LIFE CYCLE EFFECTS
ON RESIDENTIAL AREA EVALUATION

By

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A Thesis

Submitted to the School of Graduate Studies

in Partial Fulfillment of the Requirements

for the Degree

Doctor of Philosophy

McMaster University

October 1978

LIFE CYCLE EFFECTS ON RESIDENTIAL AREA EVALUATION

DOCTOR OF PHILOSOPHY (1978)
(Geography)

McMASTER UNIVERSITY
Hamilton, Ontario

TITLE: Life Cycle Effects on Residential Area Evaluation

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NUMBER OF PAGES: xiv; 228

ABSTRACT

This study examines the effects of the family life cycle on residential area evaluation. The analysis is based on a revised conceptualization of residential area evaluation that departs from previous research in two respects. First, life cycle status is hypothesized to affect two components of the evaluation process: residential area aspirations and the evaluation function. Residential area aspirations designate the attributes desired in the area immediately adjacent to a house. The evaluation function describes how aspirations are integrated with information about alternative areas. It is hypothesized that life cycle effects on the evaluation function result from changes in residential area aspirations through the life cycle. Second, the family life cycle is hypothesized to affect residential area aspirations through changes in leisure activities and differences in residential history.

These hypotheses were tested with data collected from a questionnaire survey of married women in Hamilton, Ontario. The sample was chosen to control for variations in social characteristics other than life cycle status. The relative importance of residential area aspirations was measured by explicit pairwise comparisons of 16 residential area attributes.

The results generally support the hypotheses, albeit weakly in some cases. Life cycle effects on residential area preferences were in

the expected direction, but they were not statistically significant. This was due to the bias introduced by using photographs to elicit preferences.

Life cycle status was found to have significant effects on both components of the evaluation process. The importance of eight residential area attributes was related significantly to stage in the life cycle. There was agreement through the life cycle on the most and least important residential area attributes. Life cycle effects on residential area aspirations reflected changes in child care responsibilities. Women who had completed the parental career assigned less importance to spaciousness. Access to shops and to people of similar social background assumed more importance. The accuracy of the linear compensatory evaluation function declined through the life cycle.

Changes in leisure activities through the life cycle were found to have a major influence on residential area aspirations. Specifically, the family life cycle affects aspirations through desires for local participation in leisure activities during the child-rearing stages of the life cycle. Changes in the desired frequency of participation in leisure activities through the life cycle primarily had an independent influence on aspirations.

Residential history was of minor importance in explaining the effects of life cycle status on residential area aspirations. Changes in the length of residence in owned and single family houses were the only aspects of residential history which contributed to life cycle effects on aspirations. The results suggest that the relationship between residential history and aspirations reported in previous studies is due

to variations in present housing type. In this study, where the majority of women lived in owned single family houses, prior residential experience had little effect on aspirations.

Overall, the results show that the family life cycle has significant effects on residential evaluation beyond its well documented influence on desires for dwelling space. Changes in family roles rather than household size emerged as the most important dimension of life cycle status. These life cycle effects extend beyond the transition from the childless to the child-rearing periods of the life cycle. The return to a childless household has equally significant effects on residential area evaluation. These results extend and clarify our understanding of the effects of the family life cycle on the evaluation of residential locations.

ACKNOWLEDGEMENTS

Formal acknowledgements can do little justice to the assistance I have received during the last four years. Certain people deserve special thanks.

Jeannie Bird and Lucy Krucko undertook many of the interviews. Their help enabled me to leave for Australia. Peter Waylen and Anita Weitzman have missed their true vocations. Their success at cajoling women to participate in the survey was remarkable. Charles Jones graciously provided the scaling programmes with much helpful advice on their application.

Usha Bella completed the graphics on very short notice. Sharon Wright translated my scrawl into typescript. Her cheerful assistance and willingness to type long hours into the night expedited the completion of this thesis. The quality of the manuscript was improved by careful proofreading on the part of Brent Hall.

Along the way, I met Mike Webber, Dave Hodge, Des McCafferty, Cathy Budd, Les King, Peter Hall, Liz Harman, Morton O'Kelly and Maria Papageorgiou. Their friendship has enriched the past six years. When Alice in Wonderland got mixed up with spatial choice behaviour, I found a friend who counselled me to keep the faith. Arden Brummell commented on every draft, listened to every vague idea, and always conjured up one more encouraging comment. Ruth Fincher has alternately prodded and applauded. Many phone calls later, we are still arguing and discussing. Her [illegible] to the [illegible] of Cha[illegible]1 [illegible]nd 2.

I have been most fortunate in the members of my supervisory committee. Ellen Derow introduced me to urban sociology. Her fresh view point, detailed comments and hard work have contributed to the clarity and originality of this thesis. Her humour and understanding helped me combat the loneliness. Yorgo Papageorgiou was instrumental in the beginning of this research and nursed it to a successful conclusion. I value his friendship. The quality of his work sets a standard I can only strive for. Without Martin Taylor, this research would never have been completed. Martin read every draft, oversaw every step of the survey and analysis, mopped up the tears, and introduced order into my personal and intellectual muddles. I hope that someday I will give to my own students the intellectual guidance and friendship that he has extended to me.

In the midst of his own dissertation, Joe Cox compiled the bibliography and tables. He shared the difficulties and successes every step of the way. Despite his best efforts, I will never be an economist, but he has encouraged me to be a better geographer.

I am indebted to the women who interrupted their busy lives to participate in the survey. Their help was essential to the success of this research.

Canada Council and McMaster University funded my graduate education. An Arts Council Research Grand from McMaster University enabled me to complete the analysis.

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CHAPTER 1

INTRODUCTION

This dissertation originates in continuing efforts to explain residential relocation within urban areas. Recent investigations of residential relocation have highlighted the significant influence of social and personality characteristics on the decision to move and the selection of a house. These characteristics are seen to have two effects on behaviour. They predispose people to undertake specific actions, and, simultaneously, they restrict the ability to act upon these predispositions.

Four social characteristics: social class, ethnicity, life style, and life cycle status have been proposed as important determinants of residential relocation (Moore, 1972). Of these four characteristics, *life cycle status* which describes a person's participation in the family (Feldman and Feldman, 1975) is a particularly important dimension of social structure. The family life cycle describes the changing nature of family participation during a person's lifetime as a progression through a sequence of family roles. These roles specify the behaviour expected in all spheres of family participation ranging from homemaking and child socialization to recreation (Nye and Grecase, 1976).

The significance of life cycle status cannot be overemphasized. Family participation describes the social relationships that are most

that family participation is central to personal development (Aldous, 1978; Vander Zaden, 1978). Moreover, the effects of family participation are cumulative. The nature of family participation early in the life cycle influences the later enactment of family roles.

Life cycle status has important consequences for everyday behaviour. Although each person's enactment of family roles is unique, a commonality of behavioural expectations can be identified to varying degrees for each family role. These behavioural expectations have a farreaching influence on residential relocation. In so far as residential desires reflect the behavioural expectations associated with family roles, life cycle status influences both the decision to move and the selection of a house.

The importance of life cycle status has been observed consistently in residential mobility studies. The relationship between life cycle status and the decision to move is so well documented that Quigley and Weinberg (1977, 50) remarked,

> There is widespread agreement that the most important determinant of residential mobility is the family life cycle.

In the same vein, Brummell (1977, 22) noted

> The importance of life cycle factors has been confirmed in a wide range of empirical studies (Butler *et al.*, 1969; Speare, 1970; Long, 1973; see Shaw, 1975 for a comprehensive review). The results have been so consistent that the relationship has now taken on the status of an empirical law.

Equally significant life cycle effects on the selection of a house have been observed. In par[illegible] life [illegible] has [illegible]

1961; Simmons, 1968; Timms, 1971).

However, the relationship between life cycle status and residential relocation has not been investigated extensively. Research has not progressed far beyond the obvious conclusion that increased household size is associated with desires for more dwelling space. Given that household size is only one aspect of life cycle status, the possibility that life cycle status influences residential desires other than dwelling space needs to be examined.

There is increasing evidence that dwelling space is only one of several housing characteristics which are considered in residential relocation decisions (Rossi, 1955; Harman, 1975; Michelson, 1977). Conditions in the residential area surrounding a house have emerged as important factors in both the decision to move and the selection of a house (Ginsberg, 1971). A nation-wide survey in the United States reported that the majority of people preferred a lower quality house in a good area to a better quality house in a less attractive area (Butler *et al.*, 1969). Rossi (1955) found that conditions in the residential area were second only to dwelling space as the reason for a residential move.

In the light of this evidence, life cycle effects on residential area evaluation warrant further investigation. Life cycle status has been shown to affect both the desirability of residential areas (Troy, 1973; Hourihan, 1975) and the desirability of specific residential area characteristics (Michelson, 1967; Cottrell, 1975; Hourihan, 1975). However, these findings are incomplete in two respects.

First, the process of residential area evaluation has not been detailed. *It is not clear how variations in the desirability of individual*

residential area characteristics influence the overall desirability of a residential area. For example, Michelson (1967) found that the desirability of large lots and residential land uses varies through the life cycle. The extent to which such differences are reflected in differences among life cycle groups in the overall desirability of residential areas is unclear (Troy, 1973; Hourihan, 1975).

Furthermore, the *relative* nature of evaluation has not been considered in many studies. The desirability of residential areas cannot be determined independently of the available alternatives. Similarly, the desirability of a single characteristic cannot be judged without consideration of other salient characteristics. Disregard of the relative nature of evaluation contributes to the present contradictory findings. Lansing and Hendricks (1967) reported that upkeep in an area was the most important determinant of residential area desirability, whereas Hinshaw and Allot (1972) found safety to be most important.

Second, the existing evidence does not explain how changing family participation affects the evaluation of residential areas. The links between changes in behavioural expectations through the life cycle and residential area evaluation have not been elucidated. Consequently, the independent effects of life cycle status cannot be ascertained.

This problem is apparent when the findings of different studies are compared. Troy (1973) found significant differences in the perceived desirability of residential areas between owners and renters. He also reported that life cycle status has significant effects on residential area evaluation. Younger people judge their present area less desirable than older residents in the same area. Yet, Michelson (1977) and Pick

(1973) have reported that type of tenure is related to life cycle status. Early in the life cycle, people are more likely to live in rented accommocation. It is not clear if the findings reported by Troy (1973) describe the independent effects of life cycle status or the combined effects of both type of tenure and life cycle status.

A comprehensive examination of the effects of life cycle status on residential area evaluation is required to resolve these uncertainties. Hence, this investigation must address two questions. How do people judge the desirability of residential areas? Second how does family participation influence this evaluation process? A study addressing these two questions will advance the present understanding of the effects of life cycle status on residential relocation. More generally, this study will contribute to ongoing efforts to determine how behaviour in the urban environment changes through the life cycle.

Specifically, the major aim of this dissertation is to examine *the nature and extent of the effects of life cycle on residential area evaluation.* This objective is accomplished by an empirical analysis of the residential area evaluations of women in different periods of the family life cycle. This analysis is based on a conceptual framework which synthesizes previous work on residential area evaluation with findings from recent studies of activity patterns in urban areas.

1.1 Overview of the Study

The conceptual framework employed in this study is derived from recent efforts to model the decision-making behaviour of people moving within the urban area (Wolpert, 1965; Brown and Moore, 1970). Two

assumptions about human information-processing abilities are fundamental to this conceptualization of residential relocation. It is assumed that people base decisions on their subjective information about the environment. This subjective information is incomplete and frequently distorted. Moreover, it is recognized that the ability to process information is limited. Thus, it is assumed that people are intendedly rational. Within the constraints imposed by limited computational abilities, people seek the optimum choice according to their subjective information (Wolpert, 1965).

The *residential area* is seen as a bundle of attributes which describe both tangible and intangible characteristics in the environs of a house. The spatial extent of this area has been defined by a variety of criteria. In this study, the present residential area delimits the area around the house where a person feels at home (Lee, 1968; Tuite, 1974).

The *evaluation process* is assumed to consist of two parts:

i) aspirations; and

ii) an evaluation function.

Aspirations specify the conditions desired in a residential area in terms of individual attributes. The *evaluation function* describes how information about an area is integrated into judgements of its overall desirability. Thus, residential area evaluation describes how perceived conditions in a residential area are compared with aspirations. A *preference* ordering describing the relative desirability of alternative areas results from this evaluation process.

The family life cycle is thought to influence aspirations (Wolpert, 1965; Moore, 1972) which in turn are seen to affect the nature of the

evaluation function. Thus, life cycle status is thought to have significant effects on both parts of the evaluation process.

The nature of these life cycle effects is clarified by recent findings from studies of activity patterns in urban areas. The residential area is considered as an opportunity field which supports different behaviours with varying success (Michelson, 1977, 27). The attributes present in the residential area determine the extent that it hampers and supports desired behaviours. Thus, aspirations reflect beliefs about the extent that individual attributes are judged to support desired behaviours. These beliefs are based on previous residential experiences, on observations of the residential experiences of others, and on prevailing social expectations regarding behaviour in particular residential settings.

As a person progresses through the life cycle, new family roles are enacted. Consequently, the propensity to engage in activities changes through the life cycle (Szalai, 1972; Chapin, 1974; Rapoport and Rapoport, 1975). Recent studies of activity patterns have highlighted the importance of the residential area as a setting for everyday activities (Michelson, 1977; Chapin, 1974). This leads to the hypothesis that the family life cycle affects residential area aspirations through changes in propensities to engage in various activities.

Secondly, there are systematic variations in residential experience through the life cycle (Moore, 1972; Quigley and Moore, 1977). People respond to changes in family roles by moving to residential areas that support changed propensities to engage in activities. Since aspirations partly derive from previous residential experiences, it is hypothesized

through changes in residential history.

The usefulness of this conceptual framework is examined by an empirical study which compares the residential area evaluations of women in different periods of the life cycle. Child-rearing responsibilities are postulated as the basis of life cycle effects on residential area evaluation. Consequently, life cycle status is defined by the ages and presence of children in the household.

The empirical study is organized around seven hypotheses. Hypothesis 1 states that life cycle status has significant effects on residential area preferences. The next two hypotheses examine the relationship between life cycle status and each component of the evaluation process. Hypothesis 2 postulates a direct relationship between life cycle status and residential area aspirations. Tests of this hypothesis indicate the extent that changes in residential area aspirations through the life cycle contribute to life cycle effects on residential area preferences.

The third hypothesis follows from the investigation of life cycle effects on residential area aspirations and examines the relationship between life cycle status and the predictive accuracy of one evaluation function. The accuracy of the evaluation function measures how well the function represents the process by which information about residential areas is integrated into preferences. The linear compensatory evaluation function is investigated because of its frequent application in the analysis of spatial choices (Demko and Briggs, 1971; Burnett, 1973; Hall, 1976). Hypothesis 3 states that the predictive accuracy of this evaluation function varies through the life cycle.

Tests of Hypotheses 1, 2 and 3 will indicate how the formation of

residential area preferences is related to life cycle status. The findings from this empirical analysis address the question of how people judge the desirability of residential areas. The remaining hypotheses elucidate the effects of family participation on residential area evaluation.

Changes in propensities to engage in leisure activities and differences in residential history are proposed as the basis of life cycle effects on residential area aspirations. Thus, Hypothesis 4 examines the relationship between life cycle status and participation in leisure activities. In Hypothesis 5, the effects of life cycle status on residential history are investigated. Hypotheses 6 and 7 examine the extent that leisure activities and residential history are related to residential area aspirations. Tests of these four hypotheses will indicate the extent that the family life cycle affects residential area aspirations through propensities to engage in activities and residential history. The mechanisms by which family participation affects residential area evaluation will be clarified.

Residential area aspirations are central to this study. However, aspirations refer to unobservable beliefs. A valid method of eliciting information about these beliefs is required to investigate life cycle effects on residential area evaluation. To this end, a methodology developed in psychotherapy which has recently found widespread use in the field of environmental cognition is applied in this study. Information about residential area aspirations is obtained by explicit pairwise comparisons of residential area attributes. The simplicity of this task and its reasonable data requirements avoid the problems of more common

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provides a valid description of residential area aspirations that are central to this study.

1.2 Organization of the Study

This study consists of three sections: the conceptual framework, the research design, and the results. The relationships between life cycle status and residential area evaluation are specified in Chapter 2. An expanded conceptualization of residential area evaluation is briefly outlined. The importance of life cycle effects on residential area evaluation is established by reference to existing evidence that social characteristics influence evaluation. Previous findings which describe the effects of life cycle status on residential area evaluation are critically reviewed. Two major problems in our present understanding of these life cycle effects are identified. The remainder of the chapter details the proposed links between life cycle status and residential area evaluation.

Chapters 3 and 4 outline the research design. The hypotheses are specified in Chapter 3 where operational definitions of each concept are proposed. The following chapter describes the survey instrument and sample design.

The results are presented in Chapters 5 and 6. In Chapter 5, the direct effects of life cycle status on residential area evaluation as they are revealed in the data are examined. Chapter 6 discusses the evidence that the family life cycle affects residential area evaluation through changes in leisure activities and residential history. In the final

of the empirical findings. The implications of these findings for our understanding of the observed relationship between life cycle status and residential relocation are explored.

CHAPTER 2

LIFE CYCLE STATUS AND RESIDENTIAL AREA EVALUATION

A conceptual framework is presented in this chapter as a basis for examining the effects of life cycle status on residential area evaluation. The framework synthesizes an existing conceptualization of residential evaluation with recent findings from time budget studies which detail the effects of social and personality characteristics on behaviour in residential areas. The empirical investigation of life cycle effects on residential area evaluation is based on hypotheses developed from this conceptual framework. These hypotheses address the questions posed in Chapter 1 concerning the direct effects of life cycle status on the evaluation process and the impact of changing family participation on residential area evaluation.

The framework is discussed in three parts. First, the components of residential area evaluation are defined within the context of the residential choice process. Second, the present state of knowledge of the effects of social characteristics and, particularly, life cycle status on evaluation is reviewed. Finally, the role of leisure activities and residential history as factors linking life cycle status and residential area evaluation is detailed.

2.1 The Conceptual Framework

The conceptual framework is presented in Figure 2.1 and the major components are defined in this section. The framework begins from the conceptualization of residential choice proposed by Brown and Moore (1970) which specifies the role of residential evaluation in the selection of a house. The effects of social and personality characteristics are elaborated by incorporating recent findings from studies of activity patterns (Michelson, 1977) in residential areas. These findings suggest how social characteristics influence residential area evaluation.

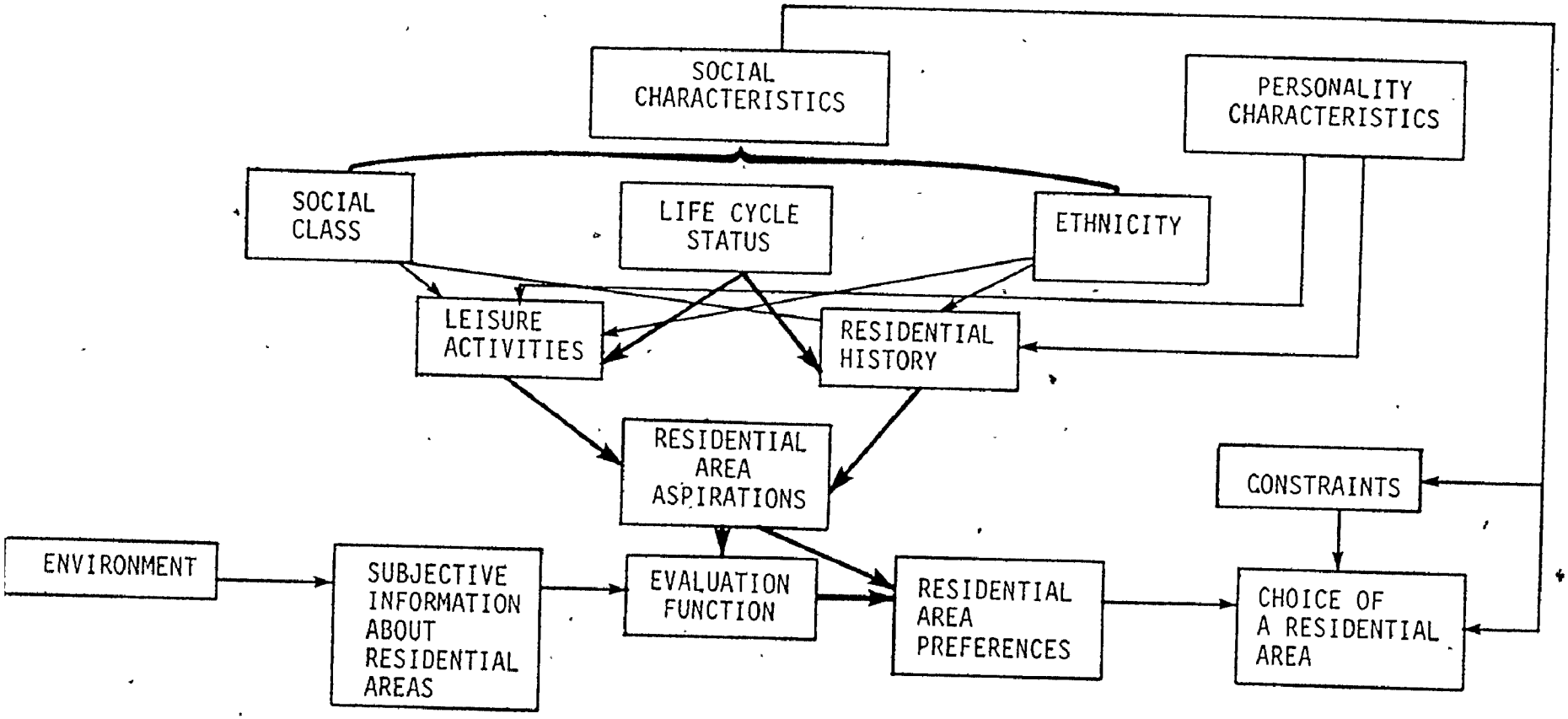
The conceptual framework begins with the *environment* which includes all people and objects external to a person. In this conceptual framework the objects of concern are generally at the scale of buildings and residential lots in an urban area. Furthermore, attention is focussed on one part of the urban environment: the objects and people which comprise residential areas. A *residential area* includes the social, built and natural features within the environs of a house. Thus, this study focusses on the evaluation of conditions within the residential area.

