the respondents preferred to own their lot and house, less than half considered the single-family detached house the ideal type of dwelling.

Elements of High-Rise Condominium Living

Social Aspects: Participation in Condominium Issues

The respondents were asked if they had participated or been involved, during the last six months previous to the interview, in several condominium issues. Values were assigned to each item, according to the degree of involvement. The respondents could have accumulated from zero to 34 points; the mean was 15.7 points, the median, 16 points; and the mode, 20 points. The range of actual scores was zero to 34 points. Scores were categorized into three groups: (1) highly involved--24 points or more; (2) moderately involved--13 to 23 points; and (3) infrequently involved--zero to 12 points. Twenty-seven percent were highly involved in condominium issues; 31 percent were moderately involved; and 42 percent were infrequently involved. The three activities participated in by a majority of the respondents were: (1) inform the administrator or residents' committee about a personal or collective problem affecting the condominium (75 percent); (2) discuss condominium problems frequently with more than one person (74 percent); and (3) attend meetings of the residents in the condominium (67 percent).

Respondents were asked if they desired to be more involved, less involved, or involved about the same as they were currently in

condominium issues. A majority of the respondents (70 percent) answered that they want to be involved to the same degree as they were at that time. Eight percent wanted to be less involved, and 22 percent wanted to be more involved.

Greenberg and Greenberg (1977) associated low involvement in issues affecting the complex with intentions of temporary residents in a condominium. In contrast, most of the respondents in the present study considered the dwelling permanent, yet had low involvement in condominium issues. However, approximately one-fourth indicated desire to become more involved.

Social Aspects: Social Interaction Patterns

Table 11 shows the frequency of resident participation in social activities. Some activities were never performed by the majority of the respondents; these were meeting others in the complex for meals in condominium facilities or apartments, joining in sports and games with other residents in the complex facilities, and going outside the complex with other residents for activities such as shopping, movies, meals. The most frequent social activities were to meet others in the complex for conversation in common areas, and for conversation in the apartments. When the social interaction patterns were analyzed as a mean score for all activities, based on a three-point scale, the data showed that 68 percent of the respondents obtained a mean score less than 2.0 for all activities. In the scale ranging from 3.0 (high participation in social interaction activities) to 1.0 (low participation in social interaction activities),

Table 11
Social Interaction Patterns Among Condominium Residents

Activities	Percent (N=260)			
	Frequently	Occasionally	Never	N/A
Parties and Activities	14	37	40	9
Chats Common Areas	17	47	34	2
Chats in Apartments	26	47	27	*
Sports and Games	11	19	56	14
Go Outside With Residents	14	29	55	2
Meals in Condominium	6	29	63	2

*Less than 1 percent.

the majority of the residents ranked low in participation in social interaction within the condominium.

An explanation of these findings may be the increasing number of employed women, their reduced time spent at home, and the physical arrangement of the apartment providing privacy and freedom from social pressures.

Eleven percent of the respondents had no friends in the condominium. Sixty-seven percent had five or fewer friends, and 22 percent had ten or more friends within the complex. The average number of friends in the condominium was 5.8; the mode was three friends. Fifty-six percent of the respondents knew ten or fewer persons in the condominium well enough to talk with them. The average number of such persons known in the condominium was 15.1.

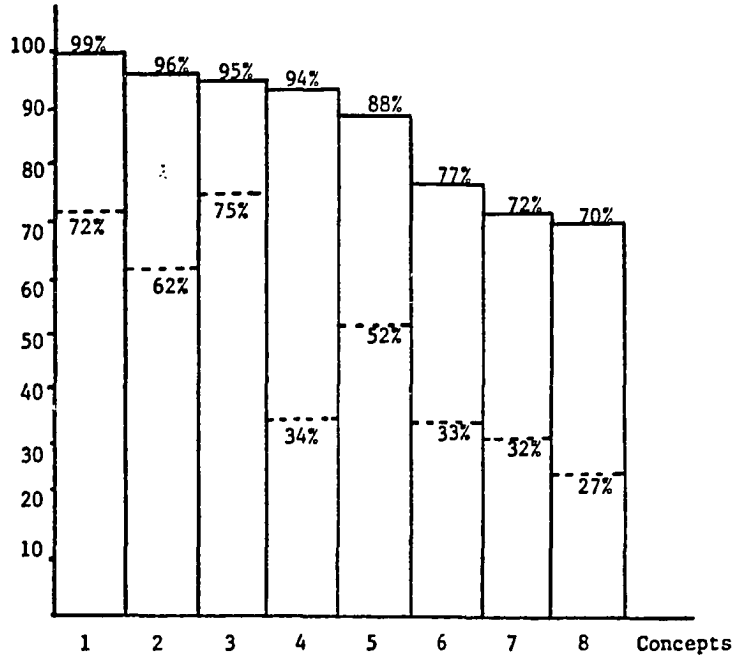
Social Aspects: Satisfaction
With Management

Thirty-five percent of the residents were very satisfied with management of the complex; 43 percent were somewhat satisfied; and 22 percent were very dissatisfied. Reasons that were most frequently mentioned for dissatisfaction were poor maintenance, inefficient administration, need for improvement, and lack of action taken by the administration on issues. Thirty-one percent of the respondents indicated that the administration of the condominium was good. In summary, the respondents indicated a moderate satisfaction with the administration of the condominium complex in which they lived.

Social Aspects: Rights
And Responsibilities


Knowledge of condominium concepts. A majority of the respondents (from 70 to 99 percent) had heard of all the concepts related to the condominium that were included in the survey (see Figure 3). The concept that was best known by the largest proportion of the respondents was the common areas of the complex. A majority of the respondents could have explained well the meaning of common areas, maintenance fee, and Board of Directors. Slightly over half of the respondents (52 percent) could explain well the meaning of the Homeowners Association. The declaration and by-laws, the operating budget, the management contract, and the Horizontal Property Act had been heard of by the majority of the respondents, but could be explained well by less than one-third of them. The three aspects that were least known by approximately half of the respondents were

Figure 3
 Awareness and Knowledge of Selected Concepts
 Related to Condominium Ownership



- 1=Projected Condo Fee
- 2=Board of Directors
- 3=Common Areas
- 4=Declaration and By-laws
- 5=Homeowners Association
- 6=Operation Budget
- 7=Management Contract
- 8=Horizontal Property Act

 = Have heard of it before.

 = Could explain well its meaning.

the Horizontal Property Act (52 percent), the management contract (49 percent), and the operating budget (45 percent) (Figure 4).

Table 9 showed that the management was ranked second in importance of the least-liked aspects of condominium living. This confirmed a statement made earlier that 22 percent of the respondents were very dissatisfied with management of the condominium. On the other hand, almost half of the respondents could not explain the meaning of the management contract, nor the operating budget. Both concepts are importantly related to the management of a condominium. Another finding relevant to the unawareness of rights and responsibilities of the residents was that almost one-fourth of the respondents (23 percent) could not explain the meaning of the declaration and by-laws and the Homeowners Association of the condominium.

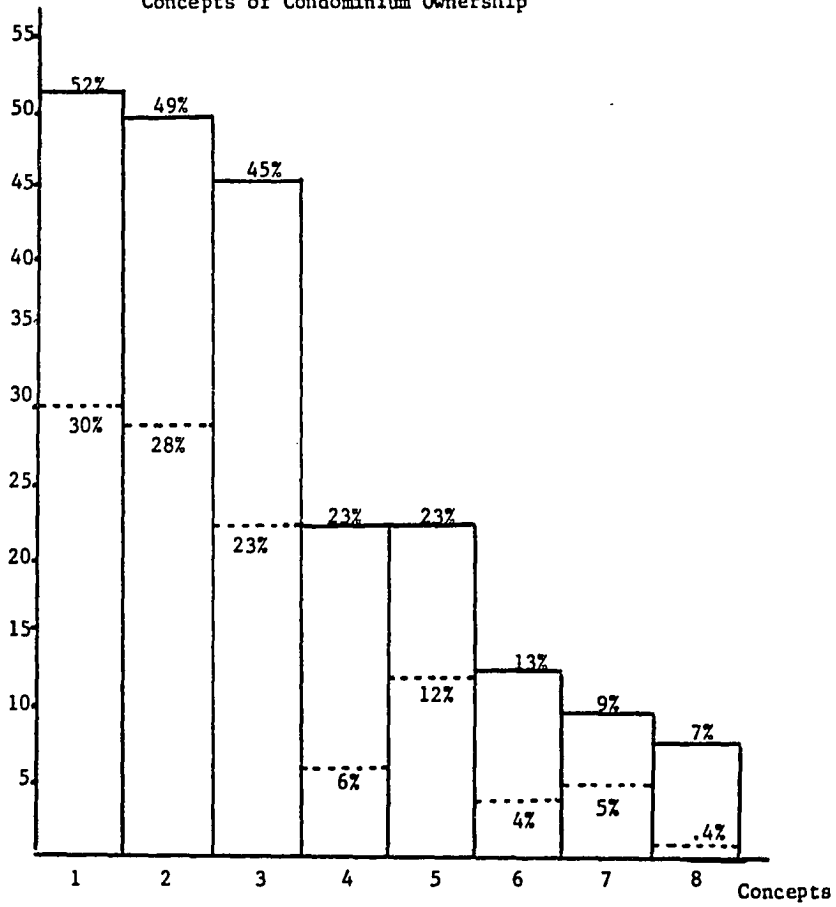
Carefulness of reading contract before signing. When asked how well they read the condominium documents before signing a contract, the respondents answered as follows: 44 percent read them carefully; 21 percent, somewhat carefully; 18 percent, skimmed; and 17 percent answered that it did not apply. The latter covers situations in which one's lawyer or person in household other than respondent signed the contract.

Social Aspects: Rules of
Conduct--Use of Facilities

Two situations of conduct or facility use having a negative impact that were most frequently observed by the largest number of residents were children or adults playing with or in elevators, and assigned parking space being utilized by unauthorized persons. Five

Figure 4

Inability to Explain or Unawareness of Selected
Concepts of Condominium Ownership



= Could not explain it well.



= Have not heard of it before.

- 1=Horizontal Property Act
- 2=Management Contract
- 3=Operating Budget
- 4=Declaration and By-laws
- 5=Homeowners Association
- 6=Board of Directors
- 7=Common Areas
- 8=Projected Condo Fee

out of the nine situations included in the survey were frequently or occasionally observed by a majority of the residents. In addition to the above, in descending order of residents experiencing them were residents playing stereos, musical instruments, radios, television, or amplifiers at a high volume; residents or children damaging furniture or equipment in common areas; and residents keeping domestic animals in violation of sanitary regulations (see Table 12). A majority of the respondents indicated that they had never experienced or been aware of violations of rules related to structural modifications or alterations, nor of neighbors making noise due to furniture moving, or dropping heavy objects. Several other situations respondents were aware of included residents misusing common areas, children playing in corridors, and vandalism.

Results of the Becker (1974) and Francescatto (1974) studies among low and moderate income families in high-rise dwellings pointed out abuse of the building and facilities by these occupants. The current study cites the same abuse by relatively high-income families in their owner-occupied high-rise condominium. Therefore, income level seems to be nodeterrent to misuse of property.

Acceptance of rules and regulations. The respondents were asked about their acceptance of rules and regulations related to conduct expected from them in the condominium. Seventy-two percent answered that they readily accepted the rules and regulations. Only five of the respondents indicated that they vigorously objected to the rules and regulations. The rest of the respondents (26 percent) placed themselves in the middle of a five-point scale that ranged from very

Table 12
Abuse of Rules of Conduct and Facilities

Situations	Percent (N=260)			
	Frequently	Occasionally	Never	N/A**
Child/Adults Playing in Elevators	48	33	18	*
Residents Playing Stereos	27	36	36	*
Neighbors Making Noise	13	21	64	2
Residents Damaging Common Areas	26	29	42	3
Residents Misusing Incinerator	28	23	39	10
Residents Misusing Laundry	5	7	20	68
Parking Space Used by Others	34	31	32	3
Violating Rules of Modification	6	24	67	3
Keeping Domestic Animals	29	26	41	4

*Less than 1 percent.

**Includes not applicable or no answer.

readily accept to vigorously object. Although most residents acknowledged acceptance of rules of conduct and regulations for the condominium, they apparently did not comply with them since abuse of property and facilities were reported by a majority.

Social Aspects: Adjustment to Condominium Living

Figure 5 shows the distribution of the responses by residents when asked about their adjustment to high-rise condominium living. On a five-point scale, over two-thirds of the respondents (68 percent) indicated they very easily adjusted to life in a condominium.

Information prior to moving. The residents were asked if they thought they had adequate information about condominium living prior to moving into the condominium. Sixty-three percent answered positively.

Physical Aspects: Design Features of Common Areas and Facilities

Respondents were asked to evaluate the way in which several physical facilities of the condominium satisfy the family needs. A score of five points was assigned to excellent, four to good, three to satisfactory, two to less than satisfactory, and one to poor. The average score obtained for each of the facilities was 3.6 points. In other words, on the whole, the design features of the buildings' common areas and facilities rated between satisfactory and good. The distribution of respondents according to their ratings for each facility is shown in Table 13. The features of the building that were rated as good or excellent by more than 73 percent of the respondents were the overall size of the condominium, the outside lighting, and the outside of structure. The three aspects of the building that were considered poor or less than satisfactory by the largest number of the respondents (over 25 percent) were the elevators, trash

Figure 5
Adjustment to High-Rise Condominium Living

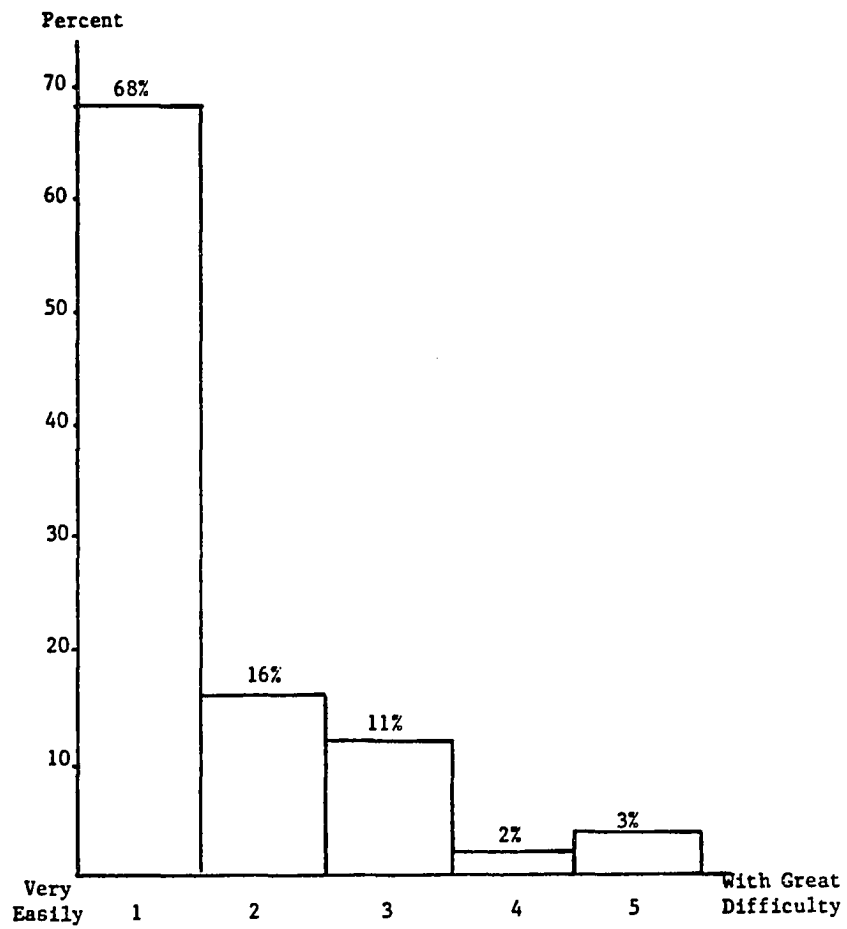


Table 13
 Evaluation of Design Features of Common Areas and
 Facilities in Meeting Occupant Needs

Features	Percent					N
	Excellent	Good	Satisfactory	Less Than Satisfactory	Poor	
Laundry	12	38	29	13	8	60
Play Area	16	35	24	10	15	216
Trash Disposal	14	33	27	8	18	253
Elevators	12	27	33	13	15	258
Corridors	20	39	25	7	9	259
Outside	34	39	18	3	6	258
Swimming Pool	23	40	19	9	9	212
Gym/Court	25	41	19	8	7	143
Club or Meeting Room	28	39	24	4	5	54
Outside Lighting	23	52	15	3	7	259
Lobby	26	41	21	6	6	254
Overall Size	39	44	12	4	1	259

disposal and play area. A majority of the condominiums did not have laundry, club house, or meeting-room facilities.

Physical Aspects: Design
Features of Apartment Space

The average score obtained for each design feature of the apartments was higher (4.2) than for the design features of the buildings (3.6). This means that the apartments were rated, in general, as good or somewhat better than good. Table 14 shows the ratings obtained for each apartment feature.

Five features of the apartment were classified as excellent by more than 80 percent of the respondents. In descending order of incidence, these were privacy, general lighting, location of apartment in the building, general apartment size, and view. All the apartment design features were rated as excellent or good by the vast majority of the respondents. Features that had highest incidence in the "poor" or "less than satisfactory" ranks were ease of watching children from the apartment, floor finish, work space in kitchen, and bathroom storage.

Environmental Aspects: Security

More than half of the respondents (56 percent) classified the security of the condominium as good or excellent (42 and 14 percent, respectively). One-fourth (25 percent) indicated that security was satisfactory, but 19 percent ranked security as less than satisfactory or poor.

Table 14
 Evaluation of Design Features of Apartment
 Space for Meeting Occupant Needs

Feature	Percent					N
	Excellent	Good	Satisfactory	Less Than Satisfactory	Poor	
Privacy	73	22	3	1	1	260
General Lighting	51	42	6	*	*	260
Kitchen Storage	40	38	13	6	3	260
Bedroom Storage	47	37	12	3	1	260
Bathroom Storage	33	33	16	8	10	257
Location of Building	54	35	9	1	1	200
Ease of Watching Children	38	31	12	9	10	207
View	52	30	11	2	5	260
Floor Finish	33	33	16	9	9	256
Wall Surface	31	40	16	5	8	259
Noise	40	34	11	6	9	247
Electricity Outlets	49	42	8	*	*	258
Temperature	40	32	17	5	6	258
Arrangement of Room	45	45	7	2	1	258
Windows	40	39	11	4	6	260
Kitchen Work Space	31	32	20	6	11	260
Location of Bath	44	47	8	*	*	260
General Apartment Size	51	38	10	*	*	260

*Less than 1 percent.

Environmental Aspects: Accessibility to Community Facilities and Services

In general, the accessibility of the condominium was considered very good. The mean score for all facilities and services included in the accessibility section of the study, using a scale from one to five, was 4.4 or very good. More than 90 percent of the respondents rated as good or excellent the condominium accessibility in relation to schools, shopping centers, medical services, and grocery shopping. More than half of the respondents considered their access to schools, shopping centers, medical centers, grocery shopping, churches, and work centers to be excellent. Public transportation and access to recreation/entertainment centers had highest incidence in the less than satisfactory or poor ranks. This was not an unexpected finding since the public transportation system in San Juan is limited and recreation and entertainment centers are few.

Environmental Aspects: Neighborhood

Characteristics of the neighborhood were identified using a semantic scale that described various elements of the environment. Table 15 shows results. In general, the neighborhood was considered to be good, with a mean score for all aspects of 26. As to detail, the neighborhood was considered quiet, attractive, well kept, pleasant, with people similar to the respondent, and a very good place to live by the vast majority of the residents. Almost two-thirds of the residents (62 percent) considered that the people in their neighborhood were unfriendly. This may seem dichotomous to the description of the neighborhood as made up of people similar to the respondents. It

Table 15
Neighborhood Characteristics

Negative Characteristics	(N=260) Respondents by Percent					Positive Characteristics
	1	2	3	4	5	
Noisy	9	10	22	13	46	Quiet
Unattractive	4	3	24	18	51	Attractive
Unfriendly People	40	22	28	3	7	Friendly People
Poorly Kept Up	5	10	29	14	42	Well Kept Up
People Dissimilar To Me	7	7	32	19	35	People Similar To Me
Unpleasant	*	2	26	24	47	Pleasant
Very Poor Place To Live	4	5	14	10	67	Very Good Place To Live

*Less than 1 percent.

might be that in that sense, respondents referred to similarity in age, income, and occupation.