The residential area is apprehended as a bundle of attributes which refer to tangible and intangible features of the area. The nature of these attributes and the perceived level of each attribute in an area comprise a person's *subjective information* about an area. This subjective information is acquired directly from interactions with the environment and indirectly from second hand sources such as newspapers and personal contacts.

This information is the basis of residential area evaluation.

FIGURE 2.1

RESIDENTIAL AREA CHOICE



→ Denotes the major links of the conceptual framework.

of life cycle effects on residential area evaluation. First, it is assumed that the information about residential areas is fixed. The search process by which people identify alternative residential areas and acquire information about them is not considered. The evaluation of a fixed set of residential areas is discussed. By this means, life cycle effects on residential area evaluation are distinguished from possible biases in the search process related to life cycle status.

Furthermore, it is assumed that residential areas are evaluated in terms of a fixed set of attributes. Although individual differences in neighbourhood cognition have been reported (Tuite, 1974; Harman, 1975), attributes mentioned by the majority of respondents have been identified.[1] Consequently, the residential area attributes which are considered in residential area evaluation are not investigated. This examination of residential area evaluation is based on the residential area attributes mentioned most frequently in previous studies of residential and neighbourhood cognition.

The *evaluation process* is composed of two parts: aspirations and an evaluation function. *Aspirations* are the criteria of evaluation which act as standards for comparison. They specify the conditions desired in a residential area in terms of:

1) the attributes considered in residential area evaluation,

2) the desired levels of these attributes, and

3) the importance of these attributes. (Moore, 1972, 3)

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[1] Lloyd (1976) and Klahr (1969) have demonstrated that the attributes salient i the tion of al the

Although these aspirations may not be attainable in the near future, they describe the residential area that each person strives to attain (Michelson, 1977). Disparities between aspirations and perceived conditions in a residential area determine the desirability of the area. Furthermore, the nature of residential area aspirations affects the form of the evaluation function.

The *evaluation function* describes how subjective information concerning a residential area is compared with aspirations. It specifies the process by which information about each residential area attribute is integrated into a judgement of the overall desirability of an area (Dawes, 1975). The linear compensatory function in which all residential area attributes are considered simultaneously is applied most commonly (Demko and Briggs, 1971; Burnett, 1973; Hall, 1976) in studies of spatial choice behaviour. Several authors (Flowerdew, 1973; Harman, 1975; Burnett, 1978) have proposed that simpler evaluation functions are more appropriate for analysing residential evaluation. These include the lexicographic and conjunctive evaluation functions in which each residential area attribute is considered separately (Coombs, 1964).

Judgements of the overall desirability of residential areas are expressed as preferences. *Preferences* describe the relative desirability of an area in terms of its ranking relative to alternative areas (Menchik, 1972). Preferences are linked to residential area choices. However, *choice* reflects the interaction between preferences and personal circumstances. Financial, temporal and other constraints may influence the final choice (Honville, 1971). Thus, the choice of a residential area need not represent

accurately the preference rank assigned to the area.[2] The extent of individual differences in residential preferences must be assessed before the impact of these constraints can be determined.

An individual's social and personality characteristics are thought to influence various components of the evaluation process. Personality characteristics have been cited frequently as important influences on residential area evaluation,[3] but to date, they have not been empirically investigated. Research has focussed on the effects of social characteristics on residential evaluation. Specifically, four social characteristics: social class, life style, ethnic identity, and life cycle status have been postulated as important influences on residential area evaluation. Of these, as pointed out earlier in Chapter 1, life cycle status is the most important.

Life cycle status describes a person's participation in the family (Feldmand and Feldman, 1975) in terms of the sequence of family roles enacted through a person's lifetime. It is defined generally by

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[2] Clark (1976), Michelson (1977), and Brummell (1977) have emphasized this distinction between choices and preferences. They cite inadequate housing supply and financial constraints as major reasons for the disparity between preferences and observed choices. Hoinville (1971) has argued that choices are often contingent on other choices. Thus, one choice may reflect a previous choice more than it represents a preference ranking of the alternatives.

[3] Troy's (1973) vague discussion of the effects of personality differences on residential area evaluation is typical. Marshall (1970a, 1970b) has analysed the relationship between preferences for privacy and personality traits.

household composition.[4] Changes in household composition are assumed to signal significant changes in family participation (Norton, 1974). Studies of residential area evaluation reveal that changing child care responsibilities through the life cycle are the basis of life cycle effects on residential area evaluation. Bell (1958), Foote *et al.* (1960) and Michelson (1977) noted that the desirability of suburban residential areas is related to beliefs that the suburban area provides the best environment for raising children. Michelson (1977) found that the highest frequency of moves into suburban areas occurred after the birth of the first child. In general, the evidence is that child care responsibilities above all other aspects of life cycle status influence residential area evaluation.

The central thesis is that *life cycle effects on residential area evaluation are due to changes in residential area aspirations through the life cycle.* In other words, as a person progresses through the life cycle, the importance placed on evaluative criteria is thought to change. Moreover, aspirations affect the form of the evaluation function. As the amount of information considered in residential area evaluation increases, the task of integrating this information into preferences becomes more complex and it has been suggested that simpler evaluation functions are then substituted for the linear compensatory function (Einhorn, 1970;

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[4] There is agreement that life cycle status is described by four social characteristics: marital status, age, number of children in the household and ages of children (Feldman and Feldman, 1975; Norton, 1974). There is less agreement on the levels of these characteristics which signal significant changes in family participation. To define stages in the life cycle, a 'normal' or 'average' progression through different types of family participation must be assumed (Norton, 1974). Recently, more people have failed to complete this orderly progression. Moreover, different characteristics h een

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Pras and Summers, 1975). If this is the case, we should observe a decrease in the predictive accuracy of the linear compensatory function as the amount of information considered increases. This should be reflected in a decline in the correlation between preferences calculated from the linear compensatory evaluation function and elicited preferences. Since the number of attributes and, therefore, the amount of information considered in the evaluation process is related to life cycle status it is hypothesized that the predictive accuracy of the linear compensatory function is related to life cycle status.

It remains to explain how participation in the family affects residential area aspirations. To this end, it is suggested that changes in residential history and in leisure activity patterns account for life cycle effects on aspirations. A *leisure activity* is a set of individual acts grouped together in a general category, e.g. shopping includes travelling to a store, selecting merchandise, paying the cashier, etc. (Chapin, 1974). Leisure activities are voluntary activities performed largely at a person's discretion or "of their own free will" (Chapin, 1974, 37). Studies of time budgets have demonstrated that leisure activities are the major source of individual differences in time use (Chapin, 1974; Reed, 1976). Consequently, the activities considered in this study are primarily of a voluntary sort.

As a person progresses through the life cycle, new family roles are adopted which have significant effects on propensities to engage in leisure activities. These changes in preferences for leisure activities are postulated as the basis for changes in residential area aspirations to the extent that residential areas are evaluated in terms of the

opportunities they provide for participation in leisure activities.

Changes in residential history through the life cycle are postulated as the second mechanism by which family participation affects residential area aspirations. *Residential history* describes the sequence and duration of a person's residence in different types of dwellings and different residential areas. The variety of dwelling types experienced by each person has been identified (Michelson, 1969a) as a particularly important aspect of residential history.

As social expectations regarding behaviour change through the life cycle, alternative residential environments which provide more opportunities for these new behaviours are sought. Thus, changes in family roles through the life cycle give rise to variations in residential history through the life cycle. For example, the transition from the childless to the child-rearing periods of the life cycle is frequently accompanied by a move from downtown to suburban areas which provide more opportunities for family-oriented activities (Bell, 1958; Foote *et al.*, 1960; Michelson, 1977). Through the life cycle, these differences in residential history are thought to have a cumulative effect on residential area aspirations.

Residential area aspirations are beliefs derived from prior experience of residential areas. Aspirations are modified to take account of any disparities between anticipated conditions in an area and conditions experienced while living there. These disparities may include unexpected benefits as well as unsatisfactory conditions (Michelson, 1977, 31). Thus, it is hypothesized that changes in residential history through the life cycle give rise to life cycle effects on residential area aspirations.

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investigation of life cycle effects on residential area evaluation. The family life cycle is thought to affect residential area evaluation in so far as life cycle status is related to residential area aspirations. Changes in residential area aspirations through the life cycle are hypothesized to affect the formation of residential area preferences in two ways; 1) aspirations are integrated with information about each area in the evaluation functions and 2) aspirations affect the form of the evaluation function. Furthermore, it is hypothesized that life cycle effects on residential area aspirations arise from changes in propensities to undertake leisure activities and differences in residential history through the life cycle.

Thus, this conceptual framework addresses the two questions posed in Chapter 1 concerning the direct effects of life cycle status on residential area evaluation and the manner in which changing family participation affects evaluation. In the next section, the reasons for regarding life cycle status as the most important social characteristic affecting residential area evaluation are presented. This is followed by a review of the existing literature dealing with the effects of the family life cycle on residential area evaluation.

2.2 Social Characteristics and Residential Area Evaluation

Four social characteristics: social class, ethnicity, life style, and life cycle status have been proposed as major influences on residential area evaluation. The existing evidence shows that variations in residential area evaluation are due primarily to life style and life cycle

the formation of residential area preferences. In this section, the role of the first three social characteristics is discussed.

Social class may refer to a person's access to economic opportunities (Gerth and Mills, 1946). It may be operationalized as socioeconomic status which is a combination of income, occupation and education (Fischer, 1976). Although early studies reported significant differences in residential area evaluation related to social class (Fried and Gleicher, 1961; Gans, 1961; Rainwater, 1966), recent studies have found little evidence of this relationship (Michelson, 1967; Sanoff, 1970; Troy, 1973). These contradictory findings are due to the range of social classes represented in each study. Significant differences in residential area evaluation have been observed only when very disparate social classes; i.e. planning professionals and blue collar workers (Gans, 1961; Fried and Gleicher, 1961) have been compared. Among a more homogeneous sample (Harman, 1975) and within larger samples representing a wide range of social classes (Troy, 1973), these social class differences have not appeared. On the basis of this evidence, several authors (Michelson, 1967; Troy, 1973) have concluded that social class is of secondary importance in residential area evaluation.

The evidence that ethnicity influences residential area evaluation is equally incomplete. The desirability of selected residential area characteristics has been shown to vary between blacks and whites (Sanoff, 1970; Flachsbart and Peterson, 1973); however, residential area preferences are not related to ethnic identity (Butler *et al.*, 1969; Sanoff, 1970). Although Sanoff and Sawhney (1972) suggested that the distinctive life

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they found no evidence to support this claim. Butler *et al.* (1969) concluded that due to the operation of discriminatory housing markets, ethnic identity restricts residential choices, but it has only a minor influence on residential area evaluation.

Life style refers to the configuration of roles that a person chooses to emphasize from a large number of possibilities open to those of similar social characteristics (Michelson and Reed, 1970). Life styles are identified by observing consumption patterns and activity patterns (Reed, 1976). They result from the interaction between several social characteristics including life cycle status, social class and ethnic identity, and opportunities for performing behaviours.

Life style has been shown to have significant effects on residential area evaluation in several studies (Bell, 1958; Michelson, 1967; Reed, 1976). Both the perceived desirability of selected residential area characteristics (Bell, 1958; Michelson, 1967) and residential area preferences (Reed, 1976) are related to life style. In this study, the effects of life style on residential area evaluation are considered indirectly. Life cycle status is one of several social characteristics which give rise to a person's life style. Consequently, in this study, the effects of life style are considered in so far as changes in life style through the life cycle contribute to life cycle effects on residential area evaluation. The discussion of life style considers changes in leisure activities and in residential history through the life cycle when variations in all other social characteristics are controlled.

The next section reviews the existing evidence of life cycle effects on residential area evaluations. Evidence that life cycle status

affects residential area preferences and the desirability assigned to individual residential area attributes is discussed. This literature review identifies two major omissions in the present understanding of life cycle effects on residential area evaluation.

2.3 The Family Life Cycle and Residential Area Evaluation

The notion that life cycle status influences the evaluation of residential areas was proposed first by Rossi (1955). He suggested that sensitivity to the external residential environment increased as a household progressed through the life cycle. Later research has confirmed the significance of life cycle effects on evaluation but the observed relationships are not always in the direction proposed by Rossi (1955).

Foote *et al.* (1960) noted that the birth of children precipitated residential relocation to satisfy increased demands for internal space and new concerns about neighbourhood character. He argued that locational convenience was a secondary concern at this stage in the life cycle. Desires for a predominantly residential location providing nearby access to parks and schools dominated residential area evaluation (Foote *et al.*, 1960, 104).

Michelson (1977) has confirmed this trend in a recent study of Toronto movers. Life cycle status was shown to affect preferences for a suburban location. Respondents who had children stressed the advantages of a suburban location whereas childless respondents emphasized the convenience of a downtown location (Michelson, 1977, 140).

These results confirm that life cycle status is related to resi-

does not increase steadily through the life cycle as Rossi (1955) hypothesized. The empirical findings shows that young families in the early child-rearing stages of the life cycle are most sensitive to conditions in the residential area (Butler *et al.*, 1969; Troy, 1973). Life cycle effects on residential area evaluation are related to child care responsibilities as discussed earlier.

Several authors have investigated how life cycle status affects the desirability of individual residential area attributes. Michelson (1967) found significant variations in the desirability of different lot sizes and of mixtures of land uses which are related to life cycle status. Older respondents whose children had left home preferred smaller lots (Michelson, 1967) and a mixture of residential and commercial land uses (Michelson, 1970, 105). Cottrell (1975) reported that married couples with children emphasized the importance of safety from crime and safety for children. Childless married couples were more concerned with the visual appearance of an area.

Although these findings lend support to the assertion that life cycle status influences residential area aspirations, they are incomplete in two respects. First, it is not clear from the present evidence how life cycle effects on the desirability of residential area attributes contribute to observed life cycle effects on residential area preferences. The decreased desirability of large lots in later stages of the life cycle which was reported by Michelson (1967) has never been linked to the significant differences in residential area preferences observed in other studies (Troy, 1973; Hourihan, 1975). The contribution of individual residential area attributes to life cycle effects on residential area preferences has

never been specified.

Second, these studies do not explain how changing participation in the family affects residential area evaluation. The evidence suggests that changes in child-rearing responsibilities are the basis of life cycle effects on residential area preferences. Yet, it is unclear *how* these child-rearing responsibilities affect evaluation.

Three methodological problems exaggerate these uncertainties. Information about the desirability of specific residential areas and of individual residential area attributes has been elicited independent of both the alternative areas and the alternative attributes. Consequently, the empirical evidence is frequently contradictory. For example, Michelson (1967) reported that preferences for large lots declined through the life cycle, whereas Lansing and Hendricks (1967) found that small lots were preferred by single respondents of all ages.

Inadequate controls on social characteristics other than life cycle status contribute to these contradictory findings. Specifically, there is extensive evidence that type of tenure affects residential area evaluation (Butler *et al.*, 1969; Troy, 1973). Yet, type of tenure is related significantly to both life cycle status (Pickvance, 1973) and life style (Michelson, 1977). The interaction between these social characteristics has not been considered in the analysis of life cycle effects on residential area evaluation. Consequently, the effects of life cycle status are not specified clearly in the existing literature.

Varied definitions of critical concepts such as the residential area increase the difficulties of synthesizing the empirical evidence. For [illegible] defined at a [illegible]

ranging from wards (Hourihan, 1975) and suburbs (Troy, 1973) to the area within 500 feet of the front door(Lansing and Hendricks, 1967). As a result of these differences in operational definitions, it is difficult to compare the findings of different studies.

These methodological problems add to the present misunderstanding of life cycle effects on residential area evaluation. However, the limitations of our present knowledge derive primarily from uncertainty about the effects of life cycle status on the evaluation process and the manner in which family participation affects residential area evaluation. The remainder of this chapter addresses these problems by discussing the links proposed earlier in the conceptual framework. The next section examines how life cycle status affects residential area aspirations. The argument is analogous to that developed by Lansing and Hendricks (1967). It seeks to specify the origins of life cycle effects on residential area evaluation by specifying how life cycle status influences the aspirations which guide evaluation.

2.4 Life Cycle Status and Residential Area Aspirations

Rossi (1955) was one of the first to recognize that the social, built, and physical features of the residential area were considered in residential area evaluation. He suggested that the importance of each feature, as a reason for choosing a house, depended upon family needs. Changes in family composition were seen to generate new family needs. However, the nature of these family needs was never specified nor were life cycle effects on the importance of individual attributes detailed.

This notion of life cycle effects on residential desires has

been adopted wholeheartedly in the geographical literature (Wolpert, 1965; Brown and Moore, 1970). However, our understanding of these family needs has not progressed far beyond the obvious conclusion that increases in household size generate demands for more dwelling space.

Moore (1972) suggested that values are the basis of residential area aspirations. Although he specified that these values are concerned with personal life style, housing conditions, and neighbourhood characteristics (Moore, 1972, 3), the relationship between these values and life cycle status was not elucidated. One possible explanation is that life cycle status affects life style in the ways proposed earlier.

Recently, it has been suggested that residential areas are evaluated as opportunity fields which support desired behaviours with varying success (Michelson, 1977; Bell, 1958). In this context, residential area aspirations are thought to describe the perceived impact of each residential area attribute on opportunities to engage in desired activities. The importance assigned to a residential area attribute reflects the extent that it is believed to support desired participation in activities.[5]

Specifically, propensities to engage in activities are hypothesized to be the basis of individual differences in residential area aspirations. Leisure activities have been identified as the major source of variation in activity patterns (Chapin, 1974; Reed, 1976). Thus, propensities to engage in leisure activities are postulated as the mechanism by which the family life cycle affects residential area evaluation. This relationship

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[5] This is a modification of the definition of attribute importance proposed by Hultquist (1972). This definition is implicit in Peterson's (1967) comments about the instrumental nature of residential area preferences.

has been stated more generally as

> Leisurely activity is a mediating variable operating between the formal characteristics of a person or his setting on the one side and his satisfaction or preferences on the other.
>
> (Michelson, 1969a, 27)

Furthermore, residential area aspirations are adjusted on the basis of prior residential experience (Wolpert, 1965; Kennedy, 1975). These modifications are seen to take two forms. Aspirations are modified to take account of any unforeseen benefits of residential area attributes. Thus, the importance of any attributes which have proved unexpectedly to support desired leisure activities is increased. In a similar fashion the importance of attributes which have not supported leisure activities as anticipated in the residential choice is adjusted. However, it is not clear if the importance of these attributes is decreased or increased.[6]

This definition of residential area aspirations as judgements of the perceived impact of residential area attributes on opportunities to engage in desired activities clarifies the nature of family needs first postulated by Rossi (1955). The family life cycle is hypothesized to affect residential area aspirations through changes in propensities to engage in leisure activities and differences in residential history. Moreover, the assignment of attribute importance is the most significant aspect of residential area aspirations. The impact on residential area

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[6] Note that this process is analogous to cognitive dissonance reduction (Fishbein and Ajzen, 1975). Beliefs are changed to accord with experience.

evaluation of changes in attribute importance is examined in the next section.

2.5 Aspirations and Evaluation

Evaluation describes how aspirations are compared to information about each residential area. The importance of a residential area attribute determines the impact of disparities between perceived attribute levels and desired attribute levels. Small disparities on important attributes may decrease the desirability of an area more than large disparities on less important attributes. Thus, changes in attribute importance through the life cycle are hypothesized to have a direct effect on residential area preferences.

In addition, the importance assigned to residential area attributes affects the form of the evaluation function. The human capacity to integrate information is limited (Dawes, 1975). Consequently, the manner in which preferences are formed depends upon the amount of information considered in the evaluation process. As more attributes become salient to residential area evaluation, the evaluation function is simplified. Lexicographic and conjunctive functions are substituted for the linear compensatory evaluation function in which all residential area attributes are considered simultaneously. The effects of adding salient attributes can be measured by the predictive accuracy of each evaluation function. The accuracy of the linear compensatory evaluation function, as measured by the correlation between elicited and estimated preferences, has been shown to decline as more attributes are considered in the evaluation process (Einhorn, 1970; Pras and Summers, 1975; Hall, 1976).

The salience of residential area attributes depends upon their importance. Attributes which are assigned zero importance do not contribute to residential area evaluation. The assignment of zero importance indicates that a person is indifferent to a residential area attribute. The attribute is not believed to contribute to the desirability of a residential area. Therefore, the assignment of zero importance to residential area attributes reduces the amount of information considered in residential area evaluation. In this way, residential area aspirations influence the predictive accuracy of each evaluation function. Since life cycle status has been proposed as a major determinant of residential area aspirations, it is hypothesized that life cycle status is related to the predictive accuracy of each evaluation function in so far as it affects the assignment of zero importance to residential area attributes.

Consider the linear compensatory evaluation function derived from attitude theory. The attitude towards an alternative k which is held by person i is a linear combination of the person's beliefs concerning the extent that alternative k possesses attribute j, and the perceived desirability of attribute j (Fishbein and Ajzen, 1975). Thus,

$$A_{ki} = \sum_{j=1}^{n} b_{kij} I_{ij} ,$$

where A_{ki} is the attitude of person i to alternative k, b_{kij} describes the extent that alternative k is believed to possess attribute j by person i, and I_{ij} is the desirability of attribute j to person i (Fishbein and Ajzen, 1975). The desirability of an attribute is analogous to its imp

attitudes towards alternatives (Hall, 1976). Thus, the preference ranking assigned to alternative k by person i is described by

$$P_{ki} = \sum_{j=1}^{n} b_{kij} I_{ij} .$$

It is assumed that each attribute has an independent effect on the preference ranking. Moreover, the importance assigned to each attribute describes the relative contribution of each attribute to a preference ranking (Coombs, 1964).

This evaluation function is applied most frequently in the analysis of residential preferences. Although several authors (Flowerdew, 1973; Burnett, 1978) have recently suggested that noncompensatory evaluation functions are more accurate representations of the formation of residential preferences, the data requirements of these evaluation functions have precluded their application in empirical studies. For this reason, this study analyses life cycle effects on the evaluation function in terms of the relationship between life cycle status and the accuracy of the linear compensatory evaluation function. It is hypothesized that life cycle status has significant effects on the accuracy of this evaluation function which result from changes in residential area aspirations through the life cycle.

Thus, life cycle effects on residential area aspirations are hypothesized to influence residential area evaluation in two ways. In so far as life cycle status affects the importance assigned to residential area attributes, residential area preferences vary through the life cycle. Secondly, the accuracy of the linear compensatory evaluation function varies through the life cycle in so far as the [illegible] of

zero importance to residential area attributes is related to life cycle status.