Analysis of Factors Influencing Residents'

Attitudes Toward High-Rise Condominium

Several types of statistical analysis were used to examine the individual and collective contribution of socioeconomic, housing-related, social, physical, and environmental factors toward explaining the variance of the residents' attitudes toward high-rise condominium living. The discussion of these is divided into four

subsections, according to the type of statistical analysis, namely, Kendall's tau-correlation coefficient, t-test, one-way analysis of variance, and step-wise regression analyses. The first three statistical analyses examined the individual contribution of the independent variables toward explaining the variance of the residents' attitudes toward high-rise condominium living. The step-wise regression analysis combined all of the independent variables, and examined their combined contributions to explaining the variance of the criterion variable. Table 16 shows the specific variables studied and the statistical techniques used to treat them.

Kendall's Tau Correlation

The relationship between attitude toward living in a high-rise condominium and several independent variables was measured using the Kendall's tau-correlation coefficient analysis. This type of correlation coefficient was used for all variables measured using an ordinal scale. Hinkle and others (1979:103) described Kendall's tau correlation (τ) as a special case of non-product moment coefficient in which both variables are measured in an ordinal scale and ranks are subsequently assigned to the scores. Table 17 shows that a significant relationship was found between residents' attitudes toward living in a high-rise condominium and several housing-related, social, physical, and environmental factors ($p < .01$). The direction and strength of the individual correlations were as follows:

1. A positive relationship ($r = 0.11$, $p < .01$) between the residents' attitudes toward high-rise condominium living and the length of apartment occupancy.

Table 16
 Socioeconomic, Housing-Related, Social, Physical,
 and Environmental Factors Studied and
 Statistical Techniques Utilized to
 Examine Their Contribution to
 Explaining the Variance in
 Attitude Toward
 Condominium
 Living

Variables	Type of Statistical Test Used
Socioeconomic:	
Sex of Reference Person	t-Test
Household Composition	ANOVA
Number of Children	ANOVA
Education of Reference Person	ANOVA
Education of Spouse	ANOVA
Occupation of Reference Person	ANOVA
Occupation of Spouse	ANOVA
Housing-Related:	
Length of Apartment Occupancy	r-coefficient
Intended Apartment Occupancy	t-Test
Housing Preference	t-Test
Type of Residence in Childhood	t-Test
Location of Residence in Childhood	ANOVA
Zone (Location of Condominium)	ANOVA
Social:	
Rules of Conduct	r-coefficient
Social Interaction Patterns Within Complex	r-coefficient
Knowledge of Condominium Concepts	r-coefficient
Number of Friends in Complex	r-coefficient
Participation in Issues	r-coefficient
Desire to be More Involved	ANOVA
Satisfaction With Management	ANOVA
Physical:	
Design Features of Common Areas	r-coefficient
Design Features of Apartment	r-coefficient

Table 16 (Continued)

Variables	Type of Statistical Test Used
Environmental:	
Accessibility	r-coefficient
Neighborhood	r-coefficient
Security	ANOVA
All Variables Above:	
Individual	Step-Wise Regression
Collective	Step-Wise Regression

Table 17

Intercorrelations of Housing-Related, Social,
Physical, and Environmental Factors and
Residents' Attitudes Toward High-Rise
Condominium Living

Factors	r	p	N
Housing-Related			
Length of Apartment Occupancy	0.11*	.007	258
Social			
Rules of Conduct	-0.15*	.001	260
Social Interaction	0.16*	.001	260
Knowledge of Concepts	0.15*	.001	260
Number of Friends	0.14*	.001	256
Participation in Issues	0.11*	.008	260
Physical			
Design Features of Building	0.33*	.001	260
Design Features of Apartment	0.34*	.001	260
Environmental			
Accessibility	0.15*	.001	260
Neighborhood	0.19*	.001	260

*Significant at .01 level.

2. A negative relationship ($r = -0.15$, $p < .01$) between residents' attitudes toward high-rise condominium living and their perceptions of disregard of rules of conduct and abuse of facilities by others.
3. A positive relationship ($r = 0.16$, $p < .01$) between residents' attitudes toward high-rise condominium living and their social interaction patterns within the complex.
4. A positive relationship ($r = 0.15$, $p < .01$) between residents' attitudes toward high-rise condominium living and their knowledge of condominium concepts.
5. A positive relationship ($r = 0.14$, $p < .01$) between residents' attitudes toward high-rise condominium living and the number of friends in condominium.
6. A positive relationship ($r = 0.11$, $p < .01$) between residents' attitudes toward high-rise condominium living and their participation in condominium issues.
7. A positive relationship ($r = 0.33$, $p < .01$) between residents' attitudes toward high-rise condominium living and the rating given to the buildings' physical features.
8. A positive relationship ($r = 0.34$, $p < .01$) between residents' attitudes toward high-rise condominium living and the rating given to the apartments' physical features.
9. A positive relationship ($r = 0.15$, $p < .01$) between residents' attitudes toward high-rise condominium living and the accessibility of the condominium to selected community facilities and services.

10. A positive relationship ($r = 0.19$, $p < .01$) between residents' attitudes toward high-rise condominium living and their conceptions of the neighborhood.

Even though all the relationships studied were statistically significant, strongest relationships were between residents' attitudes and their rating of the physical features of the building and apartment. Although the other relationships were found significant ($p < .01$), their r -values were low enough to lack substantive interest.

t-Test Analyses

To compare the differences in attitudes of people within different categories (grouped by various nominal variables) t-test analyses were done. Of three housing-related characteristics of the residents that were analyzed, two were statistically significant in terms of attitude. At the .01 level of significance, the mean attitude score for the residents who intended to occupy the condominium unit permanently was significantly higher than the mean attitude score of the group of residents who intended to occupy the condominium unit temporarily. There was a significant difference between the mean attitude score of the residents who preferred to live in a single-family dwelling and those who preferred a multi-family dwelling. This finding is in accordance with Michelson's (1977) research findings. There was no statistically significant difference between mean attitude score of the respondents grouped by type of residence during childhood and for the sex of the reference person. Table 18 shows the means, standard deviations, t -values, and probability for each of the variables that was analyzed by t-test.

Table 18
t-Values for Mean Attitude Scores on
Nominal Independent Variables

Variables	N	Mean Score	Standard Deviation	t-Value	Probability
Housing-Related					
Intended Apartment Occupancy					
Permanent	189	70.4	8.3	6.6*	0.000
Temporary	70	62.7	8.6		
Preference of Housing					
Single-Family	125	64.5	9.5	-6.9*	0.000
Multi-Family	132	71.8	7.3		
Type of Dwelling While Growing Up					
Single-Family	225	68.3	8.8	-0.01	0.999
Socioeconomic					
Sex of Reference					
Male	168	67.7	9.7	-1.35	0.177
Female	92	69.3	8.0		

*Significant at .01 level.

Analysis of Variance

Differences among residents' attitudes toward high-rise condominium living for some socioeconomic, housing-related, and environmental variables were statistically tested using the one-way analysis of variance technique at the .01 level of significance. The hypothesis to be tested for each independent variable was:

There is no significant difference in residents' attitudes toward high-rise condominium living among the categories for each variable.

F-ratios for each ANOVA using each independent variable are shown in Table 19. Scheffé' post-hoc tests were applied to those variables having a significant difference in attitude mean scores to determine which pair groups were significantly different at the .01 level. Analyses indicated the following:

Socioeconomic Variables

1. The null hypothesis stating no difference in residents' attitudes mean score among the household composition categories was accepted at the .01 level of significance. In other words, there was no significant difference in residents' attitudes toward condominium living among various categories of household composition.
2. The null hypothesis stating no difference in residents' attitude mean score according to number of children was accepted at the .01 level of significance. This means there was not a significant difference in residents' attitudes toward condominium living in respect to number of children in the household.
3. The null hypothesis stating no difference in residents' attitude mean scores among the levels of education of reference person was accepted at the .01 level of significance. Hence, there was not a significant difference in residents' attitudes toward condominium living among reference persons with different levels of education.

Table 19
 F-Ratios for Residents' Attitude Mean Scores
 Grouped by Selected Socioeconomic, Housing-
 Related, Social and Environmental
 Variables in ANOVA

Variables	ANOVA		
	D.F.	F-Ratio	F-Probability
Socioeconomic			
Household Composition	259	2.26	.063
Number of Children Under Age 10	258	1.29	.275
Education of Reference Person	250	2.21	.054
Education of Spouse	132	.40	.809
Occupation of Reference Person	257	1.57	.125
Occupation of Spouse	248	.78	.638
Housing-Related			
Location of Residence While Growing Up	257	.13	.942
Zone	259	4.85*	.000
Social			
Desire to be More Involved	259	1.85	.159
Satisfaction With Management	258	22.30*	.000
Environmental			
Security	255	10.63*	.000

*Significant at the .01 level.

4. The null hypothesis stating no difference in residents' attitude mean scores among the educational levels of spouse was accepted at the .01 level of significance. This indicates there was not a significant difference in residents' attitudes toward condominium living among spouses with different educational backgrounds.
5. The null hypothesis stating no difference in residents' attitude mean scores among the categories of occupation of reference persons was accepted at the .01 level of significance. This means there was not a significant difference in residents' attitudes toward condominium living among the reference persons according to occupation.
6. The null hypothesis stating no difference in residents' attitude mean scores among the categories of occupation of spouse was accepted at the .01 level of significance. This indicates there was not a significant difference in residents' attitudes toward condominium living among spouses according to occupation.

Housing-Related Variables

7. The null hypothesis stating no difference in residents' attitude mean scores among groups according to location of residence while growing up was accepted at the .01 level of significance. This means there was not a significant difference in residents' attitudes toward condominium living in respect to location of residence while growing up.

8. The null hypothesis stating no difference in residents' attitude mean scores according to location or zone of condominium was rejected at the .01 level of significance. In other words, there was a significant difference in residents' attitudes toward condominium living according to the zone in which the condominium of their residence is located. This finding supports those stated by Field (1975). When the Scheffé test was applied to each pair of possible groups, it was found that no two groups were significantly different (.01 level).

Social Variables

9. The null hypothesis stating no difference in residents' attitude mean scores according to their desire to be more involved in condominium issues was accepted at the .01 level of significance. Hence, there was not a significant difference in residents' attitudes toward condominium living according to their desires to be involved in condominium issues more, less, or the same as now.
10. The null hypothesis stating no significant difference in residents' attitude mean scores according to satisfaction with condominium management was rejected at the .01 level of significance. This indicates there was a significant difference in residents' attitudes toward condominium living among those satisfied, somewhat satisfied, and very dissatisfied with the management of their condominium complex. When the Scheffé test was applied to each pair of possible groups,

it was found that the attitudes of residents who were very dissatisfied significantly differed from the attitudes of residents who were somewhat satisfied and very satisfied ($p < .01$).

11. The null hypothesis stating no significant difference in residents' attitudes among groups according to their rating of security was rejected at the .01 level of significance. This means there was a significant difference in attitudes toward condominium living among groups who classified the security of their condominiums as excellent, good, satisfactory, less than satisfactory, and poor. When the Scheffé test was applied to each pair of possible groups (at .01 level), it was found that the attitudes of residents who ranked security as excellent significantly differed from residents who ranked security as satisfactory, less than satisfactory, or poor.

By ANOVA analysis, three variables were found to have a significant effect on residents' attitudes toward high-rise condominium living; they were zone or location of the condominium complex, satisfaction with management, and residents' ratings of security of the condominium. The different groups under each variable, the mean, and the standard deviation are shown in Table 20.

Table 20
 Frequency Distribution, Mean and Standard
 Deviation of Significantly Different
 Independent Variables in ANOVA

Variables	N	Attitude		Variable Group Significant in Scheffé
		Mean Score	Standard Deviation	
Zones				
1	23	1.94	.409	8, 10
2, 3, 4	29	1.66	.398	
5	36	1.52	.420	
6	38	1.63	.491	
7	37	1.86	5.18	8, 10
8	26	1.69	.414	
9	45	1.65	.418	
10	26	1.58	.509	
Satisfaction With Management				
1. Very Satisfied	91	71.92	.802	
2. Somewhat Satisfied	110	68.31	.805	
3. Very Dissatisfied	58	62.41	1.272	1, 2
Security				
1. Excellent	37	74.24	1.252	3, 4, 5
2. Good	109	69.74	.813	
3. Satisfactory	64	65.70	1.053	
4. Less Than Satisfactory	24	62.92	1.740	
5. Poor	24	63.73	2.271	

Step-Wise Multiple Regression Analyses

The step-wise multiple regression analysis was used in this study to examine the individual and collective contribution of the independent variables toward explaining the variance of the criterion

variable (residents' attitude toward high-rise condominiums). This technique was believed to be appropriate, because it permits the addition of new variables into the equation, one at a time, according to its relative importance in explaining the variability of the dependent variable. It also allows a general view of the specific contribution of each variable, the relationship among them, and the effect of the combination of two or more variables on prediction of the criterion variable.

Six step-wise regression analyses were done, including the following independent variables.

1. Socioeconomic Characteristics (SEC)

$$\text{AHC} = \text{NM} + \text{PC} + \text{AR} + \text{ES}$$

where

AHC = attitude toward high-rise condominium living

NM = number of members in household

PC = presence of children under age 10

0 = no children 1 = children present

AR = age of reference person

ES = employment of spouse

0 = work outside house 1 = no spouse or does not work outside house

2. Housing-Related Characteristics (HRC)

$$\text{AHC} = \text{LAO} + \text{IAO} + \text{PPR}$$

where

LAO = length of apartment occupancy

IAO = intended apartment occupancy

0 = temporary 1 = permanent

PPR = place of previous residence

1, 2 = metropolitan, 2, 4 = non-metropolitan

3. Social Aspects Condominium (SAC)

AHC = PCI + SM + KCC + RC

where

PCI = participation in condominium issues

SM = satisfaction with management

KCC= knowledge of condominium concepts

RC = rules of conduct

4. Physical Aspects of Condominium (PAC)

AHC = FRB + FRA

where

FRB = features related to building

FRA = features related to apartment

5. Environmental Aspects of Condominium (EAC)

AHC = SEC + ACC + NEI

where

SEC = security

ACC = accessibility

NEI = Neighborhood

6. AHC = SEC + HRC + SAC + PAC + EAC

where

AHC = attitude toward high-rise condominium living.

Table 21 shows the correlation matrix for all variables that were used in the regression. Analyses showed that several variables

Table 21
 Correlation Matrix for Variables in
 Multiple Regression Analyses
 (N=236)

	AHC	NM	PC	AR	ES	LAO	IAO	PPR	PCI	SM	KCC	RC	FRB	FRA	SEC	ACC	NEI
AHC	1.00																
NM	.38*	1.00															
PC	-.05	.39*	1.00														
AR	.21	-.09	.39*	1.00													
ES	-.13	.28*	.08	-.08	1.00												
LAO	.16	.02	-.12	.41*	.08	1.00											
IAO	.36*	.04	-.13*	.32*	.00	.26*	1.00										
PPR	.02	-.06	-.04	.07	.06	.01	-.08	1.00									
PCI	.15	.14	.02	.17	-.01	.20	.05	-.10	1.00								
SM	-.38*	.05	.08	.19	.05	-.07	-.13	-.08	-.03	1.00							
KCC	.18	.06	-.01	.08	.04	.21	.07	-.08	.41*	-.09	1.00						
RC	-.22	.09	.05	-.00	.06	.11	.01	-.08	.17	.36*	.04	1.00					
FRB	.48*	-.06	-.15	.21	-.07	.12	.14	.02	.05	.48*	.19	-.40*	1.00				
FRA	.49*	.07	-.01	.15	-.02	.21	.25	-.01	.11	.26*	.12	-.17	.50*	1.00			
SEC	-.36*	.04	.01	-.14	.04	-.13	-.15	.04	.06	.38*	-.13	.31*	-.45*	-.31	1.00		
ACC	.19	.05	.01	-.02	.11	.05	.07	.11	.09	.13	.06	-.04	.27*	.32*	-.28*	1.00	
NEI	.25*	.03	-.04	.17	.00	.10	.22	.04	.04	.34*	.02	-.30*	.31*	.37*	-.32*	.25*	1.00

*Significant at .01.

had a significant correlation coefficient of .40 or more (.01 level).

The correlation matrix showed:

1. A negative correlation of -.40 between rules of conduct and features related to building.
2. A positive correlation of .41 between age of reference person and length of apartment occupancy
3. A positive correlation of .41 between participation in condominium issues and knowledge of condominium concepts.
4. A negative correlation of -.45 between features related to building and security.
5. A positive correlation of .48 between attitude toward high-rise condominiums and features related to building.
6. A positive correlation of .48 between satisfaction with management and features related to building.
7. A positive correlation of .49 between attitude toward high-rise condominium and features related to apartment.
8. A positive correlation of .50 between features related to building and features related to apartment.

The variables most highly correlated with attitude toward high-rise condominium living were features of building and apartment, satisfaction with management, number of members in household, security, and intended length of apartment occupancy.

Table 22 presents a summary of the five step-wise regression analyses using the five categories of independent variables. The variables included in each for the first five regression analyses, the r-square, F-value, coefficient value, and the R^2 change for each

Table 22
Summary of Five Step-Wise Multiple Regression Analyses

Variables	(N=236)	R ²	F	B	R ² Change
Socioeconomic					
AR		.043	10.53*	.139	.043
ES		.056	6.88*	-2.854	.013
NM		.064	5.30*	.730	.008
Constant	61.12				
Standard Error	8.94				
Housing-Related					
IAO		.132	35.49*	7.115	.132
LAO		.136	18.41*	.161	.005
PPR		.137	12.24*	.385	.000
Constant	62.03				
Standard Error	8.58				
Social					
SM		.148	40.70*	-4.009	.148
KCC		.169	23.71*	1.243	.021
RC		.178	16.80*	-2.446	.009
PCI		.191	13.65*	.113	.013
Constant	73.55				
Standard Error	8.32				
Physical					
FRA		.245	75.83*	5.300	.245
FRB		.317	24.48*	4.070	.072
Constant	31.95				
Standard Error	7.62				
Environmental					
SEC		.133	35.76*	-2.445	.133
NEI		.153	21.05*	.302	.021
ACC		.157	14.43*	.127	.004
Constant	62.29				
Standard Error	8.48				

*Significant at .01 level.

step in the regression are shown. The percentages of explained variability for the first five step-wise regression analyses were

generally low (ranged from 6 percent to 31 percent). The standard error of the estimate for all step-wise multiple regressions was between 8.9 to 7.6. With a range on the attitude scale of 53 and a mean of 68.3, this standard error of the estimate is fairly high.

Step-wise multiple regression using socioeconomic variables.

The combination of all socioeconomic variables introduced into the prediction equation explained only 6 percent of the variability of the residents' attitudes toward condominiums. The socioeconomic variable that explained most of the variability was the AR (age of the reference person), with an R^2 of .043. The variable number of children under the age of ten years was left out of the prediction equation due to its F-value of .005.

Step-wise multiple regression using housing-related variables.

The first variable to enter the equation was intended apartment occupancy (IAO) with an R^2 of .132. Even though the second and third variables that entered the prediction equation were significant at .01, none of them contributed very much important information (the change in R^2 was less than 1 percent). The housing-related variable that was most significant in explaining the variance in attitude toward high-rise condominium living (13 percent) was the intended apartment occupancy (IAO).

Step-wise multiple regression using social aspects of the condominium. The R^2 for this regression equation, after four steps, was .191 with an F of 13.65, significant at the .01 level. Social aspects, such as satisfaction with management (SM), knowledge of condominium concepts (KCC), practice of rules of conduct (RC), and

participation in condominium issues (PCI), explained 19 percent of the variance in attitude toward high-rise condominium living. The variable that explained most of the variability was satisfaction with management (SM) with an R^2 equal to .148.

Step-wise multiple regression using physical aspects of condominium. From the first five prediction equations, the one which explained the highest percentage of variability in attitude was the one that included the variables: features related to the apartment (FRA) and features related to the building (FRB). After two steps, the physical aspects prediction equation resulted in 31 percent of the explained variability in attitude. The standard error of the estimate (7.62) was also the lowest of all variables treated by step-wise multiple regression. In other words, the combination of two physical variables explained 31 percent of the variability in attitude toward high-rise condominium living with a 95 percent confidence that the errors in prediction for a given resident's attitude will be less than ± 2 (7.62).