To elucidate life cycle effects on residential area preferences, the nature and extent of changes in residential area aspirations through the life cycle must be specified. Earlier, it was suggested that life cycle effects on aspirations are due to variations in residential history and in propensities to engage in leisure activities through the life cycle. The next two sections review existing evidence that life cycle status affects these two behaviours.

2.6 The Role of Leisure Activities

Our understanding of life cycle effects on propensities to engage in leisure activities is based on observed changes in leisure activities through the life cycle.[7] Empirical investigations of time space budgets have confirmed the significant impact of life cycle status on the frequency and location of leisure activities (Chapin, 1974; Reed, 1976).[8] The presence and ages of children in the household appear to have the greatest impact on leisure activities.

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[7] Changes in propensities to engage in leisure activities are inferred from observed changes in activity patterns through the life cycle. These activity patterns result from the interaction between propensities to engage in leisure activities and opportunities for participation in these activities. Thus, the selection of a residential area influences the extent that desires to participate in activities are enacted. Residential history, therefore, affects observed participation in leisure activities. Yet, propensities to engage in leisure activities contribute to the formation of residential area preferences which are one of the determinants of residential choice. This interaction between propensities to engage in leisure activities and residenti hi
the

Three trends are apparent in the present evidence. The total amount of time devoted to leisure activities decreases with the birth of the first child in a household (Szalai, 1972). Leisure time is reduced further with the birth of each successive child. This decline in leisure time is most pronounced among women caring for preschool children. The amount of time devoted to leisure activities increases steadily after the youngest child enters school (Szalai, 1972, 127; Chapin, 1974).

As the amount of available leisure time changes through the life cycle, different leisure activities are undertaken. The greatest differences occur in the proportion of leisure time devoted to individual recreational activities such as sports and going to the theatre. With the birth of children, participation in these pastimes is reduced sharply. A larger proportion of time is given over to family and social activities such as visiting relatives and friends. Again, this change is most apparent for women caring for preschool age children (Chapin, 1974). As children grow up and leave home, recreational pastimes assume more importance. However, participation never returns to the high rates characteristic of the early childless period of the life cycle (Chapin, 1974, 115). Decreasing physical capabilities and changing social roles restrict participation in active recreational pastimes. Consequently, passive leisure activities such as watching television are emphasized later in the life cycle (Chapin, 1974; Rapoport and Rapoport, 1975, 274).

Changes in the spatial location of leisure activities accompany these life cycle effects on the allocation of time to different activities. Home-based activities are emphasized during the child-rearing periods of the life cycle. Michelson (1977, 158) found that mothers of young

children reported more local friendships than childless women. Similarly, Havighurst and Feigenbaum (1959) reported that the presence of children in the household influenced the amount of time allocated to home-based leisure activities. This trend towards local participation in leisure activities continues after children leave the household. Decreasing physical abilities restrict spatial mobility, and leisure activities become increasingly localized (Carp, 1970; Stea, 1970; Regnier, 1974).[9]

From this evidence of changes in the location and frequency of leisure activities through the life cycle, the effects of life cycle status on residential area aspirations can now be hypothesized. However, these hypotheses can only describe the general nature of life cycle effects on aspirations. The nature of these life cycle effects is examined in detail in the empirical analysis.

Prior to the birth of children, recreational pastimes dominate leisure activities (Chapin, 1974, 201). This suggests that residential areas are evaluated primarily in terms of their accessibility to facilities such as theatres and restaurants. After the birth of children, home-based social and family activities are emphasized (Chapin, 1974; Rapoport and Rapoport, 1975). Consequently, residential area aspirations are focussed on the home and its suitability for family activities. Once

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[9] It is not clear if the spatial restriction of activity patterns which occurs later in the life cycle is due to increasing financial constraints or reflects more directly, decreased physical and social mobility (Rapoport and Rapoport, 1975; Golant, 1972).

2.7 The Role of Residential History

Residential history describes the sequence and duration of a woman's residence in different types of dwellings and in different residential areas. Once again, evidence of life cycle effects on residential history is reviewed to determine how changes in residential history through the life cycle affect residential area aspirations. The significant effects of the family life cycle are well documented in the residential mobility literature (Pickvance, 1973; Brummell, 1977; Quigley and Weinberg, 1977).

This literature shows that length of residence in a house varies systematically through the life cycle. In the early part of the family life cycle, rapid changes in family size contribute to high rates of residential mobility and short periods of residency at each address (Rossi, 1955; Quigley and Weinberg, 1977).[10] In general, length of residence increases steadily from the time the youngest child enters school until the last child leaves home. Once the youngest child leaves home, reduced family size may cause one last move (Simmons, 1968). However, this trend is not well documented. Emotional ties to the present residential area encourage continuing residence at the same address (Moore, 1972).

These changes in length of residence through the life cycle are related to significant differences in the type of dwelling occupied during each part of the life cycle. Childless couples are more likely to

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[10] Morgan (1973) and Pickvance (1973) found that residential mobility rates decrease with age independent of family size.

live in rented downtown apartments (Foote *et al.*, 1960; Pickvance, 1973; Michelson, 1977). The birth of the first child is followed frequently by a move to a suburban location where owner-occupied single family houses are available (Foote *et al.*, 1960; Michelson, 1977). If the household's financial resources are limited, the household may move to rented accommodation in a suburban area. During the child-rearing periods of the life cycle, subsequent moves generally involve moving from rented to owned accommodation in a suburban area or moving between owner-occupied houses in suburban areas (Michelson, 1977). Once the last child leaves home, the newly childless household may choose to return to a downtown location; however, there is little empirical evidence of this trend.

This evidence of changes in residential history through the life cycle further elucidates life cycle effects on residential area aspirations. It was suggested earlier that residential area aspirations are modified on the basis of prior residential experience. It seems that direct experience of dwelling types and the residential areas associated with them is the major basis of these modifications (Michelson, 1969a, 28; Michelson, 1973). Since life cycle status is hypothesized to affect this aspect of residential history, it is hypothesized that life cycle effects on residential area aspirations reflect changes in residential history through the life cycle.

Similarly, it is not clear how length of residence affects residential area aspirations. Hourihan (1975) reported that established long time residents were more concerned with the familiarity of residential areas. Newer residents considered the social status of an area to be a more significant aspect of residential area evaluation. Thus, it is

hypothesized that residential area aspirations are modified by length of residence.

2.8 Summary

The existing conceptualization of residential area evaluation has been synthesized with recent findings from studies of activity patterns in residential areas. This expanded conceptual framework addresses two major problems in the present understanding of life cycle effects on residential area evaluation.

Changes in residential area aspirations through the life cycle are proposed as the basis of life cycle effects on residential area evaluation. Aspirations are thought to influence both the information considered in the formation of residential area preferences and the manner in which these preferences are formed.

Secondly, child-rearing responsibilities have been identified as the mechanism by which changing participation in the family influences aspirations. Through the life cycle, changing child-rearing responsibilities affect both residential history and leisure activity patterns. Thus, it is hypothesized that the family life cycle affects residential area aspirations through changes in residential history and in propensities to engage in leisure activities.

It remains to determine the usefulness of this conceptual framework. This task is undertaken in the following chapters of this study. The next two chapters outline the empirical hypotheses and describe the research design by which data were collected.

CHAPTER 3

THE HYPOTHESES AND OPERATIONAL DEFINITIONS

This chapter presents the framework of the empirical analysis. Seven hypotheses are stated describing how life cycle status is thought to affect the formation of residential area preferences. The relationships which these hypotheses describe are outlined in Figure 3.1.

In the second part of this chapter, concepts mentioned in the hypotheses are defined. Each concept is considered separately, beginning with life cycle status.

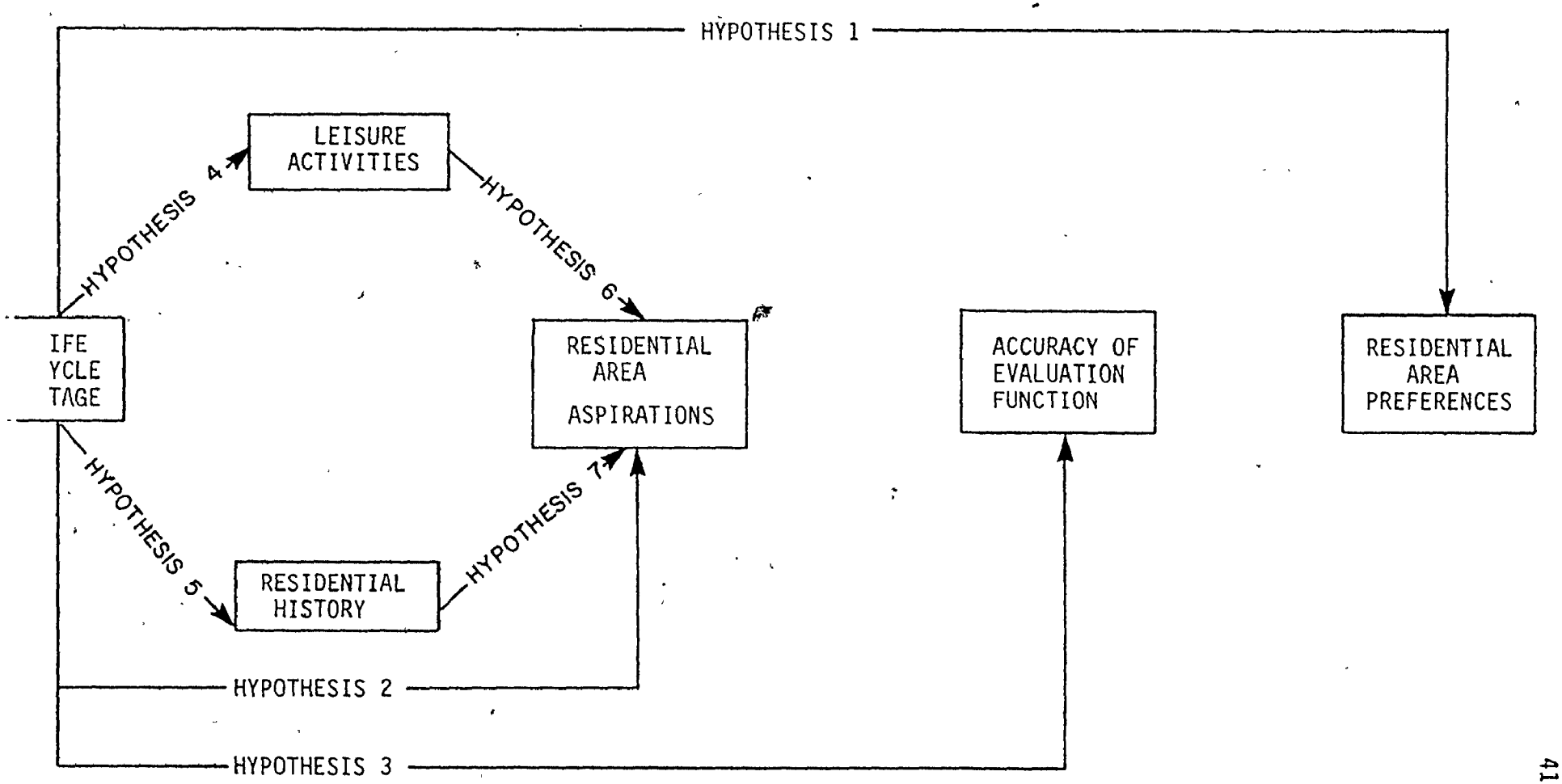
3.1 The Hypotheses

The hypotheses are concerned with married women's evaluations of residential areas. The focus on women was adopted for two reasons. Women assume the majority of child-rearing responsibilities (Szalai, 1972); therefore, life cycle effects on residential area evaluation are likely to be more marked for women than for men. Second, there is evidence that women are more concerned with conditions in the residential area (Michelson, 1969b; 1977). It appears that the residential area is somewhat more salient to women than to men.

These hypotheses are developed from four assumptions. A "normal" or "average" progression through the life cycle is assumed. It is assumed, further, that variations in income, occupation, education, and ethnicity are controlled, and differences in personality are distributed randomly

FIGURE 3.1

THE HYPOTHESES



within the population of married women. Third, variations in the cognition of residential areas are controlled. A fixed set of attributes is assumed to be the basis of residential area evaluation. Finally, a fixed set of residential areas is considered. Each woman is assumed to have equal access to information about these residential areas. These assumptions facilitate the analysis of life cycle effects on residential area evaluation by controlling for other sources of individual differences in the formation of residential area preferences.

The basis for the hypotheses is the relationship postulated between residential area aspirations and life cycle status. It is hypothesized that stage in the life cycle has significant effects on residential area aspirations. Life cycle effects on aspirations are hypothesized to be the source of differences in residential area preferences through the life cycle.

In the first hypothesis, the extent and nature of life cycle effects on residential area preferences is assessed.

1. Preferences for residential areas are related to life cycle status

Previous studies (Foote *et al.*, 1960; Michelson, 1977) have suggested that women raising children prefer areas characterized by large lots, open space, and single family dwellings. Areas of mixed commercial and residential land uses are expected to be more desirable to women who are free of child care responsibilities (Michelson, 1967; 1970). These women are also more likely to prefer areas where multiple family dwellings predominate.

The corollary to this hypothesis concerns the level of consensus on residential area preferences among women in the same stage of the life cycle.

1.1 The level of consensus on residential area preferences is related to life cycle status

The norms concerning housing suitable for raising children are defined more specifically than any other housing norms (Morris and Winters, 1975). In a similar fashion, there are shared expectations describing the activities appropriate for women raising children (Nye and Grecas, 1976). It follows that women who are raising children agree among each other about the desirability of each residential area. Less agreement is expected among women for whom child-oriented family concerns are not salient. Idiosyncratic judgements of the desirability of residential areas are expected more frequently during the childless stages of the life cycle.

The next hypothesis describes the central thesis of this study that life cycle status has significant effects on residential area aspirations.

2. Life cycle status is related to residential area aspirations

Women who are caring for preschool age children are expected to emphasize residential area attributes describing the environs immediately adjacent to a house. The expectations are that they are concerned with access to private outdoor space, the distance between houses, and safety. As children grow up, attributes in the larger residential area acquire more significance, so that access to schools, parks and public open space

is stressed. Once children have left school, child-oriented family concerns are less important. Aesthetic attributes of residential areas such as greenery acquire more significance. Access to friends and facilities is emphasized as physical and social mobility become more restricted later in the life cycle.

Due to its effects on residential area aspirations, life cycle status is thought to have significant effects on the accuracy of the evaluation function. The effects of life cycle status on the predictive accuracy of one evaluation function, the linear compensatory function, are examined in the third hypothesis.

3. The predictive accuracy of the linear compensatory evaluation function is related to life cycle status.

It is hypothesized that the accuracy of the linear compensatory evaluation function depends upon the frequency that attributes are assigned zero importance. Life cycle status is thought to affect the assignment of zero attribute importance. Thus, it is hypothesized that the accuracy of the linear compensatory evaluation function is related to life cycle status in so far as the family life cycle affects the assignment of zero attribute importance.

Changes in leisure activities and differences in residential history related to life cycle status are thought to be the means by which the family life cycle affects residential area aspirations. This relationship is analysed in two parts. The effects of life cycle status on leisure activities and residential history are assessed. The extent that the family life cycle affects residential area aspirations through these changes in leisure activities and [illegible] in r[illegible]

is examined.

4. The frequency of participation in leisure activities and the extent to which leisure activities are conducted within the residential area are related to life cycle status.

It is expected that the frequency of participation in individual recreational pastimes declines significantly with the birth of children (Szalai, 1972). Once children have entered school, leisure time increases but it is dominated by participation in family and social activities (Chapin, 1974). Both the total amount of leisure time and the frequency of participation in nonfamilial activities increases once children finish school and leave home. More leisure time is devoted to passive activities later in the life cycle (Brail and Chapin, 1973).

The location of leisure activities are also thought to vary through the life cycle. Prior to the birth of children, leisure activities are dispersed at locations outside the residential area. With the arrival of children, these activities are concentrated within the residential area. The degree of local concentration decreases gradually as children mature. However, this trend towards spatial dispersion is counteracted by decreasing mobility late in the life cycle (Stea, 1970).

A different pattern of life cycle effects is hypothesized for residential history. It contrasts the early period of the life cycle prior to and immediately following the birth of children with the later and longer period of child-raising and subsequent post child-rearing stage. Residential history is described by length of residence at the present location and length of residence in different dwelling types.

5. Life cycle status is related to length of residence at the present location and residency in different dwelling types.

It is expected that length of residence at the present location increases after the birth of the last child until the youngest child finishes school (Quigley and Weinberg, 1977). After the youngest child finishes school, households may move because of decreased size; however, emotional ties to the present location encourage continued residence (Moore, 1972). Later in the life cycle, physical disabilities may compel a move to a smaller house or apartment (Carp, 1970a; Stea, 1970), thereby decreasing length of residence at the present address.

Residency in different dwelling types is expected to exhibit a similar relationship to life cycle status. Early in the life cycle, women are less likely to have lived for long periods in single family dwellings. However, after the birth of the first child length of residence in this type of house increases steadily through the remainder of the life cycle (Foote *et al.*, 1960; Michelson, 1977).

The extent that these changes in leisure activity patterns and in residential history contribute to life cycle effects on residential area aspirations is examined in the last two hypotheses.

6. Residential area aspirations are related to the frequency of participation in leisure activities and the extent of local participation in these activities.

The nature of these relationships is difficult to predict *a priori*. The analysis will demonstrate the extent that life cycle effects on residential area aspirations are due to life cycle effects on the frequency and location of participation in leisure activities. It will indicate

whether the attributes associated with leisure activities are the same attributes for which life cycle effects were apparent in tests of Hypothesis 2.

Tests of this hypothesis will answer the following questions. Is the importance of social residential area attributes related to either the frequency of participation in social activites or the degree of local participation in social activities? As the frequency of participation in outdoor recreational activities increases, does the importance of physical and built features of the residential area such as open space and access to parks also increase? Again, is frequency of participation in these activities or the location of this participation related more directly to residential area aspirations? Finally, to what extent do leisure activity patterns mediate life cycle effects on residential area aspirations?

In a similar fashion, the mediating effects of residential history are examined in Hypothesis 7.

7. Length of residence at the present address and length of residence in different dwelling types is related to residential area aspirations.

Again, it is difficult to specify *a priori* the nature and direction of these relationship. With regard to length of residence, Hourihan (1975) showed that familiarity with the present residential area assumed more significance as length of residence increased. Keller (1968) and Troy (1973) argued that social ties in an area were more important for established long time residents. These social ties contributed significantly to preferences for the present area. These findings suggest that the social

ambience of a residential area assumes more importance as length of residence increases. Yet, it is unclear how residential area aspirations are adjusted in response to the increased significance of these social ties.

Similarly, Michelson (1977) demonstrated that the reasons for selecting a residential area varied between downtown apartment dwellers and suburban residents of single family homes. His findings are too general, however, to enable the prediction of the nature and direction of this relationship.

Moreover, none of these authors controlled for differences in life cycle status.[1] Tests of Hypothesis 7 will show if residential history has significant effects on residential area attributes for which life cycle effects are also identified in Hypothesis 2. In this way, the mediating effects of residential history can be distinguished from its independent effects on residential area aspirations.

3.2 Operational Definitions

Operational definitions which specify how each concept is measured are presented in this section. The literature review indicated that inadequate definitions are one cause of the present ambiguous evidence of life cycle effects on residential area aspirations. To avoid these difficulties, the operational definitions employed in this study are discussed at length. The validity of each definition is examined as part of this discussion.

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[1] Michelson (1977, 82) attempted to control for life cycle status but his sampling design was not successful.

3.2.1 Life Cycle Status

Life cycle status has been defined previously as a person's participation in the family (Feldman and Feldman, 1975) which is measured in terms of four social characteristics: marital status, age, number of children in the household and ages of children.[2] The operational definition of life cycle status adopted in this study emphasizes the changing parental career of married women. It focusses on those characteristics of the household which have been shown to affect child-rearing responsibilities.

The ages of children in the household are most significant in this regard. Until children enter school, a woman's activities are organized around child care responsibilities (Szalai, 1972; Nye, 1976). These responsibilities decrease once children enter school. However, child-oriented concerns continue to influence a woman's participation in the family until children leave home. Szalai (1972) reported that the ages of children rather than the number of children in the household is the major determinant of a woman's participation in the family.

Age has been cited frequently as a significant aspect of life cycle status (Rapoport and Rapoport, 1975); however, its effects on the family participation of adult married women are most apparent late in the life cycle.[3] The age of retirement is chosen most frequently to indicate the time at which aging begins to affect family participation

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[2] Social class and cultural differences are disregarded because it is assumed that these social characteristics are controlled.

[3] Pickvance (1973) has suggested that age operates independently of the family life cycle, but it is associated with each stage in the life cycle.

(Golant, 1972). Since the majority of women have finished raising their children before this time, age is not considered explicitly in this definition of life cycle stages.

Four stages in the life cycle of married women are defined in terms of the presence and ages of children in the household as follows:

1) women who have never borne children,

2) women whose youngest child is preschool age,

3) women whose youngest child is attending elementary or high school full time, and

4) women whose youngest child has completed high school.

It is assumed that movement between these life cycle stages signal significant changes in a woman's participation in the family.

The definition of the fourth life cycle stage requires further comment. Throughout the discussion, the end of child-rearing responsibilities has been associated with the departure of children from the home. Yet the fourth life cycle stage as defined here begins when children finish high school. This definition distinguishes families where the presence of resident teenage children implies continued child care responsibilities from families where these responsibilities are largely completed despite the continued presence of children in the home. These include families where resident children are working full time and families where financially dependent children are no longer living at home. These families have entered "the launching period" (Reiss, 1976) of the life cycle when children are treated as adult members of the household. Thus, the fourth life cycle stage as defined here indicates the end of a married woman's

parental career. Child-oriented responsibilities no longer dominate her participation in the family and other family roles assume more significance (Nye and Grecas, 1976).

3.2.2 The Residential Area

The residential area refers to the physical, built, and social features in the environs of a house. The spatial extent of this area and the attributes by which it is characterized remain to be specified.

The spatial extent of the environs of a house which are considered in residential area evaluation has never been investigated. However, there is evidence that sentimental attachment to an area rather than use of local facilities or local social ties is related to satisfaction with a residential area (Buttimer and MacDonald, 1974). Moreover Tuite (1974) and Lee (1968) reported that the description of a residential area as the area where a person felt at home was comprehensible and salient to the majority of urban residents. On the basis of this evidence, the residential area is defined as the environs of a house to which a person is sentimentally attached. The boundaries of this area indicate where a person begins to feel at home when returning to the house from other parts of the urban area.