Step-wise multiple regression using environmental aspects of the condominium. The combination of three environmental aspects of condominiums explained 16 percent of the variability in attitude toward them. The most significant environmental variable for predicting residents' attitudes toward high-rise condominium living was security (SEC), contributing 13 percent of explained variability in attitude.

The prediction of attitudes by all independent variables. The combination of all socioeconomic, housing-related, social, physical,

and environmental variables was included in a step-wise regression analysis to determine which was the best prediction equation (Table 23). The model for this procedure was a linear equation by which the independent variables were combined in order to predict the score of the dependent variable (AHC). The following equation represents the linear model for the dependent variable AHC:

$$\text{AHC} = a + b_1 \text{ SEC} + b_2 \text{ HRC} + b_3 \text{ SAC} + b_4 \text{ PAC} + b_5 \text{ EAC} + \text{Error}$$

where

a = constant

SEC = socioeconomic characteristics

HRC = housing-related characteristics

SAC = social aspects of condominium

PAC = physical aspects of condominium

EAC = environmental aspects of condominium

b = weights

Including all variables under each of the aspects considered for attitude prediction, the equation as hypothesized will be:

$$\begin{aligned} \text{AHC} = a + b_1 \text{ AR} + b_2 \text{ ES} + b_3 \text{ NM} + b_4 \text{ PC} + b_5 \text{ LAO} + b_6 \text{ IAO} + \\ b_7 \text{ PPR} + b_8 \text{ SM} + b_9 \text{ KCC} + b_{10} \text{ RC} + b_{11} \text{ PCI} + b_{12} \text{ FRA} + \\ b_{13} \text{ FRB} + b_{14} \text{ SEC} + b_{15} \text{ NEI} + b_{16} \text{ ACC} + \text{Error}. \end{aligned}$$

The results of the step-wise regression analysis are summarized in Table 23. Fifteen of the variables having significant F-value were introduced into the equation; only the variable ACC was not included. The average amount of variance in the total score of residents' attitudes toward high-rise condominiums that was explained by

Table 23
 Summary of Step-wise Multiple Regression Analysis
 Of Attitude With Independent Variables

Independent Variables	R^2	F	B	R^2 Change
FRA	.245	75.83*	4.24	.245
FRB	.317	53.96*	2.32	.072
IAO	.374	46.17*	5.00	.057
SM	.397	37.95*	-1.87	.023
PCI	.406	31.41*	.65	.009
ES	.414	26.99*	-2.31	.009
SEC	.421	23.68*	- .82	.007
NM	.424	20.86*	.41	.003
KCC	.425	18.58*	.62	.001
LAO	.427	16.74*	- .95	.001
NEI	.428	15.23*	- .10	.001
RC	.429	13.94*	- .56	.000
PPR	.429	12.83*	.54	.000
PC	.429	11.86*	.40	.000
AR	.429	11.03*	.13	.000
Constant		= 43.60		
Standard Error		= 7.17		

*Significant at .01 alpha level.

the fifteen independent variables was 11.03 times as much as the average amount of variability that might be explained by a chance variable ($p < .001$). The variables--features related to the apartment, features related to the building, intended apartment occupancy, and satisfaction with management--were significant in accounting for the explained variance in attitude with an overall R^2 of .397 and an $F = 37.95$. The variables representing the physical aspects of the apartment and building (FRA, FRB) entered first and second into the prediction equation, and were responsible for explaining 32 percent of the variability in residents' attitudes toward high-rise condominium living. These two variables (FRA and FRB) contributed the most explained variability (32 percent) when compared to the total explained variability (43 percent) at the end of step 15.

Examination of the R^2 change in each step of the regression analysis showed that there was a relatively important change in R^2 from step 1 to step 4; from step 5 to step 15 the change in R^2 was less than .01.

The standard error of the estimate of the final step was 7.17. After step 4, when the equation contains only four variables of the 15, the standard error of the estimate was 7.19. The equation at step 4 was almost as accurate in predictive ability as it was in step 7. It indicates that the addition of the rest of the variables did not contribute very much important new information. So, the best regression equation for prediction may be considered the one at the end of step 4.

$$AHC = a + b_1 FRA + b_2 FRB + b_3 IAO + b_4 SM + \text{Error}$$

The best prediction equation contained two physical variables (FRA, FRB), one housing related variable (IAO), and one social variable (SM). The explained variability of the rest of the variables that entered into the equation was significant at the .01 level, but was not adding much more predictive power to it. This finding agreed with previous research done by Homebuilders Association (1972), Bussman Construction (1974), Egolf and Herrenkohl (1977), Michelson (1977), and Francescatto (1979).

In predicting residents' attitudes toward high-rise condominiums, the six multiple regression analyses had the following results:

1. When analyzed individually, the socioeconomic factors (regression analysis I), the housing-related factors (regression analysis II), the social factors (regression analysis III), the physical factors (regression analysis IV), and the environmental factors (regression analysis V) showed a relatively higher power of prediction than when analyzed collectively. Variables such as age of reference person (AR), knowledge of condominium concepts (KCC), security (SEC), and neighborhood (NEI) showed a relatively important contribution for explaining variability when the first five regression analyses were done. However, when all 15 independent variables were combined into a multiple regression analysis, their individual contribution to the total explained variability was reduced. This must be attributed to the fact that their unique importance in explaining variability was low.

2. The two most significant variables in prediction of attitude, both in the individual and collective regression analyses, were features of the apartment and features of the building. The residents rated the features of the apartment and building as good or excellent. An explanation for their moderately positive attitude may be obtained by the classical conditioning theory of attitude formation. This theory explains that favorable or unfavorable attitude is associated with liked and disliked stimuli. For the residents, the relatively high degree of satisfaction that the physical aspects of the condominium provided, conditioned the relatively positive attitude toward that form of dwelling.
3. In the sixth regression analysis, where all independent variables were included in the equation, the intended apartment occupancy, satisfaction with management, and participation in condominium issues did not account for a large amount of the variability in the attitude toward condominiums, but each of them interacted with either one or both of the physical aspects, and thereby increased the explanatory power.
4. The correlation matrix on page 103 shows almost the same correlation between AHC and number of members in household ($r = .38$), security ($r = -.36$), intended apartment occupancy ($r = .36$), and satisfaction with management ($r = -.38$). However, when number of members in household and security were

included in the equation after intended apartment occupancy and satisfaction with management, the percentage of explained variability was changed less than one. It shows that even though the four variables were almost equally related to the attitude toward condominiums, the sequential importance of satisfaction with management and intended apartment occupancy was higher.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The increase in multi-family housing construction in Puerto Rico and the stated preference of Puerto Ricans to live in a single-family detached dwelling were factors which contributed to the selection of the topic of this research: attitude toward high-rise condominiums in Puerto Rico. The objectives of the study were (1) to describe socioeconomic and housing-related characteristics of owner-residents of high-rise condominiums, (2) to analyze the social, physical, and environmental elements of high-rise condominium living, (3) to determine the residents' attitudes toward high-rise condominium living, and (4) to analyze the specific and collective contribution of those factors to the variance in attitude toward high-rise condominium living. A random stratified sample of 260 owner-occupied condominium units was drawn from the total of 273 high-rise condominium complexes in metropolitan San Juan. The data were collected by means of scheduled interviews during the months of October and November, 1980.

FindingsSocioeconomic Characteristics of Residents

The size of the household was small; 72 percent of the total residents interviewed had three or fewer members. The average number

of persons per household was 2.7. Slightly over half of the households were composed of married couples; about one-third were singles living alone. The extended family composition was observed for only 9 percent of the households. About one-fourth of the households had from one to three children under ten years of age. A majority of the reference persons were male, with an average age of 44 years. Fifty-eight percent of the households had a spouse present; the average age of the spouse was 41 years. Slightly over three-fourths of the households had no children under the age of ten years present. A typical husband-wife household was small (two or three members) with a male reference person whose age ranged between 26 years and 45 years, and a spouse the same age or younger.

Approximately half of the households (52 percent) had a yearly income of \$20,000 or more; 34 percent reported income higher than \$25,000. A majority of the reference persons and spouses were highly educated; 73 percent of the reference persons, and 61 percent of spouses had college degrees. Reference persons most frequently fell into three occupational groups, namely professional, managerial/official, and sales and/or service worker. Almost half of the spouses (46 percent) did not work outside the home. The most common types of employment of the spouses were professional and clerical.

Housing-Related Characteristics Of the Residents

The average length of apartment occupancy was just under five years. The range was less than one month to 20 years. Approximately 40 percent of the residents had lived in the apartment for five or

more years. Almost three-fourths of the residents considered the apartment permanent housing. When asked how long they planned to live in the apartment, more than half of the respondents indicated that they did not plan to move; approximately one-fourth were unsure; and another fourth answered in years, with a mean of 2.3 years of intended apartment occupancy.

Most of the respondents grew up in urban areas, about half in metropolitan, and a fourth in urban nonmetropolitan or suburban areas. Only 12 percent grew up in rural areas. About 90 percent of the respondents grew up in a single-family detached house.

The most common reasons for purchasing a condominium apartment, in order of preference, were security, accessibility to community facilities and services, and ease of maintenance. The least frequently mentioned reasons for purchasing a condominium were prestige and status, advantages of having people around, and privacy. Other frequently mentioned reasons for purchasing the condominium unit were economic reasons, apartment features, building features, neighborhood, change in family size, and change in family composition.

The three most frequently mentioned most-liked aspects of condominium living were, in order of importance, privacy, security, and accessibility. Among the least-liked aspects of condominium living, parking facilities, poor management, and cost of condominium unit appeared most frequently as major concerns. Neighbors, privacy, and physical design of apartment and the building seldom appeared among disliked aspects of the condominium.

The average purchase price of the condominium unit was \$45,937, with a range of \$14,000 to \$125,000. The average monthly payment was \$346; the highest, \$1,097. The monthly payment included principal, interest, insurance, and maintenance for all respondents; for 42 percent it also included taxes.