The attributes by which residential areas are evaluated have been examined in more detail. A set of residential area attributes mentioned by the majority of respondents was identified from two studies in which

residential and neighbourhood attributes were elicited from respondents[4] (Harman, 1975; Tuite, 1974). This list was modified on the basis of two pretests,[5] to produce the final set of sixteen bipolar attributes (Table 3.1).

These attributes represent the range of residential area attributes elicited by Harman (1975) and Tuite (1974).[6] Moreover, they include many of the attributes proposed earlier by Wilson (1966) and Peterson (1967). Both tangible features[7] within residential areas such as access to parks

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4 These studies investigated the cognition of residential vacancies, (Harman, 1975) and neighbourhood cognition (Tuite, 1974). It could be argued that different attributes are salient in residential area evaluation; however, Klahr (1969) and Lloyd (1976) have demonstrated that the cognition and evaluation of spatial alternatives are based on the same attributes.

5 In the first pretest, approximately 100 first year geography students at McMaster University rated 30 photographs of residential areas on eighteen residential area attributes. The attributes were redefined on the basis of this pretest and subsequent tests of the survey instrument. Three changes were made: status and friendliness were separated into two attributes, access to recreational facilities was replaced by access to parks and access to places of worship was dropped as a salient attribute.

6 Two types of residential area attributes which were elicited by Harman (1975) and Tuite (1974) are not included in Table 3.1. References to public service provision are excluded because of the low frequency of mention reported by these two authors. Traffic conditions are not described explicitly because Harman (1975) noted that concerns about traffic safety are associated with more general concerns about personal safety.

7 The attributes referring to the accessibility of facilities, describe access to those facilities that are expected within the residential area. Harman (1975) found that attributes, referring to the accessibility of a residence divided into two groups, one describing local access within the residential area, and the second referring to access from the residential area to other parts of the urban area.

TABLE 3.1

RESIDENTIAL AREA ATTRIBUTES

Very Noisy / Very Quiet

Much Greenery / Little Greenery

Very Friendly / Very Unfriendly

Mainly Apartments / Mainly Single Family Homes

Well Kept, Clean, Tidy / Unkempt, Untidy, Dirty

Much Open Space, Park-like / Little Open Space, Built Up

Very Large Lots / Very Small Lots

People Very Different From Us / People Very Like Us

Less Prestigious, Low Status / More Prestigious, High Status

Buildings Very Far Apart / Buildings Very Close Together

Very Dangerous / Very Safe

All Residential Land Uses / Mixed Commercial and Residential Land Uses

Very Public / Very Private

Shopping Nearby / Shopping Far Away

Park Nearby / Park Far Away

Schools Nearby / Schools Far Away

and the distance between buildings, and intangible features such as privacy and social status are described by these attributes.

Although the pretests confirmed the salience of these residential area attributes to urban residents, these attributes are verbal descriptions of mental constructs. There is no claim that these residential area attributes refer to their physical referents, i.e. the attribute, distance between buildings, does not refer necessarily to objective measures of the separation between buildings in an area.

The validity of these attributes is derived from previous empirical studies where they have proved salient and meaningful to respondents. Careful retention of the original wording insures that the residential area attributes listed in Table 3.1 are potentially salient and meaningful to married women.

3.2.3 Residential Area Aspirations

Residential area aspirations describe the conditions desired in a residential area in terms of the attributes salient in residential area evaluation, the desired levels of these attributes, and the relative importance of these attributes (Moore, 1972, 3). Earlier, it was argued that judgements of the relative importance of residential area attributes are the most significant components of aspirations. The *relative importance of a residential area attribute* describes the extent that the attribute is believed to contribute to a desirable residential area (Fishbein and

Ajzen, 1975). It determines the impact of disparities between desired attribute levels and perceived attribute levels in an area on the perceived desirability of the residential area.

Although this definition is not new, (Peterson, 1967; Hultquist, 1972) it emphasizes three neglected aspects of attribute importance. First, judgements of the importance of residential area attributes are determined relative to the importance assigned to other attributes. They involve implicit comparisons between residential area attributes. Valid measures of attribute importance cannot be obtained by asking people to consider each residential area attribute independent of other attributes.

Second, judgements of attribute importance refer to conditions desired in a residential area. These aspirations are not necessarily attainable in the immediate future. They describe the residential area a person strives to attain (Michelson, 1977). Attributes which a person wishes to avoid as well as attributes which are desired[8] are included in aspirations. Thus, the importance assigned to a residential area attribute can reflect desires to avoid the attribute as much as it reflects desires to obtain the attribute.

Third, judgements of attribute importance are statements of beliefs. The validity of any methodology for eliciting information about these unobservable beliefs can be established only by reference to the initial definition of residential area aspirations. A valid methodology

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[8] Harman (1975) reported that some residential attributes were salient because people wished to avoid them. Peterson and Worall (1970) have demonstrated that the desirability of access to facilities varies. People wish to avoid facilities that are too near to too far away.

must take account of the relative nature of attribute importance, the possibility that attributes can be desirable or undesirable, and the possibility that aspirations are not necessarily attainable in the short run.

3.2.4 Residential Area Preferences

The distinction between attainable and unattainable residential area aspirations is clarified by the definition of residential area preferences. *Residential area preferences* describe the overall desirability assigned to alternative residential areas. The desirability of an area is judged relative to the other residential areas considered in a particular evaluation. Preferences for residential areas, like aspirations, cannot be defined independent of the set of available alternatives.

Two definitions of preferences have been proposed in the geographical literature. Clark and Cadwallader (1973) have suggested that financial and other constraints must be considered when preference judgements are elicited. According to this view of preference formation, preference judgements reflect the perceived desirability of each alternative and the feasibility of obtaining each alternative.

The alternate view of preferences is adopted in this study. Preferences describe the perceived desirability of alternative residential areas. Preferences are related to observed choices in so far as financial and other constraints permit people to act upon these preference judgements. By separating preference judgements from observed choices in this fashion, the extent that life cycle effects on residential area evaluation contribute to systematic variations in residential choices through the

life cycle can be assessed.

The validity of this definition of preferences has been demonstrated in several empirical studies. Burnett (1973) and Hudson (1970) reported that elicited preferences for retail establishments predicted accurately the frequency of patronage of these establishments. In a similar fashion, Menchik (1972) demonstrated that elicited preferences for residential area attributes were related to objective measures of residential area attributes. This evidence seems to refute the argument that people cannot judge the desirability of alternatives independent of the possibility of obtaining each alternative.[9]

3.2.5 Leisure Activities

Leisure activities refer to those actions undertaken voluntarily of a "person's own free will" (Chapin, 1974, 37). Propensities to engage in these voluntary activities have been postulated as intervening variables which mediate life cycle effects on residential area aspirations. These desires for participation in leisure activities are defined by observed rates of participation in these activities. However, observed patterns of participation in leisure activities reflect both propensities to engage in these activities and the opportunities available for undertaking these activities. The validity of this operational definition of propensities to engage in leisure activities depends upon three factors: the validity of the classification of activities as voluntary or obligatory actions, the extent that variations in opportunities to perform these activities

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[9] Harman (1975) provides a detailed [illegible] of this ar

are controlled, and the definition of participation rates.

There is no accepted typology of activities which specifies the characteristics of voluntary activities.[10] Activities have been grouped according to the researcher's assessment of similarities in purpose and in motivation (Tomlinson *et al.*, 1973; Yeung and Yeh, 1976).[11] Consequently, seventeen activities were selected from previous empirical studies to represent the variety of adult leisure pastimes. These activities (Table 3.2) correspond closely to the leisure pastimes elicited in a recent study of the time-budgets of Toronto movers (Reed, 1976; Michelson, 1977). They represent the range of leisure activities considered by Chapin (1974).[12] Although this study cannot establish that this is an exhaustive and representative selection of leisure activities, the similarity between this list and the leisure activities considered in other studies suggests this is a valid description of leisure activities.

Participation in leisure activities is described by three variables; the frequency that activities are undertaken, the amount of time devoted to each activity, and the location of participation. The duration of

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10 Reed (1976) postulated six characteristics to classify activities: active-passive, home-oriented-non-home-oriented, consumption-production, compulsory-voluntary, participating-spectating, but his empirical analyses did not reveal any consistent groups of activities according to these characteristics.

11 Chapin (1974; 67-71) reported that a classification of activities according to respondents' assessments of their voluntary and obligatory nature was inconclusive and contradictory.

12 Four of the six types of leisure activities proposed by Chapin are represented in this list: six social activities, six recreational activities, three participatory activities, and one family activity. The two passive types of leisure activities; watching T.V. and rest and relaxation (Chapin, 1974, 252) are not included. These passive activities are undertaken primarily within the home.

TABLE 3.2

LEISURE ACTIVITIES

Shopping Trips

Actively Participate in Sports

Attend Public Entertainment

Participate in Clubs and Organizations

Visit Cultural Facilities, i.e., Library, Art Gallery

Go to Church, Synagogue

Visit Parks and Beaches

Go to Restaurants and Bars

Attend Extension Classes, Night Classes

Take Drives and Walks for Pleasure

Take Children to Extracurricular Activities

Greet People Casually

Chat with Neighbours Outside

Visit People Unexpectedly in Their Homes

Be Entertained in Others' Homes

Speak on the Telephone with Friends, Relatives

Help People, i.e. Babysit, Lend Items

participation in activities has been analysed previously (Szalai, 1972; Chapin, 1974; Reed, 1976). Less attention has been paid to the frequency with which activities are undertaken and their locations. Therefore, participation rates are described by the number of times an activity is conducted during a fixed time period. The location of a leisure activity is defined by the proportion of times an activity is conducted within the residential area. These variables are valid descriptions of propensities to engage in activities only in so far as differences in opportunities to perform these activities are controlled. To this end, variations in opportunities to perform leisure activities are analysed in the later discussion of the research design.

3.2.6 Residential History

Residential history refers to the duration and sequence of occupancy of different types of dwellings and residential areas through a person's life time. In other words, it describes the sum total of a person's residential experience at any point in time. The problem is to define operational measures of this complex variable. By necessity, these operational measures are only partial and simplified descriptions of residential experience. They are quantitative rather than qualitative descriptions of residential history.

Two operational measures are proposed in this study to assess the nature of each woman's experience of her present area and the nature of her experience of a variety of different residential areas. Length of residence at the present address is straighforward. It describes the duration of a woman's direct experience of a residential area by the

number of years she has lived in her present house.

Residency in different dwelling types is proposed as the second measure of residential history. It measures the duration of residence in nine dwelling types which are differentiated by type of tenure and type of house since a person has established an independent residence. This baseline was chosen on the basis of recent arguments that residential experiences after the establishment of an independent household influence aspirations (Michelson, 1977, 34).[13] Since each dwelling type is associated generally with a particular type of residential area (Gans, 1967; Michelson, 1977), length of residence in different types of houses describes, in a partial fashion, each woman's experience of different residential areas.

Both these measures of residential history have been shown to have significant effects on residential area evaluation. Thus, despite the partial and quantitative nature of these measures of residential history, they seem to be valid descriptions of a person's residential experience.

3.3 Summary

The framework for the empirical analysis of life cycle effects on residential area evaluation is now complete. Both the hypotheses and the variables have been specified. Data to test these hypotheses was

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[13] Cooper (1974) and Marshall (1970a; 1970b) present alternative viewpoints that childhood experiences influence residential area aspirations. The nature of these effects are not well understood, nor are they well-documented. Consequently, they were not considered in this study.

collected by a questionnaire survey of married women resident in the Hamilton metropolitan area. The nature of these data and the sample from which they were collected are described in the next chapter.

CHAPTER 4

THE RESEARCH DESIGN

The purpose of this chapter is to outline the data and the data collection procedures. The first section describes the sample design and the social characteristics of the respondents. The survey instrument and the nature of the data are discussed in the second section.

4.1 The Sample Design

Inadequate sampling designs have contributed to the present misunderstanding of life cycle effects on residential area evaluation. Two problems are evident in the empirical literature. First, variations in residential area evaluation have been attributed to differences in life-cycle status without adequate controls for variations in other social characteristics. Secondly, respondents have been selected nonrandomly. Consequently, the generality of the findings reported in several studies cannot be ascertained.[1] The sampling procedures used in this study were designed to overcome these two problems.

4.1.1 The Objectives of the Sample Design

The aims of the sample design are twofold:

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[1] general and the fin r

1) to select equal numbers of married women from the four stages in the life cycle who are as far as possible of otherwise similar social background.

2) to select these women in an unbiassed and random fashion.

To accomplish the first aim, the sample design controls for variations in three social characteristics which have significant effects on residential area evaluation: socioeconomic status, work status, and tenure status. Work status and socioeconomic status affect residential area evaluation indirectly through their relationship to life style (Michelson and Reed, 1970; Reed, 1976). Tenure status has a more direct effect on residential area evaluation. Significant differences in residential area evaluation have been observed between owners and renters (Butler *et al.*, 1969; Troy, 1973).

Variations in these social characteristics can be controlled statistically if the sample size is large. Alternatively, a stratified sample can be selected which is drawn from only one segment of the total population. The second strategy was adopted in this sample design. The sample was restricted to married middle class women who do not work full time and reside in owner-occupied housing. By stratifying the sample in this manner, similarity in social characteristics other than life cycle status is assured.

The choice of these stratification factors requires further explanation. The focus on married women follows from the discussion of life cycle status and its effects on residential area evaluation. Child-rearing responsibilities were postulated as the basis of life cycle

child care responsibilities (Aldous, 1978, 224; Nye and Grecas, 1976; Szalai, 1972). Thus, changes in child-rearing responsibilities are more likely to influence women's residential area evaluations.

Moreover, to define life cycle stages a "normal" or "average" progression through the family life cycle must be assumed (Norton, 1974). Although more people are not completing the family life cycle from inception of the family to its dissolution by the death of one spouse, the nuclear family remains the most common family structure (Aldous, 1978). Consequently, the family life cycle is assumed to begin with the formation of a new family by marriage.

Middle class women are considered in this study for two reasons. First, empirical investigations of residential evaluation have paid little attention to other social classes.[2] Since this study proceeds from earlier analyses of the residential area attributes salient in residential area evaluation, people of similar socioeconomic status must be considered. More pragmatically, there is evidence that middle class urban residents are more responsive to questionnaire surveys (Moser and Kalton, 1972, 172).

Women who do not work full time were included in the sample because of recent evidence that non-working women are sensitive to conditions in the local residential area (Michelson, 1977; 1969a). Residents of owner-occupied housing were included for the same reason. Several authors[3] have reported that owners are more concerned than renters with the quality of the residential area.

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[2] The studies by Brummell (1977), Harman (1975), and Michelson (1977) are based on interviews with middle class respondents.

[3] Lansing, Marans and Zehner (1970), Butler *et al.* (1969), and Troy (1973) found evidence of this relationship.

These stratification factors are the basis of a sampling frame which is a list of potential respondents who meet the criteria for inclusion in the sample (Moser and Kalton, 1972, 44). Random selection of people from this list insures that the second aim of the sample design is accomplished. The details of this sampling procedure which is outlined in Figure 4.1 are discussed in the next five sections.

4.1.2 The Classification of Enumeration Areas

The first task was to develop lists of potential respondents stratified according to socioeconomic status. For this purpose, a factorial ecology of enumeration areas in the Hamilton Census Metropolitan Area was performed. The second factor which emerged from this analysis had high loadings on variables describing the income, occupation, education and ethnic background of residents of each enumeration area.[4] Enumeration areas were divided into three groups according to their scores on this factor labelled socioeconomic status. By this means, 292 middle class enumeration areas were identified.

These middle class enumeration areas were ranked on four statistics describing the family composition of each area. These statistics correspond to the four stages in the life cycle defined earlier as follows:

Stage 1: the percentage of women in the child-bearing years who have never borne children

Stage 2: the percentage of families which include children under six years of age

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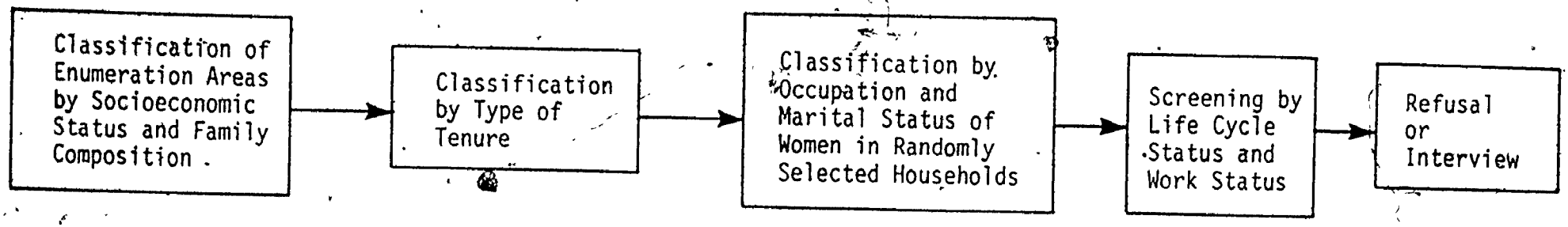
4 This ana[illegible] and its results are [illegible]ibed in [illegible] A.

FIGURE 4.1

THE SELECTION OF THE SAMPLE



Stage 3: the percentage of families in which there are children attending school

Stage 4: the percentage of families in which children are older than six years of age and no longer attending school.

Twenty areas were selected by choosing the five areas which ranked highest on each of these four statistics.[5] These twenty areas comprised the initial sampling frame. A list of the households resident in each of these areas was obtained from *Vernon's Hamilton City Directory, 1974* (1974).

4.1.3 Classification of Households by Type of Tenure

The lists of households in each enumeration area were edited on the basis of information in the city directory. All renters in each enumeration area were struck from the lists of households. Frequently, all the households in an enumeration area were eliminated by this procedure. Additional areas were selected according to their ranks on the four life cycle statistics. Table 4.1 indicates the total number of areas which were selected by this procedure.

From these lists of households, individual respondents were selected randomly. The initial sample design proposed that five women be selected from each enumeration area to obtain 100 women from 20 enumeration areas. This disproportionate sampling procedure insures equal coverage of the four stages in the life cycle.

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[5] In each of these areas, more than fifty percent of adult women were married.

TABLE 4.1

ENUMERATION AREAS IN SAMPLE

Life Cycle Stage	Number of Enumeration Areas Considered	Primarily Rental Accommodation	Primarily Owner-Occupied Dwellings
1	17	12 (70.6)	5 (29.4)
2	39	27 (69.2)	12 (30.8)
3	9	3 (33.3)	6 (67.7)
4	30	23 (76.7)	7 (23.3)
Total	95	65 (68.4)	30 (31.6)

( ) numbers in brackets are percentages of the total number of areas considered.

4.1.4 Classification of Households by Occupational and Marital Status

Two additional screening procedures were adopted to insure that the women who were selected randomly from the lists of households were middle class and married. With information from the city directory, the marital status of women in households which were selected at random was checked. Widows, widowers and one-person households were omitted from the sample. Similarly, if the occupation of the household head did not fall within the middle stratum of the Blishen scale of occupational status (Blishen and McRoberts, 1976), the household was removed from the sample.[6]

4.1.5 Screening by Life Cycle Status and Work Status

The remaining households were contacted by telephone between August 7, 1976 and September 15, 1976. In this telephone conversation, information about the life cycle status and work status of each woman was elicited. Of the 281 women contacted by telephone, 55 were ineligible because they worked full time or did not speak English. Of the remaining eligible women, 62 percent refused to participate in the survey or failed to keep the interview appointment.

4.1.6 The Success of the Sample Design

Eighty-five interviews were obtained successfully by these sampling

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[6] Appendix B describes the number of households removed at each stage of the sampling procedure.

procedures. These interviews are distributed unevenly among the four life cycle groups; only 5 interviews with women in the first life cycle stage were arranged successfully (Table B1). Interactions between life cycle status, work status and tenure status contributed to the difficulties of contacting women in the first stage of the life cycle. Prior to the birth of children, the majority of women work full time.[7] Moreover, life cycle and work status are related to tenure status. Employed childless women tend to live in rented accommodation (Michelson, 1977). Due to these interactions between social characteristics, childless women who did not work full time and lived in owner-occupied dwellings were not identified by the random sampling procedures.

Consequently, an alternative sampling procedure was adopted to complete the sample. Respondents were contacted on a chain basis: each woman suggested any childless friends who lived in owner-occupied accommodation and might be willing to participate in the survey. Initial efforts to control work status proved fruitless, so the majority of these women work full time. Seventeen interviews with women in the first stage of the life cycle were obtained by this nonrandom sampling method.[8]

A total of 103 interviews were obtained by these sampling pro-

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[7] Spencer and Featherstone (1975) discuss the effects of children on women's participation in the labour force. Michelson (1977) encountered a similar problem in his survey of Toronto movers. 80% of the childless women in his sample worked compared to a clear minority of women with children.

[8] This nonrandom sampling method introduces selection bias. Consequently, the extent that the responses elicited from women in the first stage of the life cycle are representative of the views of the population of these women cannot be assessed. See Moser and Kalton (1972) for a discussion of the drawbacks of nonrandom sampling procedures.

cedures. Although this is a small sample size, it compares favourably with the sample sizes employed in earlier studies of residential area evaluation (Harman, 1975; Sanoff and Sawhney, 1972; Michelson, 1966). Moreover, the relatively even distribution of respondents among the four life cycle stages (Table 4.2) represents a significant improvement on the uneven samples used previously to examine life cycle effects on both residential area evaluation and residential choice.[9]

4.1.7 Characteristics of the Sample

The success of the sampling procedures can be assessed in more detail by examining Table 4.2 where profile statistics describing the social characteristics of the sample are presented. There are significant differences in work status and socioeconomic status between women in the first stage of the life cycle and all other women. As expected, more childless women are full time employees. Their work status is reflected in the higher personal and family income enjoyed by these women. This income contributes to the higher socioeconomic status of childless women which is underlined by their educational and occupational status.

There are no significant differences in the work and socioeconomic status of women in the other three stages of the life cycle. Thus, the sample design has been reasonably successful. Where the random sampling procedures were followed, variations in social characteristics other than

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[9] The studies by Harman (1975) and Brummell (1977) provide examples of these uneven samples. Brummell (1975) and Harman (1977) reported problems in obtaining equal numbers of respondents from each life cycle stage. The number of people in four life cycle stages ranged from 29 to 14 in the study by Brummell (1977).