Residents' Attitudes Toward High-Rise Condominium Living

A majority of the residents had a moderately positive attitude toward high-rise condominium living. On a scale that ranged from 21 to 105, the scores ranged from 41 to 94. The analysis of the distribution of scores showed a larger proportion of the respondents grouped on the positive side of the scale. That is, more respondents had a moderately positive attitude toward high-rise condominium living than a negative one.

Attitude scale. Analysis of the mean scores of the Likert-type attitude scale showed a moderately positive attitude of respondents toward high-rise condominium living. A majority of the respondents agreed or strongly agreed that high-rise condominiums economically use land, require less maintenance time, and are safer than other forms of dwellings, did not believe that high-rise condominiums limit self-expression, are noisy, too crowded with people, or impersonal, which is indicative of positivism toward condominiums. A considerable majority of the respondents agreed or strongly agreed that high-rise condominiums are more hazardous than other types of dwellings in event of fire and preferred to own a single-family detached dwelling, which is indicative of negativism toward condominiums.

Aspects of High-Rise Condominium Living

Social aspects. Over one-fourth of the respondents were highly involved in condominium issues; about one-third were moderately involved; and over 40 percent were not involved. Two-thirds to three-fourths of the respondents were involved in three activities: (1) informing the administrator or the residents' committee about a personal or collective problem affecting the condominium; (2) discussing condominium problems frequently with more than one person; and (3) attending meetings of the residents in the condominium. Seventy percent of all residents desired to be involved in condominium issues to about the same extent that they were at the time of the interview.

Over two-thirds of the residents ranked low in participation in social interaction activities. The most common social interaction practices were to meet others in the complex for conversation in common areas and for dialogues in apartments. The least common social interactions were having meals in condominium facilities or apartments, participating in sports and games with other residents in the complex facilities, and going outside the complex for activities such as shopping, movies, and meals. The average number of friends in the condominium was six; about one-fifth of the residents indicated having no friends in the condominium. The average number of persons known in the condominium was 15.

One-third of the residents were very satisfied with management of the complex. Slightly less than one-half were somewhat satisfied and about one-fourth were very dissatisfied.

Most of the respondents (70 to 99 percent) had heard of all the concepts related to condominiums that were included in the schedule. A large majority of the respondents could have explained well the meaning of common areas, maintenance fee, and Board of Directors. The concepts, declaration and by-laws, operating budget, management contract, and Horizontal Property Act, could have been explained well by less than one-third of the respondents. About two-thirds of the residents indicated they had read carefully or somewhat carefully the documents before signing a contract.

Nine hypothetical situations depicting residents' violating the rules of conduct and/or misusing the facilities in the condominium were described to the respondents who were then asked if they had observed them frequently, occasionally, or never. Analysis of awareness of violations of rules of conduct and/or misuse of facilities in the condominium showed that a large majority of respondents frequently or occasionally observed children and adults playing with or in elevators; assigned parking space being utilized by unauthorized persons; residents playing stereos, musical instruments, radios, televisions, or amplifiers at a high volume; adults or children damaging furniture or equipment in common areas; and residents keeping animals in violation of sanitary regulations. By and large, respondents were not aware of other residents violating structural modifications nor of neighbors making noise due to furniture moving, or dropping objects. About three-fourths of all residents expressed that they readily accepted the rules and regulations regarding conduct expected from them in the condominium.

Over two-thirds of the residents indicated having made a very easy adjustment to high-rise condominium living. About the same number stated that they had adequate information about condominium living prior to moving in.

Physical aspects. Generally, physical design features of the building were rated between satisfactory and good. The overall size of the condominium, the outside lighting, and the outside structure received high ratings. Lowest ratings were attributed to the elevators, trash disposal, and play area.

The design features of the apartment obtained a higher average rating than the design features of the building. The apartment was rated, in general, as good or somewhat better than good. Features of the apartment which were considered excellent by a majority of the residents were privacy, location of the apartment in the building, the view, the general apartment size, and the general lighting. Features that were rated lower were ease of watching children from the apartment, bathroom storage, floor finish, and work space in the kitchen.

Environmental aspects. The security of the condominium was classified as good or excellent by over one-half of the residents. One-fourth of them rated it as satisfactory, and about one-fifth as less than satisfactory or poor.

The accessibility of the condominium to community facilities and services was considered very good in general. However, access to public transportation and to recreation/entertainment centers was considered less than satisfactory or poor.

The neighborhood was described as very good by most of the residents. A majority of them considered their neighborhood to be quiet, attractive, well kept, pleasant, occupied by people similar to them, and a very good place to live. However, people in the neighborhood were considered unfriendly by a majority of the residents.

Influence of Socioeconomic, Housing-Related,
Social, Physical, and Environmental Factors
On Residents' Attitudes Toward High-Rise
Condominium Living

The factors that were significantly associated with residents' attitudes toward high-rise condominium living were length of apartment occupancy, intended apartment occupancy, preference of dwelling type, zone of location of condominium, practice of rules of conduct, social interaction involvement, knowledge of condominium concepts, number of friends within the building, participation in condominium issues, satisfaction with management, features related to the apartment or building, accessibility, security, and neighborhood (Table 24).

Socioeconomic variables. There was no significant difference (.01 level) in mean attitude score among the reference persons according to gender. When the analysis of variance technique was applied to determine significant differences in attitude among groups according to household composition, number of children under the age of ten years, education of reference person, education of spouse, occupation of reference person, and occupation of

spouse, no significant F-ratio differences were found (.01 level). In other words, the attitude toward high-rise condominium living was not significantly different between the groups in any socio-economic variables.

Table 24

Factors Significantly Associated With Residents'
Attitudes Toward High-Rise Condominium Living

Variables	Finding
Housing-Related:	
Length of Apartment Occupancy	r = .11*
Intended Apartment Occupancy	t =6.6*
Preference of Dwelling Type	t =6.9*
Zone of Location of Condominium Complex	F =4.85*
Social:	
Practice of Rules of Conduct	r =-.15*
Social Interaction Involvement	r = .16*
Knowledge of Condominium Concepts	r = .15*
Number of Friends Within Complex	r = .14*
Participation in Condominium Issues	r = .11*
Satisfaction With Management	F =22.30*
Physical:	
Features Related to Apartment	r = .34*
Features Related to Building	r = .33*
Environmental:	
Accessibility	r = .15*
Security	F =10.63*
Neighborhood	r = .19*

* Significant at .01 level

Housing-related variables. A positive low relationship ($r = 0.16$, $p < .01$) was found between residents' attitudes and length of apartment occupancy. A significant (.01 level) difference on attitude was found among categories of the following variables: intended apartment occupancy (t -value = 6.9, $p < .0000$), and zone or location of condominium (F -ratio = 4.85, $p < .000$). The location and type of residence during childhood were not found to be significant variables influencing residents' attitudes toward high-rise condominium living.

Social variables. Significant relationships (.01 level) were found between attitude and rules of conduct ($r = -.15$), social interaction ($r = .16$), knowledge of condominium concepts ($r = .15$), number of friends in the complex ($r = .14$), and participation in condominium issues ($r = .11$). These relationships were weak and had no substantive association. Preferred degree of involvement in condominium issues was not a significant variable for a difference in attitude. A significant difference in attitude (F -value = 22.30, $p < .000$) was found among residents according to their satisfaction with the condominium management.

Physical variables. A positive relationship was found between residents' attitude ratings given to design features of both the apartment ($r = .34$, $p < .001$) and the building ($r = .33$, $p < .001$). These were the only physical variables considered.

Environmental variables. A positive relationship was found between the residents' attitudes and accessibility of the condominium ($r = .15, p < .001$), and description of the neighborhood ($r = .19, p < .001$). There was a significant difference in attitude among residents according to their ratings of security (F-ratio = 10.63, $p < .000$).

Collective contribution of variables on residents' attitudes toward high-rise condominium. A step-wise multiple regression analysis including 16 independent variables entered 15 of the variables with a significant F (.01 level) into the equation; accessibility was excluded. Forty-three percent of the explained variability in attitude was accounted for by the 15 variables, with an F-ratio of 11.03, significant at the .01 level. The standard error of the estimate at the fifteenth step was 7.17; the constant or intercept value was 43.60. An analysis of the changes in R^2 , the standard error of the estimate, the F-ratio significance, and the number of variables included after each step of the regression equation, indicated that the equation at step four was almost as accurate in predictive ability, and explained almost as much variability in attitude as the equation at step 15. Therefore, a good prediction equation included the four variables: rating given the apartment features and building features, residents' intentions to occupy the dwelling as temporary or permanent, and their satisfaction with the condominium management (R^2 equal to .397, a significant F-ratio of 37.95 at the .01 level,

and a standard error of the estimate of 7.19). This means that forty percent of the variability in attitude toward high-rise condominium living can be explained by these variables.

Conclusions

Conclusions based on the findings were as follows:

Findings of studies that have considered the macroenvironment as a whole are not always the best models to be used as a basis for recommendations for the improvement of living in high-rise condominiums. Accentuated differences among condominium complexes should be taken into account, as well as generalizing about specific problems, characteristics of residents, and their attitudes toward that form of living. Microenvironment- focused research of individual high-rise condominiums could provide insight into problems and situations unique to a particular setting.

The strength of the relationships between the independent and dependent variables was somewhat weak; the statistically significant variances were low; explained variability of the regression equation was 43 percent, so there is indication that other variables related to the environment and the residents which were not included in this study may also have influenced the residents' attitudes.

The preference for single-family detached housing, based on negative physical and social characteristics attributed to high-rise type of housing, was refuted by the findings of this study. Not all high-rise housing has limitations; neither do all occupants manifest a negative attitude toward that form of dwelling.

Recommendations

Based on the results obtained from this study, the following recommendations are made:

1. Future research should be conducted with residents and non-residents of high-rise condominiums to compare their attitudes in relation to this form of dwelling.
2. Since most of the negativism attributed to high-rise condominium living was refuted by the residents interviewed in this study, and since the construction of more high-rises is imminent in metropolitan San Juan, a campaign to educate the housing consumer in regard to rights and responsibilities of a condominium owner/occupant, advantages and disadvantages of high-rise condominiums, condominium concepts, and other relevant topics should be conducted by appropriate agencies. Results of the present study may be used as a basis for that educative program.
3. Differences in characteristics of the residents and the physical, social, and environmental aspects of condominium living found in this study justify recommending that local surveys with the purpose of identifying problems be conducted in individual condominiums. The problems unique to particular complexes may be used as bases for recommendations.
4. Due to finding that limited knowledge of condominium concepts and low participation in condominium issues existed, it is recommended that an education campaign be implemented

in condominiums, including topics such as definition, explanation, and application of condominium concepts, rights, and responsibilities of condominium owners and of the management.

5. At all levels of education, Home Economics programs should emphasize the housing area, especially education on topics related to high-rise condominium living, due to the trend to construct more of them in Puerto Rico, and to findings in this study that even persons currently in condominiums are ignorant of condominium concepts.
6. Information concerning likes and dislikes, attitudes, and reasons for purchasing condominiums should be made available to managers of condominiums, designers, and contractors. The residents expressed basic needs which should be taken into account for designing, building, and managing this form of housing. Hopefully, this will result in housing that better meets the needs and expectations of the Puerto Rican consumer of housing.

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APPENDIX A
CONDOMINIUM COMPLEXES AND UNITS
INCLUDED IN THE SAMPLE

Condominium Complexes and UnitsIncluded in the Sample

Zone	Condominium Complex	Number of Floors	Owner-Occupant	Sample
1	El Vigía	9	20	3
1	Victoria Plaza	19	31	4
1	Condado Gardens	10	32	4
1	Maga	8	15	2
1	Laguna Terrace	13	63	8
1	Condado Washington	12	13	2
2	Emajagua	9	16	2
2	Kings Court 78	10	27	4
2	Condominium Prila	10	42	5
2	Kings Court 76	9	34	4
3	Miramar	12	21	3
3	Miramar	10	19	2
3	El Laurel	9	16	2
4	Baldorioty Plaza	15	34	4
4	Santurce Tower	9	31	1
5	Racket Club	9	17	2
5	Surfside Mansions	16	106	14
5	Los Pinos	14	223	29
6	Concordia Gardens II	19	205	27
6	Green Village	10	78	10
7	Cadiz	16	55	7
7	Universitario	15	40	5
7	Segovia	23	132	17
8	El Jardín	11	66	12
8	San Ignacio	12	112	14
9	Torre de los Frailes	13	171	23
9	Torres de Caparra	14	27	4
9	Mansiones de Garden Hills	18	124	17
10	Riverside Plaza 1	20	214	29

APPENDIX B
INTERVIEW SCHEDULE
PERMISSION FORM

CONFIDENTIALRESIDENTS' ATTITUDES TOWARD HIGH-RISE CONDOMINIUM
QUESTIONNAIRE

I agree to participate in the High-Rise Condominium Residents'
Attitude Toward This Form of Dwelling Research study and understand
that all information given or activity observed will be confidential
and anonymous, unless written permission is given by me.

Signature

University of North Carolina at Greensboro
School of Home Economics

Confidential--Residents' Attitude Toward High-Rise Condominium
Schedule

1. Record Number _____
2. Interviewer _____
3. Zone _____
4. Floor _____
5. How long have you lived here? _____ Years _____ Months
6. Do you consider this residence temporary or permanent?
 _____ a. permanent _____ b. temporary
7. How much longer do you expect to remain here?
 _____ Years _____ Months
 _____ Do not plan to move
 _____ Unsure
8. When you next move, what type of housing will you probably move into?
 _____ Buy _____ Single-family
 _____ Rent _____ Multi-family
9. Why did you purchase a condominium unit instead of renting or buying another type of housing? (Rank three most important reasons) (Card 1)
 _____ a. Apartment features
 _____ b. Building features
 _____ c. Security
 _____ d. Accessibility
 _____ e. Neighborhood
 _____ f. Economic reasons
 _____ g. Ease of maintenance
 _____ h. Prestige or status
 _____ i. Advantage of having many people around
 _____ j. Change in family size
 _____ k. Change in family composition
 _____ l. Other, specify _____

10. Please indicate from this list the activities in which you participate. How often? Indicate from this list. (Card 2)
- Participate in parties and social activities for all condominium occupants.
- Meet others in the complex for chats in common areas.
- Meet others in the complex for chats in the apartments.
- Join in sports and games with other residents in the complex facilities.
- Go outside the complex with other residents for activities such as shopping, movies, meals, etc.
- Meet others in the complex for meals in condominium facilities or apartments.
11. Who are your friends in this condominium? _____
(Interviewer will indicate number.)
12. Apart from the people in your dwelling, how many people in the condominium would you say you know well enough to talk to?

13. How satisfied are you with the management of the development?
- a. Very satisfied
- b. Somewhat satisfied
- c. Very dissatisfied
14. Why do you feel that way? _____

15. Please indicate to what extent you know and can explain to me the following. Indicate the alternative from this card. (Card 3)
1. I have heard of it before, and can explain it very well.
 2. I have heard of it before, and can somewhat explain.
 3. I have heard of it before, but cannot explain.
 4. I have not heard of it before, but have an idea of what it means.
 5. I have not heard of it before, and have no idea of its meaning.
- Condominium declaration and by-laws
- Projected condominium fee
- Operating budget
- Management contract
- Homeowners' Association
- Board of Directors
- Common areas of the condominium
- Horizontal Property Law

16. To what extent did you read all condominium documents provided to you before signing a sales contract?

Carefully
 Somewhat Carefully
 Skimmed
 Do not apply, why _____

17. Now that you have lived here a while, do you think you had adequate information about condominium living prior to moving in?

Yes No

18. Please indicate if, in the past six months, you:

Yes	No	
<input type="checkbox"/>	<input type="checkbox"/>	Informed yourself about issues and problems in the condominium.
<input type="checkbox"/>	<input type="checkbox"/>	Discussed condominium problems frequently with more than one person?
<input type="checkbox"/>	<input type="checkbox"/>	Persuaded others to take a particular position on any area issue or problem in the condominium?
<input type="checkbox"/>	<input type="checkbox"/>	Attended meetings of the residents in the condominium?
<input type="checkbox"/>	<input type="checkbox"/>	Informed the administrator or the residents' committee about a personal or collective problem affecting the condominium?
<input type="checkbox"/>	<input type="checkbox"/>	Wrote letters or circulated literature, or held a home meeting about a particular issue in the condominium.
<input type="checkbox"/>	<input type="checkbox"/>	Belonged to one or more committees or organizations that take stands on issues or problems affecting the condominium?
<input type="checkbox"/>	<input type="checkbox"/>	Recommended to the administration or the residents' committee a solution to a problem or idea to improve the actual condition of the condominium?

19. Some people would like to be more involved than they are in activities that concern their condominium, while others would like to be less involved. How about you? Would you like to be more involved, less involved, or as you are now?

a. More involved
 b. Less involved
 c. Same as now

20. Have you experienced or been aware of any of the following situations in this condominium? Please indicate with what frequency. (Card 4)

a. Frequently B. Occasionally c. Never

- Children or adults playing with or in elevators.
 Residents playing stereos, musical instruments, radios, televisions, or amplifiers at a high volume.
 Neighbors making noise due to furniture moving, dropping heavy objects, etc.
 Residents or children damaging furniture or equipment in common areas.
 Residents misusing incinerator or facilities for garbage disposal.
 Residents misusing laundry facilities.
 Assigned parking space being utilized by unauthorized persons.
 Residents violating rules related to structural modifications or alterations (painting the exterior of their apartments, changing structural design, etc.).
 Residents keeping domestic animals in violation of sanitary regulations.
 Other, explain _____

21. How would you rate your adjustment to high-rise condominium living? Check on this scale from 1 to 5. (Card 5)

Very easily 1 2 3 4 5 With great difficulty

22. How do you accept the rules and regulations related to conduct expected from you in this condominium? (Card 6)

Very readily 1 2 3 4 5 Vigorously object

23. Please rate the following facilities of this condominium as excellent, satisfactory, less than satisfactory, or poor. Please use your own judgement. Think about the way in which each characteristic of the building and apartment satisfies your family needs. Remember to consider only the physical aspect of each of the following areas. (Card 7)

- | | |
|-----------------|---------------------------|
| a. excellent | d. less than satisfactory |
| b. good | e. poor |
| c. satisfactory | f. do not apply |
| | g. I don't know |

Common Areas Facilities

- Laundry facilities
 Play area
 Trash disposal (size, odor, incinerator)
 Elevators (size, service)
 Corridors (light, decoration)
 Outside of structure (color, design, location)
 Recreational facilities (specify) _____

Outside lighting
 Lobby
 Overall size of condominium

Design Features--Apartment

Privacy
 General lighting (source, placement, amount)
 Storage space in kitchen
 Storage space in bedroom
 Storage spece in bath
 Location of apartment in development
 Ease of watching children outside apartment
 View
 Floor finish
 Wall surface
 Noise (due to poor sound proofing of the apartment)
 Electrical outlets (location, number)
 Temperature (ventilation)
 Arrangement of rooms
 Number, size and place of windows
 Work space in kitchen
 Location of bathrooms
 General apartment size
 Other, specify _____

24. How would you classify the security of this condominium in general? (emergency plans, fire extenguishers, stairs, lobbys, fire alarms, lights, guards, etc.) (Card 7)

a. Excellent
 b. Good
 c. Satisfactory
 d. Less than satisfactory
 e. Poor
 f. I don't know

25. How would you classify your access to the following services? (Card 7)

Schools
 Shopping centers
 Medical services
 Recreation-Entertainment
 Grocery shopping
 Churches
 Work centers
 Public transportation

26. Here are some words and phrases which we would like you to use to describe this neighborhood as it seems to you. For example, if you think the neighborhood is noisy, please put a check mark next to the word noisy; if you think it is quiet, please put a check mark next to the word quiet; if you think it is somewhat in between, please put the check where you think it belongs.

Noisy	___	___	___	___	___	Quiet
Attractive	___	___	___	___	___	Unattractive
Unfriendly people	___	___	___	___	___	Friendly people
Poorly Kept up	___	___	___	___	___	Well Kept up
Pleasant	___	___	___	___	___	Unpleasant
People similar to me	___	___	___	___	___	People dissimilar to me
Very poor place to live	___	___	___	___	___	Very good place to live

27. What are the three least liked aspects of condominium living for you? Please rank them beginning with the feature you consider the poorest.