TABLE 4.2

DESCRIPTION OF SAMPLE

	Life Cycle Stage				
N	1 (22)	2 (25)	3 (27)	4 (29)	
No. of housewives	6	22	25	21	***
No. of working women	16	3	3	8	***
No. with workplace outside residential area	12	3	2	2	
Mean hours of work outside home per week	35.5	26.6	27.3	28.4	
Mean time commuting (minutes)	39.4	56.7	31.3	21.5	
Median education	High School and Some Post Graduate	Finished High School	Some High School	Finished High School	**
Husband's median occupational status[a]	136	239	271	239	**
Woman's median income	$8,000-9,999	0	0	0	**
Median family income	$20,000-24,000	$16,000-20,000	$14,000-18,000	$14,000-18,000	
Mean age (years)	35.7	31.8*	44.1*	52.7*	
Mean no. of children	0*	2.4*	3.0*	2.4*	
No. in single family houses	18	17	24	27	

* F test, significant, $p \leq .05$; t test, significant at $p \leq .05$.

** Kruskal-Wallis, significant, $p \leq .05$.

*** χ^2, significant, $p \leq .05$.

a refers to occupational status on Blishen scale (Blishen and McRoberts, 1976).

life cycle status were controlled successfully.

Table 4.2 indicates that age and number of children in the family vary systematically through the life cycle. These additional aspects of life cycle status are considered in the interpretation of the empirical findings.

4.2 The Survey Instrument

The questionnaire[10] was designed to collect six types of information:

1. data on the relative importance assigned to sixteen residential area attributes,
2. descriptions of the frequency and location of participation in leisure activities,
3. data on preferences for ten residential areas,
4. descriptions of the perceived attribute levels in these ten areas,
5. data on residential history, and
6. personal data describing socioeconomic, life cycle, and work status.

The nature of these data and the methods by which they were collected are discussed in the order the data were elicited.

4.2.1 Attribute Importance

Data on the relative importance of residential area attributes was elicited first by a resistance-to-change experiment (Hinkle, 1965). The

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[10] The survey instrument is presented in Appendix C.

resistance-to-change experiment asks each woman to think of the attributes of a residential area she would consider if moving within the next year and if her family circumstances remained the same. Financial considerations were omitted deliberately from this preamble. Attribute importance describes residential area aspirations which may not be attainable in the short run.

In this context, each woman labels the poles of the residential area attributes as preferred and nonpreferred.[11] Then, each possible pair of attributes is presented with instructions for the respondent to indicate the attribute she would be more unwilling to change if forced to switch from the preferred to the nonpreferred pole of one of the attributes. The relative importance of each attribute is described by the number of times it is chosen over other attributes. This scale of attribute importance possesses ratio properties.

Three properties of attribute importance are recognized in this methodology. Women are asked to compare explicitly the relative importance of residential area attributes. The importance of each attribute is determined relative to the other attributes being considered. Moreover, these judgements of importance may reflect desires to obtain the attributes as much as they reflect desires to avoid it. Thirdly, these judgements of attribute importance are not restricted to attainable residential area aspirations. As well, this methodology makes no undue demands on

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[11] Harman (1975) reported that a middle range of the construct maybe preferred. In this study, women who expressed discomfort about choosing one pole were advised to indicate the pole towards which they would prefer to be. Few respondents reported this problem.

the respondent, since only two attributes are compared at one time. This is a simple judgement, well within human capabilities to integrate information (Miller, 1956; Dawes, 1975).

The resistance-to-change grid has one disadvantage.[12] The paired comparison exercise rapidly becomes boring and tedious. To avoid response fatigue, this task was placed at the beginning of the questionnaire. An initial analysis of the intransitivities in the data from the resistance-to-change grids confirmed the validity of this methodology. The number of intransitivities are low (Appendix D) indicating women were able to accurately express their judgements of attribute importance within the resistance-to-change grid.

4.2.2 Leisure Activities

There are two formats for eliciting information about participation in leisure activities: a time budget format, and recall methods. In the time budget format, all the activities undertaken during one or perhaps two days are recorded. Consequently, information about infrequent and sporadic activities is often incomplete (Michelson, 1975). For this reason, recall methods are adopted in this questionnaire. Accurate recall of an event depends on the length of time since the event took place and

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12 There may be a second disadvantage. The data from the resistance-to-change grid describe the relative importance of whole attributes. Brummell (1977) and Harman (1975) have suggested that people judge the importance of levels of attributes. Polynomial conjoint measurement analysis has been suggested as a means of defining the importance of attribute levels (Brummell, 1977). However, the data required for this technique cannot be specified for residential area attributes. The critical levels of residential area attributes which define just noticeable differences between areas are not known. Only vague attribute levels such as much greenery and quite a lot of greenery can be defined at the present time for residential area attributes.

the significance of the event to the respondent (Moser and Kalton, 1972, 331). Leisure activities which are performed infrequently are most likely to be recalled inaccurately. However, more personal significance may be attached to these events solely because of their rarity. The validity and reliability of the information collected in this survey is assessed by comparing the leisure activity patterns described by these recall data with activity patterns reported in other studies (Szalai, 1972; Chapin, 1974; Michelson, 1977).

Women were asked to estimate the number of times they participated in each activity during a week or month. In practice, other time periods, e.g. "every 6 months", were mentioned frequently. These responses were standardized by calculating the frequency of participation in each activity during a year.

Participation in each activity was rated on a five-point scale ranging from 1, "always in the residential area" to 5, "never in the residential area". Respondents were advised they could decide the boundaries of their areas "by thinking of the streets where you begin to feel at home when you return from another part of the city". These ratings provide an interval scale of the extent of local participation in leisure activities.

Information about the availability of facilities was elicited if women reported no local participation in a nonsocial recreational activity. Women were asked if facilities for participating in the activity were available in the present area. The opportunities for social activities were measured by asking each woman to rate the number of her closest fr[illegible] in [illegible]rea on a scale [illegible] 1, "all" 3 "[illegible]

This information describing the opportunities for undertaking each activity is used to determine if the reported rates of participation in leisure activities accurately reflect propensities to engage in leisure activities. Analysis[13] of the interaction between participation in leisure activities and availability of facilities showed that the availability of facilities has significant effects on the location of participation in leisure activities. Consequently, the data describing the location of leisure activities do not reflect accurately the propensities to conduct these activities within the residential area. However, availability of facilities is not related to life cycle status. The bias introduced by the significant relationship between the location of leisure activities and the availability of facilities does not influence life cycle effects on leisure activities.

4.2.3 Residential Area Preferences

Data on preferences were elicited by asking each woman to rank ten residential areas according to their desirability as places to live. The ten residential areas were presented as photographs of nine enumeration areas in Toronto and a card labelled your residential area. The photographs portrayed a range of residential areas.[14] Information describing access to three local facilities: shopping, schools and parks[15] was presented

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13 This analysis is described in Appendix E.

14 The photographs were chosen on the basis of results from a pretest where 100 first year geography students rated slides of thirty areas on eighteen attributes.

15 These facilities are perceived generally as local facilities which can be expected within a residential area (Harman, 1975; Toite, 1974; Hinshaw and Allot, 1972).

with each photograph. Two pairs of these areas differed primarily in terms of accessibility to these local facilities.

These photographs are a source of visual information. Although photographs have been employed frequently and successfully (Wilson, 1966; Peterson, 1967; Peterson, Bishop and Newman, 1970; Sanoff, 1970; Harman, 1975) as simulations of residential environments, responses are distorted by the preponderantly visual nature of the information they convey (Seaton and Collins, 1972; Ford and Fitzsimmons, 1974). These distortions are tolerated in this study because of the difficulties of exposing large numbers of people to a variety of residential areas. Nevertheless, in the subsequent interpretation of the data, it must be remembered that the preferences elicited in this study are based on visual information about each area and a brief description of the distances to facilities within each area.

Preferences were elicited as rankings because of the simplicity and efficency of this task. The small number of alternatives reduces the likelihood that respondents are unable to discriminate and rank these areas (Miller, 1956). Moreover, the variety of residential areas portrayed in the photographs insures that the areas can be discriminated. These two qualities of the methodology contribute to the validity of these data.

4.2.4 Attribute Levels

Information describing the attribute levels perceived in each was el in two rea was ted on thir resi-

area. The attributes were presented as 7 point rating scales ranging from 1, the preferred pole, to 7, the nonpreferred pole, e.g.:

1	2	3	4	5	6	7
Very Quiet	Quite Quiet	Slightly Quiet	Equally Noisy as Quiet	Slightly Noisy	Quite Noisy	Very Noisy

Each woman was free to designate either pole of the attribute as preferred. Consequently, these data were transformed later so that each number on the scale referred to the same category across respondents.[16]

Data on the perceived distances to facilities in each area were obtained more directly. Each woman rated three standard distances on a seven point scale ranging from 1, "very close", to 7, "very far away". These distances were rated for three facilities: schools, parks, and shopping areas. The distances correspond to those presented with the photographs. In addition, each woman was asked to estimate the distance from her house to the nearest location of each facility.

These data provide a comprehensive description of each woman's subjective information about the ten areas. With the judgements of attribute importance, these ratings are used to predict the preference rank assigned to each alternative.

4.2.5 Residential History

Descriptions of residential history were obtained by asking each

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16 For example, if a woman preferred the very public pole of the public-private attribute, her ratings were transformed. If she rated an area as quite public by assigning 2, this rating became 6. The ratings were transformed to agree with the preferred poles chosen by the majority of respondents. See Harman (1975) for another application of these rating scales which are discussed more generally in Bannister and Fransella (1971, 66-74).

woman to estimate her length of residence at the present location, and the number of residential moves she had completed since establishing her own household. In addition, each respondent was asked to estimate her length of residence in nine housing types. The housing types are differentiated on two dimensions: tenure and housing structure, to provide an exhaustive description of previous housing experiences.[17]

Together, these data provide a partial, quantitative description of each woman's residential history. Like all recall data, they are subject to reporting errors; however, this type of data has been used frequently and successfully in studies of residential mobility.

4.2.6 Personal Data

A variety of personal information was collected from each woman. It includes data on age, education, work status, husband's occupation, the ages and number of children in the household, and the total incomes before taxes of both the wife and the family. Most of this personal information was collected at the beginning of the interview; however, pretests showed women were hesitant to state their income and age. These questions were rephrased so that women were asked their year of birth and checked off the appropriate category on a card listing eleven income classes in the final part of the interview. These data provide a means of checking that the stratification factors defined earlier have controlled

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17 The nine housing types are as follows: rented apartment, owned apartment, rented duplex, owned duplex, rented townhouse, owned townhouse, rented house, owned house, and rented room.

successfully for differences in social characteristics other than life cycle status.

4.3 Summary

This chapter has described the data collected in the questionnaire survey and the social characteristics of the women from whom they were obtained. The sample design was reasonably successful. Eighty-five interviews were arranged with women in four stages of the life cycle who were of otherwise similar social background. This random sample was supplemented with seventeen interviews from childless women of slightly higher socioeconomic status. With the data obtained from these women, the hypotheses listed in Chapter 3 can now be tested. The next two chapters describe the results of this analysis.

CHAPTER 5

RESULTS: THE DIRECT EFFECTS OF LIFE CYCLE STATUS

This chapter presents the results from empirical tests of the first three hypotheses which describe the direct effects of life cycle status on residential area evaluation. Three life cycle effects were postulated in Chapter 3 as follows:

1. Life cycle effects on residential area preferences,
2. Life cycle effects on residential area aspirations, and
3. Life cycle effects on the accuracy of the linear compensatory evaluation function.

Each of these hypotheses is examined in turn. Conclusions with respect to each hypothesis are presented after the analysis.

The discussion of these empirical results is prefaced by a brief outline of the statistical techniques. The reasons for selecting each statistical tests are stated briefly. The chapter ends with a summary of the results.

5.1 The Statistical Techniques

Table 5.1 lists the statistical techniques used to test each hypothesis. The choice of each statistical test was guided by the nature of the data. Nonparametric statistical tests were applied when the data

TABLE 5.1

THE STATISTICAL TECHNIQUES

Hypothesis	Relationship	Statistical Tests
1	Life Cycle Effects on Residential Area Preferences	Kruskal-Wallis Mann-Whitney U MDPREF Canonical Correlation Analysis Pearson Correlation, r
1.1	Agreement on Residential Area Preferences is Related to Life Cycle Status	Kendall Coefficient of Concordance t-test
2	Life Cycle Effects on Residential Area Aspirations	Kruskal-Wallis Mann-Whitney U
3	Life Cycle Effects on the Accuracy of the Evaluation Function	Kendall Correlation, τ χ^2
4	Life Cycle Effects on Leisure Activities	Kruskal-Wallis Mann-Whitney U
5	Life Cycle Effects on Residential History	Kruskal-Wallis Mann-Whitney U
6	Leisure Activities and Residential Area Aspirations	Spearman Correlation, ρ Kendall Correlation, τ
7	Residential History and Residential Area Aspirations	Kendall Correlation, τ Spearman Correlation, ρ

violated the assumptions of parametric statistical tests. These violations include significant departures from normality in the distribution of a variable, significant differences in the variance of a variable among stages in the life cycle, and data possessing no more than ordinal or nominal properties.

These nonparametric statistical tests are useful alternatives to familiar parametric tests such as analysis of variance, t-tests, and Pearson correlation coefficients. The Kruskal-Wallis test is a nonparametric one-way analysis of variance. It tests whether ranks from k-independent groups have been drawn from the same population or from populations with equal medians (Siegel, 1956, 184). The Mann-Whitney U statistic indicates if ranks from two independent groups have been drawn from the same population. Both the magnitude and location of observations are considered in this statistic which is a powerful alternative to the t-test (Bradley, 1968; Siegel, 1956, 116).

The level of association between ordinal variables is measured by three statistics. Both the Kendall correlation coefficient, τ, and the Spearman rank correlation coefficient, ρ, measure the level of association between two sets of rankings. The Kendall correlation coefficient is most appropriate when there are tied observations (Siegel, 1956). The association between more than two sets of ranks is described by the Kendall Coefficient of Concordance, W.

Life cycle effects on the preference ranks are examined by a one-way analysis of variance. Then, the significant pairwise differences between life cycle stages are identified by Mann-Whitney U statistics. This procedure decomposes life cycle effects on residential area

preferences.

In addition, the preference ranks are analysed by a multidimensional scaling technique MDPREF (Carroll and Chang, 1970) which considers the overall pattern of the rankings. Canonical correlation analysis is used to analyse the information obtained from this scaling procedure.

The analysis of life cycle effects on the level of agreement on residential area preferences in each stage of the life cycle is based on parametric and nonparametric statistical tests. The nonparametric statistics are applied when the raw preference ranks are analysed. Information from the scaling procedure describing the agreement on residential area preferences within each life cycle stage is examined by t-tests.

Kolmogorov-Smirnov tests showed that the ratings of attribute importance are not distributed normally. Although parametric statistical tests are sufficiently robust to tolerate minor deviations from normality, the sample size in each life cycle stage exaggerates the effects of [illegible] deviations (Guenther, 1964). Consequently, the analysis of life cycle effects on residential area aspirations is based on nonparametric statistical tests.

Since preferences are elicited as ordinal data, life cycle effects on the predictive accuracy of the linear compensatory evaluation function are examined by Kendall correlation coefficients. χ^2 statistics are used to test the relationships between life cycle status and the assignment of zero attribute importance, and the links between zero attribute importance and the accuracy of the evaluation function.

The distributions of the variables describing participation in leisure activities and residential history ([illegible] fica

normality. Furthermore, the variances of several of these variables are not homogeneous among the four life cycle stages. Consequently, the effects of life cycle status on leisure activities and residential history are analysed by nonparametric statistics. Kruskal-Wallis and Mann-Whitney U statistics are used to decompose these life cycle effects. The influence of these variables on residential area aspirations is assessed entirely in terms of nonparametric statistics. Kendall correlation coefficients are used to analyse the location ratings of leisure activities because of the possibility of tied observations.

5.2 Life Cycle Effects on Residential Area Preferences.

The basic relationship which this study examines is the effect of life cycle status on residential area evaluation. The preference ranks assigned to alternative residential areas result from the evaluation process. Thus,

Hypothesis 1: Preferences for residential areas are related to life cycle status.

The Kruskal-Wallis statistics (Table 5.2) show that the preference ranks assigned to ten residential areas are not related to life cycle status. There are no significant differences in median preference ranks through the life cycle.

Nevertheless, there are four significant pairwise differences in residential area preferences (Table 5.3). The preferences of women caring for preschool age children are distinguished from those of childless women. Compared to women in the fourth and first stages of the life cycle,

TABLE 5.2

ONEWAY ANALYSIS OF VARIANCE OF

PREFERENCE RANKINGS

Area	x^2	Significance
1	2.6	*
2	.5	*
3	4.4	*
4	3.1	*
5	3.2	*
6	2.9	*
7	5.8	*
8	2.7	*
9	1.3	*
10	2.3	*

* not significant, $p \leq .10$, degrees of freedom = 3.

TABLE 5.3

PAIRWISE DIFFERENCES IN PREFERENCE RANKINGS, MANN-WHITNEY U STATISTICS

Area	Pairs of Life Cycle Stages											
	1&2		1&3		1&4		2&3		2&4		3&4	
	n_1 22	n_2 25	n_1 22	n_3 27	n_1 22	n_4 29	n_2 25	n_3 27	n_2 25	n_4 29	n_3 27	n_4 29
1	328.5		356.0		394.5		341.0		376.5		402.5	
2	255.0		268.5		303.5		336.0		386.5		423.5	
3	249.0		314.0		389.0		387.0		476.5*		458.5	
4	340.5		339.5		311.0		291.5		287.0		342.0	
5	241.5		245.0		238.5		306.0		295.5		344.5	
6	197.5*		237.5		264.5		346.0		401.0		414.0	
7	364.0*		369.0		323.0		310.5		255.5*		308.5	
8	222.5		250.5		324.0		346.0		436.5		460.5	
9	304.0		349.5		364.0		364.5		383.5		386.5	
10	333.5		341.5		391.0		330.0		359.5		400.5	

* significant, $p \leq .10$, 2 tailed.

women caring for young children greatly prefer area 7.[1] This is a suburban area characterized by wide, tree-lined streets, new single family houses and large lots. In the second life cycle stage this area is judged the most desirable alternative after each woman's present area.

Area 6 is considered more desirable by women who have never borne children. This semirural area of large lots and single family homes is ranked sixth in both the first and second stages of the life cycle. However, the median rank is significantly higher for women in the first stage of the life cycle.

In a similar fashion, area 3 is considered more desirable by women in the fourth life cycle stage than by women raising preschool age children. This is an inner city area of row housing, and small lots. It is ranked ninth by women in the second life cycle stage whereas women in the fourth stage of the life cycle assigned this area the eighth median rank.

Overall, this analysis provides little support for Hypothesis 1. Residential area preferences are related to child-rearing responsibilities in the expected direction. However, these life cycle effects are not statistically significant.

The weak effects of life cycle status may be due to the limitations of the analysis. The preference ranks assigned to each area have been considered separately in these statistical tests. To test the hypothesis fully, life cycle effects on the complete pattern of residential area preferences are examined. The analysis indicates whether life cycle status is related to the complete pattern of preference ranks despite its limited

effects on the perceived desirability of individual areas.

The preference ranks elicited from the women in each life cycle stage are analysed by a multidimensional scaling algorithm, MDPREF (Carroll and Chang, 1970). This algorithm calculates a joint configuration of people and objects. In this analysis, the ten residential areas and the women in each life cycle stage are located in a geometric space. The solution is chosen to maximize the similarity between the preference order elicited from each woman and the preference order calculated from the configuration. The order of the distances between each area and the location of each woman is made as similar as possible to her elicited preference order. Four configurations of residential areas (Figures 5.1 to 5.4), one for each stage in the life cycle, were calculated using this algorithm.

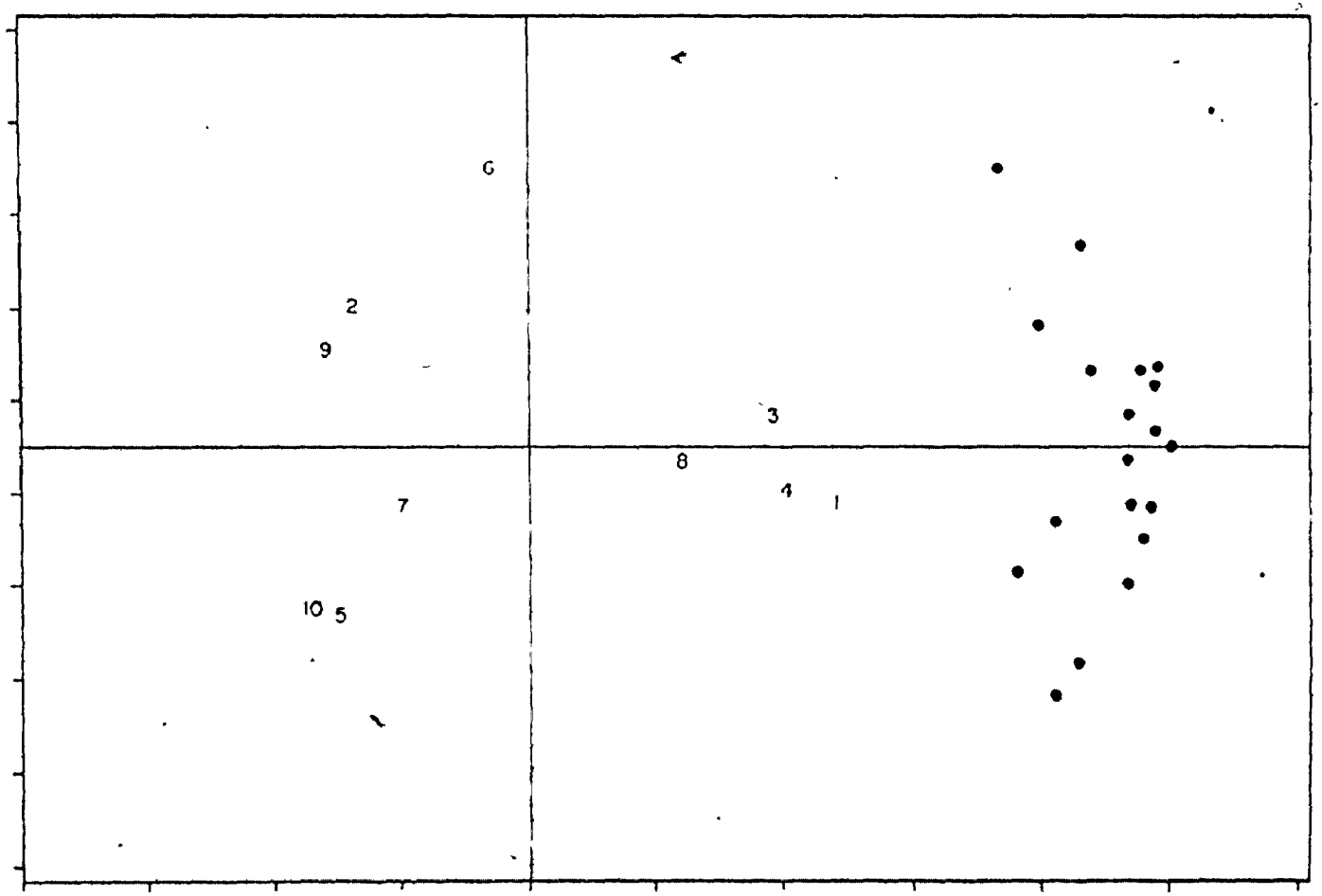
A visual comparison of these configurations indicates minor variations in the desirability of five areas through the life cycle. In all four stages of the life cycle, each woman's present residential area, area 10, is most preferred, and areas 1, 3, 4, and 8 are least preferred. The remaining five areas are preferred to both the inner city areas of row housing, areas 3 and 8, and the suburban areas dominated by apartments, areas 1 and 4. However, the desirability of areas 2, 5, 6, 7, and 9 relative to one another appears to differ among the four configurations.

To assess the significance of these variations in residential area preferences, a canonical correlation analysis was performed. The dimensions of each configuration are defined by the projections of each area onto the axes of the space. The canonical correlation analysis measures the correlation between the residential area preference configurations for each possible pair of life cycle stages.

The significant dimen[illegible] of each conf[illegible] were

FIGURE 5.1

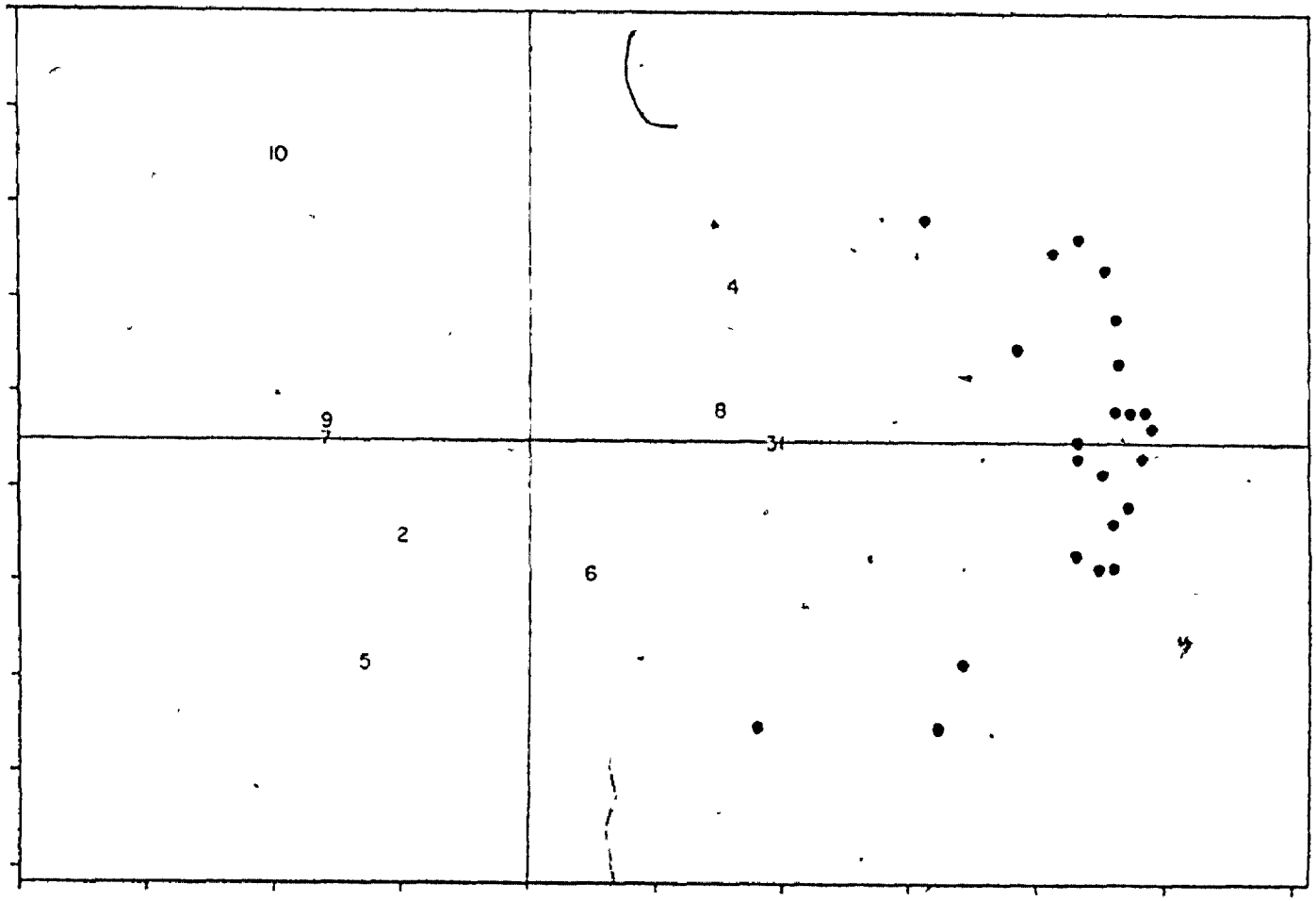
PREFERENCE CONFIGURATION OF FIRST LIFE CYCLE STAGE



● represents respondents.
1, ..., 10 represent areas.

FIGURE 5.2

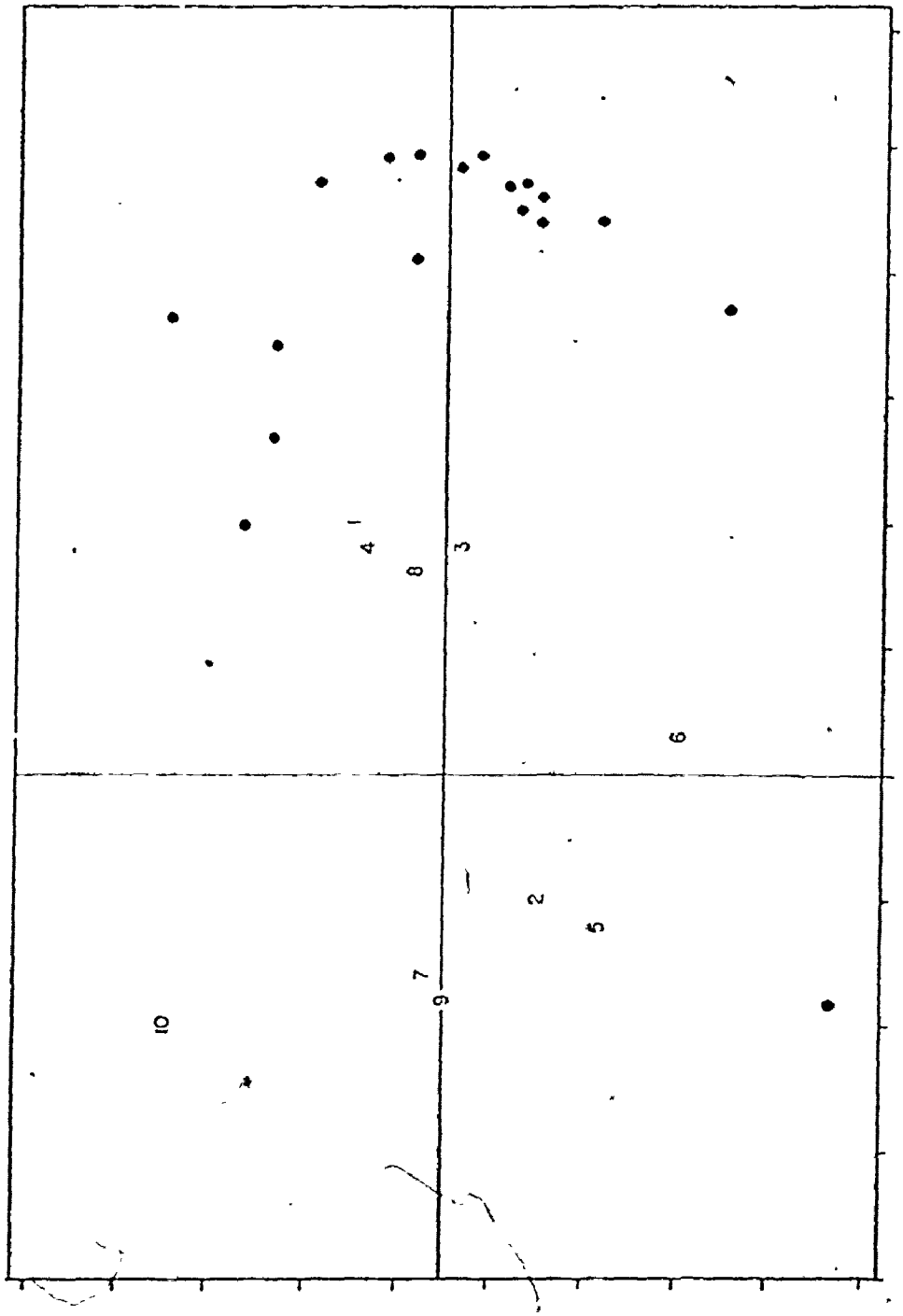
PREFERENCE CONFIGURATION OF SECOND LIFE CYCLE STAGE



● represents respondents.
1, ..., 10 represent areas.

FIGURE 5.3

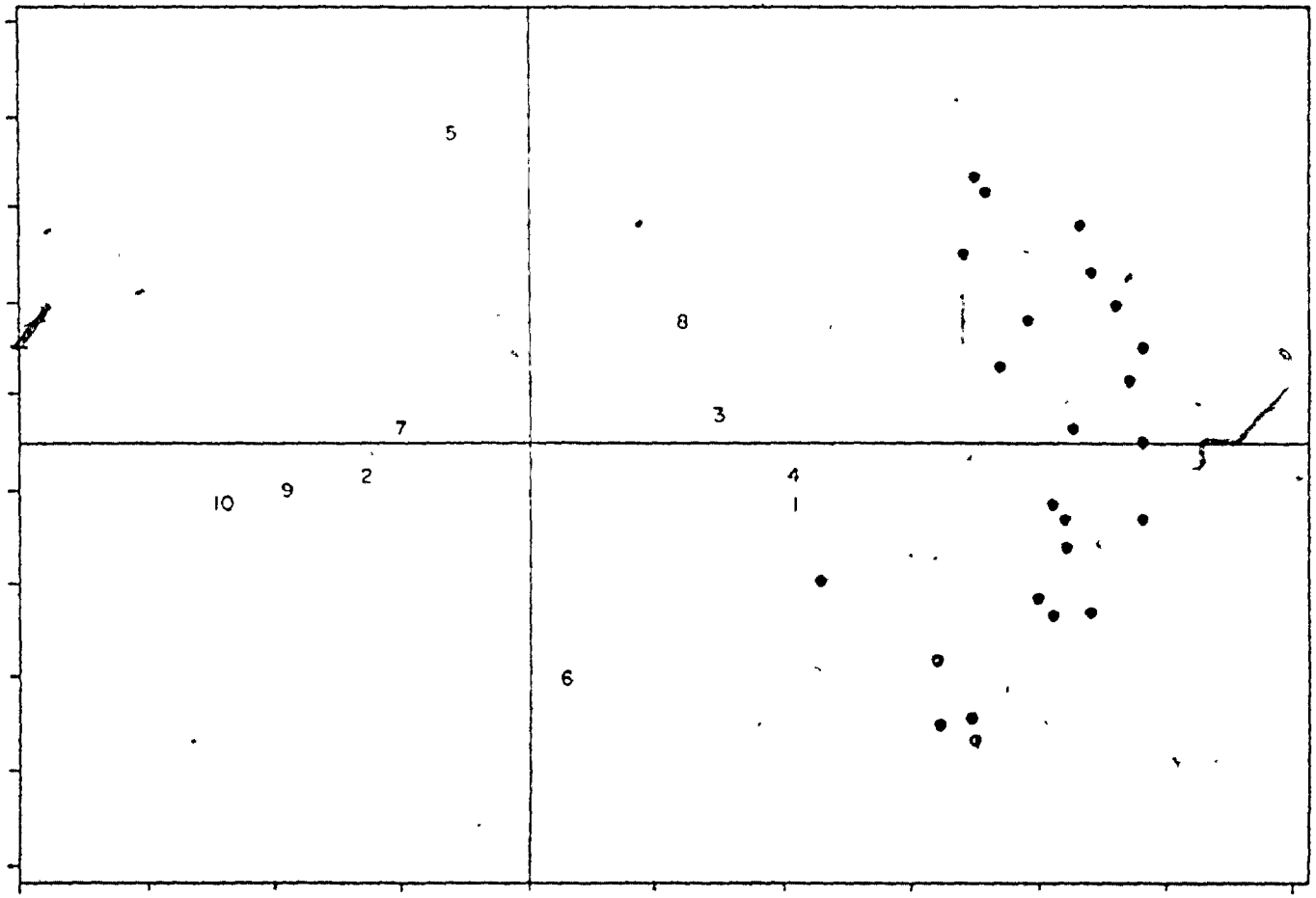
PREFERENCE CONFIGURATION OF THIRD LIFE CYCLE STAGE



● represents respondents.
1, ..., 10 represent areas.

FIGURE 5.4

PREFERENCE CONFIGURATION OF FOURTH LIFE CYCLE STAGE



• represents respondents.
1, ..., 10 represent areas.

each dimension. Those dimensions which described more than five percent of the total were retained in the analysis (Table 5.4). Three dimensions are significant in the configuration calculated for women in the first life cycle stage. Four significant dimensions emerge in each of the other configurations.[2]

The results of the canonical correlation analysis (Table 5.5) indicate that life cycle status has limited effects on residential area preferences. Eleven of the 15 possible canonical variates are significant ($p \leq .05$). This large number of significant canonical variates underlines the similarity of the preference configurations among the four life cycle stages. Moreover, the first dimension of each preference configuration is similar in all life cycle stages. The highest levels of association between preference configurations are observed for the first canonical variate between each pair of life cycle stages. In all cases, the first dimension of each preference configuration has the largest coefficient on this canonical variate.

Nevertheless, the life cycle effects described earlier are apparent, albeit weakly, in the pattern of significant ($p \leq .05$) canonical variates. The residential area preferences of women in the child-raising periods of the life cycle are most similar. Three significant ($p \leq .05$) canonical variates describe the association between the preference configurations of the second and third stages in the life cycle. In contrast, only one significant canonical variate refers to the preferences of women who have never borne children and each of the child-raising stages of the life cycle. The preferences of women in the first life cycle stage are dis-

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[2] The axes of each configuration are calculated by an Eckhart-Young factorization procedure. The Carroll

TABLE 5.4

SIGNIFICANT DIMENSIONS OF PREFERENCE CONFIGURATIONS

Life Cycle Stage	Sum of Eigenvalues	Percent of Eigenvalue Sum				Total Percentage of Eigenvalues Included
		Significant Dimension				
		1	2	3	4	
1	1814.99	69.2	8.5	7.0		83.7
2	1952.05	71.6	9.2	7.6	5.7	94.1
3	2227.50	65.2	10.2	8.1	5.4	88.9
4	2392.49	55.5	14.4	9.7	6.2	85.8

TABLE 5.5

RESULTS OF CANONICAL CORRELATION ANALYSIS

Life Cycle Stages in Analysis	Canonical Coefficients Dimension				Canonical Correlation	x^2	Significance
	1	2	3	4			
1	-.97*	-.18	.14		.99	44.2	**
2	-.99*	-.04	.01	.05			
1	-.98*	-.03	.20		.99	41.9	**
3	-.99*	-.06	.08	.03			
1	.98*	.10	.11		.99	49.4	**
4	.94*	.28	.07	.23			
1	.13	-.17	.98*		.91	16.1	***
4	.24	.66	.71*	-.10			
2	-.97*	-.07	.19	-.02	.999	63.5	**
3	-.98*	-.03	-.13	.15			
2	.12	-.95*	.24	-.09	.98	28.9	**
3	.09	-.92*	-.37	.10			
2	-.17	-.25	-.95*	.01	.94	12.1	***
3	-.17	-.26	.39	-.86*			
2	.97*	.05	-.25	-.02	.99	54.6	**
4	.96*	-.24	.04	.04			
2	-.24	.06	-.93*	-.27	.99	27.7	**
4	-.13	-.45	.82*	-.30			
3	.88*	-.13	.37	-.25	.99	55.4	**
4	.89*	-.43	.04	-.15			
3	-.47	-.20	.67*	-.54	.98	23.9	**
4	-.42	-.65*	.38	-.50			

* largest canonical coefficient.
** significant, $p \leq .001$.
*** significant, $p \leq .01$.

tinguished weakly from the residential area preferences of women raising children.

Analysis of the distances between residential areas in each preference configuration confirms that life cycle status has weak effects on residential area preferences (Table 5.6). The distances between residential areas in the four preference configurations are correlated significantly ($p \leq .01$). There is overall agreement on residential area preferences among the four life cycle stages. However, tests of the differences between these correlation coefficients indicate that the level of correlation between the first and second life cycle stages is significantly ($p \leq .10$) less than the correlation between the first and fourth life cycle stages.[3] The preferences of women who have never borne children are most similar to those of women in the fourth life cycle stage. These results confirm that residential area preferences vary slightly through the life cycle in response to child-raising responsibilities.

Altogether, these findings provide only weak support for Hypothesis 1. They show that residential area preferences differ slightly between the stages of the life cycle when women are free of child care responsibilities and the second life cycle stage when women are most involved in child rearing activities. However, these life cycle effects are minor in comparison to the evidence of agreement on residential area preferences among life cycle stages.

Variations in residential area preferences within each stage of the life cycle may contribute to these weak results. This possibility is

TABLE 5.6

PEARSON CORRELATIONS AMONG AREA DISTANCES

IN PREFERENCE CONFIGURATIONS

Life Cycle Stage	Life Cycle Stage		
	1	2	3
1			
2	.404**		
3	.478**	.549**	
4	.626**	.437**	.595**

** significant, $p \leq .01$, N = 120.

examined in the corollary to Hypothesis 1.

Hypothesis 1.1: The level of consensus on residential area preferences is related to life cycle status.

The greatest consensus is expected among women in the second stage of the life cycle who are caring for preschool age children. Greater consensus on residential area preferences in the second life cycle stage may account for the slight differences in residential area preferences observed between this stage in the life cycle and the two life cycle stages when women are free of child-rearing responsibilities.

The level of association among the preference ranks from women in each life cycle stage ranges from .657 in the second stage of the life cycle to .540 in the fourth life cycle stage (Table 5.7). There are no significant differences in the level of consensus on residential area preferences. Residential area preferences are associated significantly ($p \leq .01$) in all stages of the life cycle.

Examination of the mean distance between women in each preference configuration confirms that within group homogeneity is similar in all life cycle stages. There are no significant differences in these distances between the four life cycle stages (Table 5.8).[4] On the basis of these findings, Hypothesis 1.1 is rejected. Agreement on residential area preferences within each life cycle stage does not vary.

The results for Hypotheses 1 and 1.1 indicate that life cycle status is not related strongly to residential area preferences; however,

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[4] t-tests revealed no significant ($p \leq .05$) differences between each

TABLE 5.7

KENDALL COEFFICIENT OF CONCORDANCE FOR PREFERENCE RANKINGS

Life Cycle Stage	W	χ^2	Significance	N
1	.616	121.95	*	22
2	.657	147.82	*	25
3	.588	142.89	*	27
4	.540	140.99	*	29

* significant, $p \leq .001$, degree of freedom = 15.

TABLE 5.8

DISTANCES BETWEEN WOMEN IN PREFERENCE CONFIGURATION

Life Cycle Stage	Mean Distance	Variance	N
1	.669	.192	22
2	.688	.082	25
3	.765	.139	27
4	.821	.092	29

the life cycle effects are in the expected direction. Women caring for preschool age children judge suburban areas to be more desirable. This result supports previous arguments that preferences for residential areas reflect beliefs that these areas best accommodate family activities.[5] Furthermore, the level of agreement on residential area preferences is highest among women in the second life cycle stage as expected.

According to the conceptualization of residential area evaluation postulated in Chapter 2, the small magnitude of these life cycle effects is due to agreement on residential area aspirations through the life cycle. However, the direction of these life cycle effects suggests that the procedures by which preferences were elicited have confounded the results. The areas included in the choice set may not differ significantly on the residential area attributes affected by life cycle status. Alternatively, the use of photographs to represent residential areas may have biassed the preference rankings. Photographs convey preponderantly visual information. Consequently, visual characteristics of residential areas may be emphasized in the preference rankings of these ten residential areas. Life cycle effects on residential area preferences will emerge only if life cycle status has significant effects on the importance assigned to these visual characteristics. For these reasons, life cycle status may have more pronounced effects on residential area perferences than these results suggest. To elucidate this relationship between life cycle status and residential area preferences, the effects of the family

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[5] This argument has been articulated by Bell (1958), Gans (1961), Timms (1971) and (1973).

life cycle on residential area aspirations are examined next.

5.3 Life Cycle Effects on Residential Area Aspirations

Residential area aspirations are described by the relative importance assigned to residential area attributes. Thus, life cycle effects on residential area aspirations are examined as follows:

Hypothesis 2: Life cycle status is related to the importance of residential area attributes.

The median importance assigned to each residential area attribute varies through the life cycle (Table 5.9). There is agreement on the relative importance of only two attributes. Safety is considered the most important attribute in all life cycle stages[6] and the social status of an area is assigned least importance by all women. Otherwise, the importance assigned to residential area attributes appears to vary through the life cycle.