- ___ a. Physical structure of the apartment
- ___ b. Physical structure of the building
- ___ c. Management
- ___ d. Neighborhood (community)
- ___ e. Residents of the condominium
- ___ f. Noises
- ___ g. Amount of privacy
- ___ h. Cost
- ___ i. Parking facilities
- ___ j. Security
- ___ k. Neighbors (on the floor)
- ___ l. Crowding (number of people)
- ___ m. Poor maintenance
- ___ n. Lack of recreational facilities
- ___ o. Rules and regulations
- ___ p. Other, specify _____

28. What are the three aspects of the condominium that you like the most? Mention them in order of preference. (Card 10)

- ___ a. Apartment features
- ___ b. Building features
- ___ c. Management
- ___ d. Neighborhood
- ___ e. Residents of the condominium
- ___ f. Amount of privacy
- ___ g. Economic reasons
- ___ h. Parking facilities
- ___ i. Security
- ___ j. Neighbors (on the floor)

- k. Having many people around
- l. Recreational facilities
- m. Maintenance
- n. Rules and regulations
- o. Prestige or status
- p. Accessibility
- q. Other, specify _____

29. Please indicate for each of the following statements whether you agree or disagree with it. (Card 11)

- a. Strongly agree
- b. Agree
- c. Unsure
- d. Disagree
- e. Strongly disagree

- It is preferable to live in a high-density area.
- An important goal in my life is to own my own lot and house.
- People with children should not move into a high-rise condominium.
- Apartments in a high-rise condominium are generally too small.
- High-rise condominiums have inadequate maintenance.
- Nowadays, it is safer to live in a high-rise condominium than to live in another form of dwelling.
- High-rise condominiums provide opportunity for greater social contacts.
- High-rise condominiums are impersonal.
- Living in a high-rise condominium increases one's prestige and status.
- Living in a high-rise condominium requires less maintenance time.
- High-rise condominiums are an economical use of land.
- High-rise condominiums are as resistant to earthquakes as other housing.
- The ideal type of dwelling is a single-family detached house.
- Too many people are crowded into one building in a high-rise condominium.
- A high-rise condominium apartment purchase is a wise investment.
- High-rise condominiums have the advantage of providing an environment of independence from social pressures.
- High-rise condominiums limit self-expression.
- People who dislike noise should not move to condominiums.
- The management of high-rise condominiums is generally inadequate.
- It is an advantage to live in a place where there are rules and regulations for housing modifications rather than in a place where everyone can do what they want.
- A high-rise condominium is more hazardous when a fire occurs than are other forms of dwellings.

30. Interviewer: List all persons, including children, now living in the dwelling unit by their relation to the reference person or adult who makes decisions. Ask education only to reference and spouse. Indicate sex of reference person.

	31. Age	32. Education	33. Occupation
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____
7.	_____	_____	_____

34. As closely as you can estimate, please tell me the amount of your household's income from all sources the past year. Please indicate the letter of the group on this card that would indicate the amount of income. (Card 12)

\$ _____

35. Where did you live most of the time while you were growing up?

36. During that time, what type of housing did you usually live in?

_____ a. One-family
 _____ b. Multifamily

37. What was the cost of purchase of this apartment? \$ _____

38. What is your monthly payment? \$ _____

39. What does that include?

_____ a. Principal
 _____ b. Interest
 _____ c. Insurance
 _____ d. Maintenance
 _____ e. Taxes

APPENDIX C
HOME ECONOMICS STUDENTS WHO
PARTICIPATED AS INTERVIEWERS

Home Economic Students Who Participated as Interviewers

Acevedo Marisel	Matos Georgina
Alvira Myrna	Muñoz Gloria
Betancourt Evelyn	Muñoz Sylvia
Carrión Libertad	Quianes Minerva
Cruz Grisel	Rosa Gregoria
Feliciano Rosalyn	Rosario Melba
García Carmen	Rodríguez Martha
Hernández Marylin	Sierra Carmen
López Daysi	Vargas María
López Marta	Vázquez Isabel

APPENDIX D
LETTERS

The University of North Carolina
at Greensboro
School of Home Economics
September 22, 1980

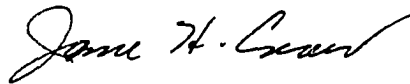
Condominium Manager
San Juan, Puerto Rico

Dear Sir:

Iris Jiménez de Ramírez, whose letter accompanies this one, is a doctoral graduate student at the University of North Carolina at Greensboro, and seeks your cooperation in a housing research study. It will be based on interviewing a random sample of owner occupants of high-rise condominiums in San Juan to determine attitudes toward high-rise condominium living and factors influencing these attitudes. All responses will be confidential and anonymous when handling results.

We will appreciate your assistance in this research.

Sincerely,



Jane H. Crow, Ph.D.
Professor and Chairman
Department of Housing, Management
and Family Economics

JHC/sws

23 de septiembre de 1980

Estimado Sr. Administrador,

Estudio el doctorado en vivienda en la Universidad de Carolina del Norte en Greensboro. Actualmente estoy escribiendo la tesis doctoral, el tema es "Actitud de los residentes en condominios multipisos hacia ese tipo de vivienda en el Area Metropolitana de San Juan." El condominio que usted administra fue seleccionado al azar como parte de una muestra para llevar a cabo el estudio.

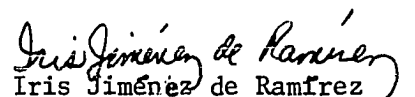
Por este medio solicitamos su autorización para llevar a cabo unas entrevistas a seleccionadas familias de ese condominio. Queremos hacer claro que el propósito de este estudio es educativo. La información recogida será estrictamente confidencial y usada por mi para analisis colectivo.

Los resultados del estudio podrían ser usados por ustedes si así lo solicitan. Sabemos que usted entenderá la importancia de este tipo de estudio en Puerto Rico para el mejoramiento de la calidad de vida en los condominios y para determinar las causas de una mala actitud hacia la vivienda en condominios.

Durante la primera semana de octubre pasaré por su oficina para recibir la autorización y explicar más detalles. Si tiene alguna pregunta, favor de llamar a la Escuela de Economía Doméstica de la Universidad de Puerto Rico y hablar con la directora, Sra. I. Brunet de Ramírez.

Su cooperación será muy importante para el éxito de este estudio. Muchas gracias.

Atentamente,


Iris Jiménez de Ramírez
Instructor, Universidad de
Puerto Rico y estudiante
doctoral de Universidad de
Carolina del Norte

Universidad de Puerto Rico
Recinto de Río Piedras
Escuela de Economía Doméstica

A: Residentes del Condominio _____

De: Iris Jiménez de Ramírez, Profesora Universidad de
Puerto Rico

Asunto: Estudio sobre aspectos relacionados con la vida en
condominios

Durante las próximas semanas un grupo de estudiantes de la Universidad de Puerto Rico visitará algunos apartamentos que han sido seleccionados al azar para hacer una pequeña entrevista al ama de casa. Esto es parte de un estudio que auspicia la Universidad de Puerto Rico en unión a la Universidad de Carolina del Norte en Greensboro. El tema del estudio es la relación entre los aspectos de la vida en condominio y la actitud de los residentes hacia ese tipo de vivienda.

Los resultados del estudio serán analizados en forma colectiva y de ser solicitados por ustedes, podrían servir de ayuda como referencia al bregar con los problemas del condominio.

La información recogida en la entrevista será confidencial. No se les preguntará nombres ni datos personales, solo algunos aspectos de la vida en condominio.

Le suplicamos su cooperación en este asunto. Su ayuda será el factor más importante para el éxito de este estudio. Las estudiantes estarán debidamente identificadas.

Muchas gracias por su cooperación.

APPENDIX E
CLASSIFICATION OF EMPLOYMENT

Classification of Employment

(From Nam and Powers, 1965)

Professional

- Accountants
- Architects
- Engineers
- Lawyers and Judges
- Librarians
- Mathematical Specialists
- Physical and Life Scientists
- Researchers
- Personnel and Labor Relations Workers
- Physicians, Dentists, and Related Practitioners
- Registered Nurses, Dieticians and Therapists
- Social Scientists
- Teachers, College and Universities
- Teachers, Primary and Secondary
- Writers, Artists

Managers and Administrators

- Assesors, Controllers and Treasurers--Public and Private Administration
- Bank Officers and Financial Managers
- Buyers and Shippers
- Credit Workers
- Administrators of Business, Health, Insurance Companies, etc.
- Construction Inspectors
- Managers and Superintendents--Educational, Public and Private Organizations
- Office Managers, Officials

Sales Workers

- Advertising Agents and Salesmen
- Auctioneers
- Demonstrators
- Insurance Agents, Brokers and Underwriters
- Real Estate Agents and Brokers
- Stock and Bond Salesmen
- Salesmen and Sales Clerks
- Sales Workers--Allocated

Service Workers

- Cleaning
- Food Service
- Health Services
- Personal Services
- Protective Services

Clerical and Kindred Workers

- Bank Tellers
- Billing Clerks
- Bookkeepers
- Cashiers
- Clerical Assistants, Social Welfare
- Collectors
- Enumerators and Interviewers
- Library Attendants and Assistants
- Mail Carriers and Handlers
- Messengers
- Office Machine Operators
- Receptionists
- Secretaries
- Shipping and Receiving Clerks
- Statistical Clerks
- Stenographers
- Stock Clerks and Storekeepers
- Telegraph Operators
- Telephone Operators
- Typists

Craftsmen, Operators, Foremen

- Automobile Accessories' Installers
- Bakery
- Cabinetmakers
- Carpet Installers
- Construction Craftsmen
- Decorators
- Electric Power Linemen and Cablemen
- Engravers
- Foremen
- Jewelers and Watchmakers
- Mechanics and Repairmen
- Metal Craftsmen
- Nullers
- Music Instrument Tuners
- Printing Craftsmen
- Shoe Repairmen
- Tailors

Operatives Workers

- Textile
- Winding
- Sawyers
- Sewers and Stitchers
- Precision Machines
- Packers and Wrappers
- Mine
- Metalworking
- Dyers
- Industry (manufacturing)
- Transportation (Boat, Bus, Railroad, etc.)

Technicians

Computer Specialists and Programmers

Health

Laboratory Workers

Owners of Business

Large-Scale

Small-Scale

Retired--Disabled--Students

Housewife

Housework Without Remuneration