The significance of life cycle effects on the assignment of attribute importance is measured by a one-way analysis of variance. The results of this analysis (Table 5.10) show that life cycle status has significant ($p \leq .05$) effects on the importance assigned to five residential area attributes. Two attributes refer to the spaciousness of the area: lot size and distance between buildings. Access to local facilities is described by distance to parks and to schools. The fifth attribute

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[6] The residential area attributes which are assigned the highest median importance by the entire sample have been identified in earlier studies of residential area evaluation. Hinshaw and Allot (1972) found safety and access to good schools were considered the most important reside

TABLE 5.9

MEDIAN RATINGS OF ATTRIBUTE IMPORTANCE

Attribute	Total Sample	Life Cycle Stage			
		1	2	3	4
	N = 103	N = 22	N = 25	N = 27	N = 29
Quiet	7.0	5.3	8.1	7.0	6.7
Greenery	6.0	6.5	6.8	4.8	5.8
Friendly	10.2	10.2	10.0	9.1	10.9
Housing type	7.5	6.5	7.8	9.0	7.3
Well kept	11.4	9.5	10.7	11.6	12.0
Open space	6.2	6.5	7.5	6.2	5.2
Lot size	7.1	7.5	7.0	8.0	4.4
People like us	6.9	3.5	7.0	6.0	9.0
Status	2.8	1.5	2.9	1.2	3.1
Building distance	4.4	4.3	6.4	4.0	3.7
Safety	14.1	14.2	14.5	14.0	14.0
Land use	8.8	8.2	8.1	9.9	9.0
Privacy	7.9	8.5	8.4	7.0	6.2
Access to shops	6.8	8.3	5.0	6.8	10.0
Access to parks	5.9	8.5	5.3	5.9	5.2
Access to schools	9.8	10.5	6.0	13.0	3.9

TABLE 5.10

ONEWAY ANALYSIS OF VARIANCE OF ATTRIBUTE IMPORTANCE

Attribute	χ^2	Significance
Quiet	5.4	N.S.
Greenery	4.3	N.S.
Friendly	1.6	N.S.
Housing type	.2	N.S.
Well kept	7.1	***
Open space	3.7	N.S.
Lot size	10.8	**
People like us	10.3	**
Status	3.4	N.S.
Building distance	13.4	*
Safety	3.2	N.S.
Land use	2.9	N.S.
Privacy	6.2	***
Access to shops	6.2	***
Access to parks	9.2	**
Access to schools	35.2	*

* significant, $p \leq .01$, degrees of freedom = 3.
** significant, $p \leq .05$, degrees of freedom = 3.
*** significant, $p \leq .10$, degrees of freedom = 3.
N.S not [illegible]fica[illegible]

concerns the importance of living in an area where the residents are believed to be like oneself. In addition, there are weaker ($p \leq .10$) life cycle effects on the importance assigned to privacy, access to shopping, and the level of upkeep in an area. On the basis of these results, Hypothesis 2.1 is accepted. Life cycle status is related significantly to the importance of selected residential area attributes.

Tests for pairwise differences (Table 5.11) distinguish the residential area aspirations of women in the fourth life cycle stage from the aspirations of women in earlier stages of the life cycle. Twelve of the 15 significant ($p \leq .05$) pairwise differences refer to women in the fourth life cycle stage. The remaining significant relationships contrast the aspirations of women in the two child-raising periods of the life cycle. Changes in residential area aspirations through the life cycle are related directly to the ages of children in the household.

Furthermore, residential area aspirations do not differ between childless women in the first stage of the life cycle and women in the two child-raising stages of the life cycle. There are no significant differences in the assignment of attribute importance between the first life cycle stage and the second and third life cycle stages. These results support previous evidence that women who have not yet borne children frequently anticipate the needs of children in residential area evaluation (Michelson, 1977, 302).

The pattern of these significant pairwise differences in the assignment of attribute importance confirms that life cycle effects on residential area aspirations are focussed on selected residential area attributes. All but one of the residential area attributes identified in

TABLE 5.11

PAIRWISE DIFFERENCES IN ATTRIBUTE IMPORTANCE
MANN-WHITNEY U STATISTICS

Attribute	Pairs of Life Cycle Stages											
	1&2		1&3		1&4		2&3		2&4		3&4	
	n_1 22	n_2 25	n_1 22	n_3 27	n_1 22	n_4 29	n_2 25	n_3 27	n_2 25	n_4 29	n_3 27	n_4 29
Quiet	247.5		291.5		289.0		400.5		399.5		366.0	
Greenery	245.0		367.5		353.5		463.5*		445.5		343.5	
Friendly	281.0		322.0		304.0		372.5		341.0		324.0	
Housing type	271.5		246.0		259.5		280.0		321.5		421.0	
ell kept	260.5		252.0		208.5*		294.0		252.5*		319.0	
pen space	249.0		316.5		399.5		389.5		472.5*		459.5	
ot size	286.5		263.5		419.0*		297.0		444.0		527.5*	
eople like us	201.5		229.0		162.5*		370.0		275.0		249.5*	
tatus	202.0		264.5		235.0		386.5		343.0		320.0	
uilding distance	195.0		320.0		344.0		461.5*		494.5*		385.5	
Safety	249.0		301.0		339.5		376.5		415.0		414.0	
nd use	262.5		259.5		288.0		317.0		346.5		424.5	
ivacy	291.5		346.0		357.5		373.5		382.5		375.0	
cess to shops	334.5		346.0		263.0		302.0		226.0*		275.5*	
ccess to parks	332.5		339.0		369.0		307.0		341.0		404.5	
ccess to schools	345.5		244.5		473.5*		215.5*		412.5		602.5*	

significant, $p \leq .05$, 2 tailed.

the analysis of variance is shown to have significant pairwise differences in attribute importance. Moreover, 93 percent of the significant relationships between pairs of life cycle stages refer to the attributes which were significant in the analysis of variance. Variations in the perceived values of these selected residential area attributes will contribute to life cycle effects on residential area preferences.

Four of the pairwise differences refer to the spaciousness of the residential area. Women in the fourth life cycle stage assign significantly less importance to spaciousness than women raising children. The largest differences are with women in the second life cycle stage who are caring for preschool age children. These women assign almost twice as much importance to open space and the distance between buildings (Table 5.9). This decline in the importance of spaciousness has been linked to decreasing interest and ability to maintain large lots during later stages of the life cycle (Michelson, 1966). This trend is apparent for women in the fourth life cycle stage. Although more importance is assigned to maintenance during the fourth life cycle stage, these women also expressed a greater desire for small lots (Table 5.12).

The ages of children have a secondary influence on the importance of spaciousness. Women in the second stage of the life cycle assign significantly more importance to greenery, the distance between buildings, and the amount of public open space than women whose children are school age. Mothers of active school age children are more concerned with the availability of private outdoor space as described by lot size.

The ages of children in the household are related directly to the importance of access to schools. As this r rea

TABLE 5.12

FREQUENCY OF CHOOSING POLES OF ATTRIBUTES

Attribute Pole	Life Cycle Stage			
	1 N = .22	2 N = 25	3 N = 27	4 N = 29
Quiet	22	25	27	29
Noisy	0	0	0	0
Much greenery	22	24	27	27
Little greenery	0	1	0	2
Friendly	22	25	27	29
Unfriendly	0	0	0	0
Single family houses	22	25	27	29
Apartments	0	0	0	0
Well kept	22	25	27	29
Unkempt	0	0	0	0
Much open space	20	24	26	26
Little open space	2	1	1	3
Large lots	21	24	26	24
Small lots	1	1	1	5
People like us	14	22	20	22
People different from us	8	3	7	7
High status	17	20	20	21
Low status	5	5	7	8
Buildings far apart	20	23	26	25
Buildings close together	2	2	1	4
Safe	22	25	27	29
Dangerous	0	0	0	0
All residential	22	23	25	26
Mixed commercial and residential	0	2	2	3
Private	22	24	26	26
Public	0	1	1	3
Shopping nearby	20	25	21	27
Shopping far away	2	0	6	2
Park nearby	20	25	22	26
Park far away	2	0	5	3
Schools nearby	15	25	25	23
Schools far away	7	0	2	6

attribute is emphasized by women caring for school age children. Unexpectedly, women in the second life cycle stage assign less importance to access to schools than women who have never borne children. The significance of this attribute to women without children is due to their negative evaluation of this residential area attribute. Schools far away were considered more desirable than nearby schools by 31.8 percent of the women in the first life cycle stage (Table 5.12). This contrasts with only 14.6 percent in the total sample. Thus, the importance assigned to this attribute by women withoutchildren reflects their desire to avoid close proximity to schools.

The remaining pairwise differences refer to the aspirations of women in the fourth life cycle stage. These women assign significantly more importance to the social ambience of residential areas. Specifically, they are more concerned that residents in an area be like themselves. This is unexpected, for other authors (Bell, 1958; Foote *et al.*, 1960) have emphasized that the desire to insure suitable playmates for children figures significantly in residential area evaluation. In these results, these concerns are slightly evident in the second stage of the life cycle where only three women considered a heterogeneous population to be a desirable residential area attribute.

The importance assigned to the attribute, people like oneself, in the fourth stage of the life cycle may be due to increased reliance on the local area for social contacts (Stea, 1970). Carp (1970a) and Regnier (1974) noted that apart from social interaction with grown children, social contacts are more localized late in the life cycle.

more importance. Nevertheless, the increased importance assigned to this attribute does not necessarily reflect desires to live in an area where people are like oneself. Almost one quarter of the women in the fourth life cycle stage preferred a heterogeneous residential population. Although this is a smaller proportion than in either the first or third life cycle stages, it suggests that older women do not necessarily wish to limit their social contacts to people of the same social background.[7]

As expected, access to shopping facilities is assigned most importance by women in the fourth stage of the life cycle. Free of child-rearing responsibilities, these women have more time to devote to shopping and other recreational activities. The increased desirability of access to commercial facilities later in the life cycle has been reported previously (Michelson, 1967; Carp, 1970b). It has been argued that older people consider the convenience of nearby commercial activities to outweigh any undesirable externalities of these facilities. This trend is weakly apparent in these data where only two women in the fourth life cycle stage considered shops far away more desirable than nearby shopping (Table 5.12).

However, the data indicate that women in the second stage of the life cycle are most definite that nearby access to facilities is desirable. Without exception these women preferred nearby access to three local facilities (Table 5.12). Yet, the median importance assigned to these

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[7] Note further that the mean age of women in this stage of the life cycle is 52.7 years. Since these women are comparatively young, their mobility is less likely to be restricted. Consequently, they are able to maintain socia[illegible] of si[illegible]

three accessibility attributes is lower in the second life cycle stage than in any other part of the life cycle. This may be due to the mobility of women in the second life cycle stage. The majority of women caring for preschool age children are drivers, whereas only 38 percent of women in the fourth life cycle stage drive. The importance assigned to accessibility attributes does not differ between the first and second stages of the life cycle where similar proportions of women drive.

The strong relationship between life cycle status and residential area aspirations evident in these results contrasts with the weak pattern of life cycle effects on residential area preferences. Moreover, a new pattern of life cycle effects is apparent in these results. The ages of children in the household appear to have the most significant effects on residential area aspirations. The aspirations of women in the fourth life cycle stage whose children are grown up differ most from the aspirations of women presently caring for children. There are significant differences in residential area aspirations between the two child raising stages of the life cycle.

These results elucidate the earlier findings that life cycle status has only weak effects on residential area preferences. Life cycle effects on residential area aspirations are focussed on eight attributes. Variations in residential area preferences through the life cycle will emerge only if the alternatives are judged to differ on these eight residential area attributes, and these attributes are salient in preference formation.

A preliminary analysis of the attribute ratings for each area (Appendix F) showed that the ten residential areas were perceived to differ on the attr[illegible] are related to life

an examination of the associations between the preference ranks and attribute importance demonstrated that visual characteristics of residential areas are related strongly to the elicited preference orders. The importance of these visual characteristics, specifically, housing type and the mixture of commercial and residential land uses in an area, is not related to life cycle status. The use of photographs to represent residential areas has masked the effects of life cycle status on residential area preferences.

This problem has been reported previously (Peterson, 1967; Harman, 1975). Peterson (1967) identified a separate criterion of residential area evaluation describing the quality of the photograph. Harman (1975) reported that important criteria of residential evaluation were omitted when photographs were used to elicit salient residential attributes. These findings lend further support to the conclusion that life cycle effects on residential area preferences have been masked by the methodology of this study. Due to the use of photographs, life cycle effects on residential area aspirations are only weakly apparent in the elicited preference ranks.

5.4 Life Cycle Effects on the Evaluation Function

The significant relationship between residential area aspirations and life cycle status has a second, indirect effect on residential area evaluation. Residential area aspirations are hypothesized to influence the accuracy of the evaluation function. Thus,

Hypothesis 3: The predictive accuracy of the linear compensatory evaluation function is related to life cycle status.

The [illegible] of the eva[illegible] [illegible] is [illegible] by

the Kendall rank correlation, τ, between the preference ranks elicited from each woman and the ranks predicted by a linear compensatory evaluation function as defined in Chapter 2 (p.32). The frequency that the most preferred alternative is predicted accurately is a second measure of the accuracy of the evaluation function.

The linear compensatory evaluation function predicts residential area preferences accurately (Table 5.13), but its predictive power declines through the life cycle. The mean correlation between the predicted and elicited preference ranks is significant ($p \leq .05$) at each stage in the life cycle. The magnitude of these correlation coefficients compares favourably with those reported in other studies (Pras and Summers, 1975; Hall, 1976). Nevertheless, the level of association declines from the first to the fourth life cycle stage. The results (Table 5.14) of an analysis of variance of these correlation coefficients confirm that the predictive accuracy of this evaluation function is related significantly ($p \leq .05$) to life cycle status.

A less regular decrease in the accuracy of the linear compensatory evaluation function is evident in the frequency that the most preferred alternative of each woman is predicted accurately (Table 5.15). Once again, the smallest proportion of most preferred areas are predicted accurately in the fourth life cycle stage. A χ^2 test reveals (Table 5.16) no significant association between life cycle status and the prediction of the most preferred alternative.

The failure of this evaluation function to predict the most preferred alternative of each woman may be due to the effects of familiarity. Several authors (Hourihan, 1975; Clark and Cadwallader, 1973; Johnston, 1973; Troy, 1973) have noted that people often prefer their own r

TABLE 5.13

MEAN CORRELATION BETWEEN PREDICTED

AND ELICITED PREFERENCE RANKINGS

Life Cycle Stage	$\bar{\tau}$	N
1	-.68*	22
2	-.59*	25
3	-.52*	27
4	-.43*	29
Total Sample	-.54*	103

* significant, $p \leq .05$, 1 tailed.

TABLE 5.14

ANALYSIS OF VARIANCE OF CORRELATION

BETWEEN PREDICTED AND ELICITED PREFERENCES

Source	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between	.8512	3	.2837	6.413*
Within	4.3798	99	.0442	
Total	5.2310	102		

* significant, $p \leq .001$.

TABLE 5.15

FREQUENCY OF PREDICTION OF MOST PREFERRED AREA

Life Cycle Stage	Number Predicted Accurately	Number Predicted Incorrectly
1	6	16
2	9	16
3	6	21
4	4	25
Total	25	78

TABLE 5.16

χ^2 TEST OF FREQUENCY OF PREDICTION OF MOST PREFERRED AREA

	Life Cycle Stage 1	2	3	4	
Predicted Accurately	6 (5.3)	9 (6.1)	6 (6.5)	4 (7.0)	25
Predicted Incorrectly	16 (16.7)	16 (18.9)	21 (20.5)	25 (22.5)	78
	22	25	27	29	

$\chi^2 = 3.77$; significance, $p \leq .29$, degrees of freedom = 3.

area to any alternative. This trend is apparent in these data. The majority of women ranked their present areas as most preferred regardless of its advantages and disadvantages relative to the nine alternatives (Section 5.2). No information about the familiarity of each area was considered in the evaluation function. This may be one reason why the most preferred alternatives have not been predicted accurately.

Nevertheless, the linear compensatory evaluation function has been shown to predict accurately the overall trend in each woman's preferences. Moreover, the predictive accuracy of this evaluation function declines significantly through the life cycle. On this basis, Hypothesis 3 is accepted. Life cycle status has significant effects on the accuracy of the linear compensatory evaluation function.

The largest decrease in predictive power occurs between the first and fourth life cycle stages (Table 5.13). The evaluation function performs equally well ($p \leq .05$) in the two child-rearing stages of the life cycle. This pattern of life cycle effects recalls the relationship between residential area aspirations and life cycle status. Women in the fourth life cycle stage are distinguished once again from women in the earlier stages of the life cycle.

The reason for this pattern of life cycle effects is not immediately apparent. The original hypothesis that the frequency of assigning zero importance to residential area attributes has significant effects on the accuracy of the linear compensatory evaluation function is not supported by these results. A χ^2 test (Table 5.17) shows that the frequency of assigning zero importance is not associated significantly ($p \leq .05$) with life cycle status.

TABLE 5.17

χ^2 TEST OF FREQUENCY OF ZERO ATTRIBUTE

IMPORTANCE

	Life Cycle Stage 1	2	3	4	
Frequency of More than Zero Importance	336 (336.4)	384 (382.3)	411 (412.9)	444 (443.4)	1575
Frequency of Zero Importance	16 (15.6)	16 (17.7)	21 (19.1)	20 (20.6)	73
	352	400	432	464	

χ^2 = .55 ; significance, $p < .90$, degrees of freedom = 3.

Another possible explanation of the decline in the predictive accuracy of the evaluation function appears equally plausible. The predictive accuracy of the linear compensatory evaluation function depends on the saliency of the attributes considered in preference formation. If nonsalient attributes are included in the evaluation or salient attributes are omitted, the accuracy of this evaluation function declines (Pras and Summers, 1975; Hall, 1976). The observed life cycle effects on the accuracy of the evaluation function may be due to changes in the saliency of residential area attributes through the life cycle.

Residential area attributes salient in the later stages of the life cycle may not be included in this analysis. Michelson (1970) has suggested that easy access to restaurants and cultural facilities assumes greater importance once the parental career is ended. The level of activity in an area, i.e., movement on the street, and the outdoor activities of children, has also been identified as a salient residential area attribute late in the life cycle (Carp, 1970b; Michelson, 1972). The omission of these attributes from the analysis may well account for the observed decline in the predictive accuracy of the linear compensatory evaluation function at later stages in the life cycle.

5.5 Summary

The direct effects of life cycle status on residential area evaluation have been examined in three parts. Life cycle status has only weak effects on residential area preferences; however, these life cycle effects are in the expected direction. Life cycle status has been shown to have more significant effects on the evaluation process itself. Residential

area aspirations, and the predictive accuracy of one evaluation function are related to life cycle status.

The significant role of child care responsibilities is emphasized in these results. The aspirations of women who are presently caring for children contrast with the aspirations of women whose child care responsibilities are complete. These changes in residential area aspirations are evident in the weak effects of life cycle status on residential area preferences. Women who have never borne children share the residential area aspirations of women presently caring for children. Anticipation of the needs of children prior to their birth has a major influence on residential area aspirations.

The weak relationship between life cycle status and residential area preferences is due to the methodology by which residential area preferences were elicited. Visual characteristics of residential areas are associated with the preference ranks elicited for nine photographs of residential areas. The importance of these visual characteristics is not related to life cycle status. The use of photographs to represent residential areas has obscured the effects of life cycle status on residential area preferences. The associations between the importance of attributes that are related to life cycle status and residential area preferences are confounded by the strong effects of visual characteristics on preferences for photographs of residential area.

Yet, life cycle effects on residential area aspirations are significant. Stage in the family life cycle is related to the importance of eight residential area attributes that describe the social characteristics and the physical and built features of an area. There is agreement through

the life cycle on the relative importance of the attributes that are most and least significant in residential area evaluation. Life cycle effects on residential area preferences will emerge only if three conditions are satisfied:

1) the alternative areas are judged different on the eight critical attributes,

2) these attributes are salient in the evaluation, and

3) the areas are considered similar on the most important attribute, namely, safety

These results provide a possible explanation of previous findings that regardless of social characteristics, people prefer a single family house which is associated with a residential area (Lansing and Hendricks, 1967; Hinshaw and Allot, 1972; Michelson, 1977, 35). Life cycle status is not related to the importance of either housing type or the mixture of commercial and residential land uses in an area. Only if respondents are asked to consider the qualities of residential areas in detail will life cycle effects on residential area preferences emerge.

This is not to discount the significance of life cycle effects on residential area aspirations. Changes in the importance of residential area attributes through the life cycle affect the perceived desirability of living in a particular area. Several studies (Lansing and Hendricks, 1967; Troy, 1973) have found that satisfaction with the present residential area is related to the attributes on which life cycle status has significant effects.

The findings reported in this chapter confirm that the family life

CHAPTER 6

RESULTS: ROLE OF LEISURE ACTIVITIES AND RESIDENTIAL HISTORY

The purpose of this chapter is to examine the extent that differences in residential history and changes in leisure activities contribute to life cycle effects on residential area evaluation. The results of empirical tests of four hypotheses are presented in this chapter. The role of leisure activities is examined first. The effects of residential history are considered in the second part of the chapter. The chapter ends with a summary of the conclusions.

The analysis of each intervening variable is undertaken in two stages. Consider the role of leisure activities. First, the relationship between life cycle status and the location and frequency of leisure activities is tested. This analysis is the basis for the subsequent examination of the relationship between leisure activities and residential area aspirations.

Significant associations between leisure activities and attribute importance are classified according to the scheme outlined in Figure 6.1. The mediating influence of leisure activities is described by the associations between residential area attributes and leisure activities which are related to life cycle status. Participation in these leisure activities contributes to life cycle effects on residential area aspirations. Significant associations which refer to leisure activities that are not

related to life cycle status describe the independent influence of leisure activities on residential area aspirations. The role of residential history is examined in a similar fashion.

6.1 Life Cycle Status and Leisure Activities

The first step in testing whether leisure activities mediate life cycle effects on residential area aspirations is to show that participation in leisure activities is related to life cycle status. Two aspects of leisure activities; the frequency and location of participation, are considered in Hypothesis 4.

Hypothesis 4: Life cycle status is related to the frequency of participation in leisure activities and the extent that these activities are localized within the residential area.

Life cycle effects on the frequency of participation in leisure activities are examined by analysing the number of times that each woman reported she undertook an activity. The analysis of the location of leisure activities is based on the ratings of each activity according to the proportion of times it was performed in the present residential area.

6.1.1 Life Cycle Status and the Frequency of Leisure Activities

The average number of times that each activity is performed during a year at each stage in the life cycle is shown in Table 6.1. Brief social encounters, i.e., greeting people, chatting with neighbours, and phone calls are the most frequent leisure activities in all stages of the life cycle. These encounters occur daily or every other day, unlike going for walks and shopping which are undert[illegible] on averag[illegible]

TABLE 6.1

MEAN FREQUENCY OF ACTIVITIES (YEARLY)

Activity	Total Sample n = 103	Life Cycle Stage 1 n = 22	2 n = 25	3 n = 27	4 n = 29
Shopping	120.9	118.2	129.6	89.9	144.2
Participate sports	57.2	57.5	57.4	42.9	70.2
Public entertainment	27.3	19.8	44.4	26.7	18.6
Club participation	36.5	41.8	32.7	38.0	34.3
Cultural activites	16.4	20.4	24.2	10.2	12.4
Churchgoing	27.3	24.8	22.3	23.9	36.6
Visit parks	37.2	42.6	52.6	42.8	14.6
Go to restaurants	29.3	31.7	37.4	22.8	26.6
Extension classes	24.0	35.1	31.2	18.6	14.4
Drives and walks	136.6	149.3	151.4	95.3	152.6
Children's activites	68.5	**	98.9	42.8	**
Greet people	1456.8	5044.5	611.4	346.0	463.3
Neighbouring	235.9	193.6	303.6	202.9	240.3
Visit people	34.4	41.7	31.0	13.0	51.7
Be entertained	43.0	53.1	64.9	26.0	32.4
Phone	304.2	233.7	288.3	257.7	414.6
Help people	50.1	31.9	63.7	63.0	40.3
Percent time at home (weekly)	39.4	27.7	37.8	39.8	49.1

** no [illegible] was col[illegible]

day. All other leisure activities occur more sporadically at intervals ranging from less than once a month to twice a week.

The results of the analysis of variance (Table 6.2) indicate that life cycle status has significant ($p \leq .05$) effects on the frequency of participation in six leisure activities. These include three recreational pastimes; cultural activities, attending extension classes, and visiting parks. Three of the most frequent leisure activities; greeting people, chatting with neighbours, and shopping are also related significantly ($p \leq .05$) to life cycle status. Life cycle status is related weakly ($p \leq .10$) to the frequency of escorting children to extracurricular activities and being entertained in others' homes.

Furthermore, life cycle status is related significantly ($p \leq .05$) to the proportion of time women spend at home (Table 6.2). The largest increases in time at home occur at the beginning and end of the child rearing stages of the life cycle. In the fourth stage of the life cycle, women spend almost twice as much time at home compared to women who have not yet borne children (Table 6.1). On the basis of these results, the first part of Hypothesis 4 is accepted. Life cycle status has significant effects on the frequency of participation in selected social and recreational activities.

The leisure activities of women raising children are distinguished from those of women without child care responsibilities. Sixteen significant ($p < .10$) relationships (Table 6.3) between pairs of life cycle stages refer to the first life cycle stage and the two child-raising stages of the life cycle. The activities of women in the fourth life cycle stage are differentiated by 9 significant pairwise differences.

TABLE 6.2

ONEWAY ANALYSIS OF VARIANCE OF FREQUENCY OF ACTIVITIES

Activity	χ^2	Significance
Shopping	8.6	**
Participate sports	4.6	N.S.
Public Entertainment	5.0	N.S.
Club participation	3.1	N.S.
Cultural activities	7.8	**
Church going	3.5	N.S.
Visit parks	18.5	***
Go to restaurants	1.6	N.S.
Extension classes	7.7	**
Drives and walks	2.2	N.S.
Children's activities	4.8	*
Greet people	10.9	***
Neighbouring	7.9	**
Visit people	5.9	N.S.
Be entertained	7.0	*
Phone	2.9	N.S.
Help people	4.4	N.S.
Percent time at home (weekly)	14.7	***
Percent time at home inside	19.0	***
Percent time at home outside	20.3	***

*** significant, $p \leq .01$, degress of freedom = 3.
** significant, $p \leq .05$, degrees of freedom = 3.
* significant, $p \leq .10$, degrees of freedom = 3.
N.S. not significant.

TABLE 6.3

PAIRWISE DIFFERENCES IN FREQUENCY OF ACTIVITIES,
MANN WHITNEY U STATISTICS

Activity	Pairs of Life Cycle Stages					
	1&2 n_1 22 n_2 25	1&3 n_1 22 n_3 27	1&4 n_1 22 n_4 29	2&3 n_2 25 n_3 27	2&4 n_2 25 n_4 29	3&4 n_3 27 n_4 29
Shopping	269.0	392.5*	284.5	446.0*	324.0	226.5*
Participate sports	353.0*	362.0	333.5	319.0	298.5	339.0
Public entertainment	221.5	313.0	369.5	414.5	485.0*	444.5
Club participation	364.0*	349.0	351.0	309.0	314.5	337.5
Cultural activities i.e. libraries, museums	245.0	367.5	411.0	450.0*	492.5*	408.0
Church going	267.0	282.5	250.0	326.5	271.5	313.0
Visit parks	183.0*	281.0	466.0*	414.5	583.5*	550.5*
Go to restaurants	274.5	353.0	331.0	388.5	377.0	337.5
Extension classes	276.0	377.5*	408.5*	419.0	458.5*	391.0
Drives and walks	280.0	350.5	299.5	395.5	350.5	311.0
Children's activities	**	**	**	437.5*	**	**
Greet people	369.5*	429.0*	448.0*	413.5	417.5	381.5
Neighbouring	163.5*	379.0	221.0	431.5*	439.5	337.0
Visit people	299.5	385.0	404.5	418.5	445.5	406.5
Be entertained	370.0*	407.5*	417.5*	345.5	375.5	379.0
Phone	283.5	267.0	274.5	291.0	314.0	373.0
Help people	216.5	293.0	377.0	384.0	486.0*	439.5
Percent time at home (weekly)	129.0*	155.0*	144.0*	304.0	300.0	356.0
Percent time at home inside (weekly)	454.0*	466.0*	424.5*	275.0	224.0*	305.0
Percent time at home outside (weekly)	96.0*	128.0*	235.0	400.0	526.0*	505.0

* significant, $p \leq .05$, 2 tailed. ** no information was collected.

Four significant pairwise differences refer to the leisure activities of women in the two child-rearing stages of the life cycle. Unlike residential area aspirations, the frequency of participation in selected leisure activities is related to both the ages and presence of children in the household.

The pattern of these pairwise differences confirms that life cycle effects are focussed on selected activities. There are significant pairwise differences in the frequency of participation in all the leisure activities identified by the analysis of variance. Moreover, 80 percent of the significant relationships between pairs of life cycle stages refer to activities which were significant in the analysis of variance.

Three life cycle effects are apparent in these results. Participation in all leisure activities is most frequent in the first life cycle stage. The frequency of participation in recreational activities declines significantly from the first to the fourth stage in the life cycle. Finally, participation in child-oriented activities decreases between the second and third stages of the life cycle.

Six significant relationships attest to a decline in social participation after the birth of children. Participation in only one social activity increases once child care responsibilities begin. Women in the second stage of the life cycle have more frequent contacts with neighbours. This finding is expected for previous studies have demonstrated that the continual presence of young children encourages local social contacts (Michelson, 1969a). However, the frequency of social interaction does not change once child care responsibilities are ended. Thus, the work status of women in the first life cycle stage rather than

freedom from child care responsibilities accounts for their high rate of social interaction. Full-time employment provides more opportunities for social contact than those available to women who do not work.

Child care responsibilities have a greater impact on participation in recreational activities. The frequency of participation in nonsocial leisure pastimes declines from the second life cycle stage when child care responsibilities begin. Furthermore, the results (Table 6.3) show that decreased participation in these activities in the fourth life cycle stage is due primarily to the completion of child care responsibilities. Four significant pairwise differences between the second and fourth stages in the life cycle refer to participation in family-oriented activities such as trips to parks and beaches. However, participation in individual recreation such as sports and shopping does not decrease in the fourth stage of the life cycle. There is no evidence that passive leisure pastimes are substituted for active recreation as Chapin (1974) and Rapoport and Rapoport (1975) have reported. Child care responsibilities are completed before aging restricts active participation in leisure activities.

Child care responsibilities also account for minor variations in the frequency of leisure activities between the second and third life cycle stages. Women caring for preschool age children accompany their children to more activities and participate more frequently in family-oriented activities such as cultural activities, and contact with neighbours. Once children enter school, women are involved less frequently in children's recreational activities.

These results demonstrate that the frequency of participation in leisure activities changes through the life cycle in response to work

status and child care responsibilities. The pattern of life cycle effects on the frequency of leisure activities contrasts with changes in residential area aspirations through the life cycle. Differences in the frequency of leisure activities between women caring for children and women free of child care responsibilities predominate. There are significant differences in leisure activities between women in the first stage of the life cycle and women in the second and third life cycle stages which did not appear in the analysis of residential area aspirations. This suggests that life cycle effects on residential area aspirations are mediated only partially by changes in the frequency of participation in leisure activities through the life cycle. The residential area aspirations of women in the first stage of the life cycle would seem to be quite independent of the frequency of participation in leisure activities.

6.1.2 Life Cycle Status and the Location of Activities

Two life cycle effects on the location of leisure activities are expected. First, nonsocial leisure activities are expected to be localized during the child-rearing stages of the life cycle. This follows from evidence that family activities based in the home are emphasized during these two periods of the life cycle (Chapin, 1974; Rapoport and Rapoport, 1975). Second, it is expected that all leisure activities, both social and recreational, are concentrated in the local area during the fourth life cycle stage. Carp (1970a), Michelson (1970) and Stea (1970) have reported that declining physical and social mobility encourages local participation in activities at this stage in the life cycle.

The median ratings of the location of leisure activities are

presented in Table 6.4. Unlike the frequency of participation in leisure activities, few consistent trends are apparent in these ratings. Participation in sports, church attendance, walks and drives for pleasure, and children's activities are conducted most frequently in the residential area. These local activities contrast with the dispersed locations of trips to parks, restaurants, and public entertainment, and visits to friends. However, the median ratings over the entire sample do not represent the ratings of any one life cycle stage.

The locations of six leisure activities are related significantly ($p \leq .05$) to life cycle status (Table 6.5). These include four social activities: greeting people, being entertained in others' homes, phoning, and helping people. Life cycle status has significant ($p \leq .05$) effects on the locations of only two recreational activities; attendance at public entertainment, and trips to restaurants. Three of these activities were mentioned earlier as the most spatially dispersed leisure activities. The locations of three additional recreational activities are related weakly ($p \leq .10$) to life cycle status. The second part of Hypothesis 4 is accepted; life cycle status has significant effects on the concentration of leisure activities within the residential area.

The significant differences in the locations of leisure activities between pairs of life cycle stages show that stage in the life cycle affects the location of selected activities (Table 6.6). There are significant pairwise differences referring to each of the activities identified in the analysis of variance. Moreover, 95 percent of the pairwise differences refer to these 9 activities.

Changes in child care responsibilities through the life cycle

TABLE 6.4

MEDIAN LOCATION RATINGS* OF LEISURE ACTIVITIES

Leisure Activity	Total Sample n = 103	Life Cycle Stage			
		1 n = 22	2 n = 25	3 n = 27	4 n = 29
Shopping	2.1	3.0	1.9	1.6	2.6
Participate sports	1.9	1.4	2.0	1.8	2.5
Public entertainment	4.7	4.9	4.3	4.1	4.9
Club participation	3.9	4.6	2.5	3.5	3.0
Cultural activities	2.4	1.5	1.9	1.4	4.6
Churchgoing	1.3	4.2	1.2	1.9	1.3
Visit parks	4.6	4.7	3.7	4.7	4.9
Go to restaurants	4.7	4.8	3.8	4.3	4.8
Extension classes	4.1	4.6	3.0	1.5	3.0
Drives and walks	1.5	1.7	1.9	1.3	1.4
Children's activities	1.7	**	1.3	3.0	**
Greet people	2.3	3.6	2.1	2.0	2.1
Visit people	4.6	4.6	4.6	4.6	3.3
Be entertained	3.9	4.2	4.2	3.1	4.0
Phone	4.0	4.8	3.4	3.6	3.7
Help people	2.3	3.8	2.0	1.4	1.5

* 1 indicates always in residential area, 5 indicates never in residential area.
** no information was collected.

TABLE 6.5

ONEWAY ANALYSIS OF VARIANCE OF LOCATION RATINGS

Leisure Activity	χ^2	Significance
Shopping	5.9	N.S.
Participate sports	0.6	N.S.
Public entertainment	12.6	***
Club participation	1.8	N.S.
Cultural activities	7.1	*
Churchgoing	4.1	N.S.
Visit parks	7.0	*
Go to restaurants	9.3	**
Extension classes	6.1	*
Drives and walks	1.8	N.S.
Children's activities	1.2	N.S.
Greet people	12.0	***
Visit people	2.2	N.S.
Be entertained	10.2	**
Phone	9.5	**
Help people	14.9	***

*** significant, $p \leq .01$, degrees of freedom = 3.
** significant, $p \leq .05$, degrees of freedom = 3.
* significant, $p \leq .10$, degrees of freedom = 3.
N.S. not significant.

TABLE 6.6

PAIRWISE DIFFERENCES IN LOCATION OF LEISURE ACTIVITIES
MANN-WHITNEY U STATISTICS

Leisure Activity	Pairs of Life Cycle Stages											
	1&2		1&3		1&4		2&3		2&4		3&4	
	n_1 22	n_2 25	n_1 22	n_3 27	n_1 22	n_4 29	n_2 25	n_3 27	n_2 25	n_4 29	n_3 27	n_4 29
Shopping	345.0		375.0		367.5		357.0		297.0		273.0	
Participate sports	25.5		36.0		46.0		18.5		20.5		31.0	
Public entertainment	269.0*		286.5*		174.5		263.0		123.0*		123.0*	
Club participation	136.5		142.5		172.0		69.0		91.0		124.5	
Cultural activities	190.0		182.0		133.5		196.0		121.0*		86.0*	
Churchgoing	115.0*		114.0		145.0		112.0		137.5		159.0	
Visit parks	283.0		198.5		109.0		161.5*		85.5*		118.5	
Going to restaurants	295.0		287.0		264.0		253.5		188.0*		208.5*	
Extension classes	90.5		44.5*		43.5		40.5		36.0		10.5	
Drives and walks	208.5		253.0		258.5		269.0		277.0		220.5	
Children's activities	**		**		**		44.0		**		**	
Greet people	403.0*		424.0*		414.5*		327.5		331.0		316.5	
Visit people	112.0		87.5		82.5		99.5		94.0		66.5	
Be entertained	280.0		424.5*		319.0		435.5*		322.5		215.0*	
Phone	379.5*		420.0*		456.5*		354.0		360.5		377.0	
Help people	343.0*		303.0*		287.5*		281.0		250.0		137.0	

* significant, $p \leq .05$, 2 tailed.
** no information was collected.

underly life cycle effects on local participation in leisure activities. Of 23 significant pairwise differences, 10 contrast the locations of activities in the first life cycle stage with their locations in the second and third life cycle stages. Similarly, women in the fourth life cycle stage are distinguished from women raising children by 7 significant differences in the locations of leisure activities.

The significant ($p \leq .05$) pairwise differences reveal two life cycle effects on the location of leisure activities. Participation in social activities is most dispersed in the first stage of the life cycle. The location of recreational activities is most localized in the child rearing stages of the life cycle. The end of child care responsibilities in the fourth life cycle stage signals increasing spatial dispersion of leisure activities.

The spatial dispersion of social activities in the first life cycle stage contrasts with the local pattern of social contacts in all other life cycle stages. Ten significant pairwise differences attest to the strength of this relationship (Table 6.6). The previous analysis of the frequency of participation in leisure activities demonstrated that women in the first life cycle stage interact least frequently with their neighbours. These results suggest further that all social activities are most dispersed spatially in the first life cycle stage. Full time employment in the first life cycle stage appears to account for this trend since social activities remain localized after child care responsibilities are completed. Freedom from child care responsibilities allows women to maintain dispersed social contacts which originate at work. Women who do not work have fewer opportunities to initiate and maintain

social contacts outside their residential areas.

Child care responsibilities restrict participation in leisure activities outside the residential area. This life cycle effect is most apparent between the two child-raising periods of the life cycle and the fourth life cycle stage. The recreational activities of women in the fourth life cycle stage are spatially dispersed compared to the localized activities of women raising children. Women in the first life cycle stage also reported more frequent nonlocal participation in recreational activities. These two results demonstrate that local participation in recreational activities is related directly to child-rearing responsibilities. As expected, local participation in recreational activities is emphasized in the second life cycle stage when child care is most demanding.

Life cycle effects on the location of leisure activities are due to changes in child rearing responsibilities and work status through the life cycle. The cessation of full time employment associated with the birth of children and the focus on joint family activities during the child rearing stages of the life cycle contribute to the localization of all leisure activities. Once child care responsibilities are completed, recreational activities are dispersed outside the residential area.

On the basis of these results, Hypothesis 4 is accepted. Life cycle status is related to both the frequency of participation in leisure activities and the extent of local participation in these activities. However, life cycle effects on the location of leisure activities are somewhat independent of life cycle effects on the frequency of participation in these activities. Life cycle status has significant effects on both the location and frequency of participation in only 5 [illegible]

The pattern of life cycle effects on leisure activities are similar in one respect to life cycle effects on residential area aspirations. Both the leisure activities and residential area aspirations of women in the fourth stage of the life cycle are distinguished from those of women in earlier stages of the life cycle. It is likely that decreased participation in recreational activities and the increased dispersion of these activities outside the residential area in the fourth life cycle stage contribute to life cycle effects on residential area aspirations.

The analysis has also demonstrated that the leisure activities of women in the first life cycle stage differ significantly from the leisure activities of women raising children. Specifically, women without child care responsibilities participate more frequently in selected social and recreational activities. Moreover, these activities are undertaken more frequently outside the residential area. Yet, the analysis of residential area aspirations showed that women in the first stage of the life cycle share the residential area aspirations of women caring for children. It appears that changes in leisure activities through the life cycle only partially mediate the effects of life cycle status on residential area aspirations. The significant differences in leisure activities between the first life cycle stage and the two child rearing stages of the life cycle do not appear to influence residential area aspirations.

6.2 Leisure Activities and Residential Area Aspirations

To establish the extent that leisure activities mediate life cycle effects on residential area aspirations, the relationship between participation in leisure activities and the assignment of attribute impor

is now examined. Both the frequency and location of participation in leisure activities are examined.

Hypothesis 6: The assignment of importance to residential area attributes is related to the frequency of participation in leisure activities and the extent of local participation in these activities.

The association between the assignment of attribute importance and the frequency of participation in leisure activities is examined first. Both analyses are based on rank order correlation coefficients which describe the level of association between the ratings of attribute importance and the reported frequency of leisure activities, and the ratings of the location of leisure activities, respectively.

6.2.1 The Frequency of Leisure Activities

The frequency of participation in 13 leisure activities is associated significantly ($p \leq .05$) with the importance assigned to 12 residential area attributes (Table 6.7). In addition the proportion of weekly time spent at home is associated significantly ($p \leq .05$) with the importance assigned to 3 attributes. Of the 41 correlation coefficients, 27 are significant ($p \leq .05$). Fourteen coefficients describe weaker ($p \leq .10$) associations between attribute importance and the frequency of participation in leisure activities. As expected the levels of association described by these correlation coefficients are low, ranging from -.16 to .34. The frequency of participation in leisure activities is only one determinant of residential area aspirations. Nevertheless, the number of significant ($p \leq .10$) correlation coefficients is slightly larger than the number

TABLE 6.7

CORRELATIONS BETWEEN FREQUENCY OF LEISURE ACTIVITIES AND ATTRIBUTE IMPORTANCE

Leisure Activity	Quiet	Greenery	Friendly	Housing type	Well kept	Open space	Lot size	People like us	Status	Building distance	Safety	Land use	Privacy	Access to shops	Access to parks	Access to schools
Shopping	.01	-.10	.03	.02	.12	-.09	-.23*	.04	.06	-.07	-.02	.17**	-.07	.31*	.07	-.20*
Participate sports	.11	.02	-.01	.05	-.05	.02	.00	-.02	-.11	.08	-.07	.02	.21*	.04	-.15	-.04
Public entertainment	.09	-.07	.05	-.03	-.11	-.13	-.03	.07	.14	.09	-.10	.09	.07	-.01	.01	-.03
Club participation	.00	-.03	.05	-.09	-.16**	-.06	.04	.18**	-.03	-.11	.01	.04	.20*	-.04	.02	-.05
Cultural activities	.15	.10	-.09	.06	-.05	.04	.09	-.11	-.09	.15	.06	.09	.21*	-.16**	-.18**	-.07
Churchgoing	.03	-.09	.01	.12	.09	-.16	-.12	-.06	.08	.02	.05	.08	-.04	.04	-.08	-.04
Visit parks	-.10	-.01	.15	-.04	-.07	.13	.30*	-.01	-.19	.20*	.07	-.01	-.11	-.15	.04	-.01
Go to restaurants	-.23*	.06	.06	.10	.02	-.15	-.13	-.11	.19	.00	.03	.15	.19**	-.05	-.23*	-.20*
Extension classes	-.04	.03	-.19**	-.07	-.14	.10	.16	.01	.02	.19**	.01	.05	.20*	-.03	-.10	-.06
Drives and walks	.13	-.03	.18**	-.06	.00	-.18**	-.01	.21*	-.03	-.05	.11	-.09	-.08	.05	.02	-.20*
Children's activities	.10	-.05	.10	-.07	.00	.03	.08	.18	.23*	.34*	-.02	.07	.13	-.01	-.22	-.28*
Greet people	-.02	.08	.09	-.11	-.18**	.15	.05	.01	-.03	.24*	.03	.00	.05	-.17**	-.03	-.04
Neighbouring	-.07	-.04	.10	.04	.01	.06	.05	.04	.03	.12	.13	.01	-.02	-.14	-.11	-.02
Visit people	-.03	.29*	.08	-.03	.03	.06	.00	-.01	-.11	-.03	.02	-.15	-.16	-.10	.08	.07
Be entertained	.04	.04	-.07	-.10	-.07	-.08	.04	-.10	-.12	-.05	-.10	.15	.11	.11	-.02	.04
Phone	-.02	-.12	.00	-.08	-.03	-.23*	-.15	.11	.09	-.11	.02	.10	.04	.05	.15	.01
Help people	-.06	.10	.21*	.04	-.03	-.12	-.02	.22*	.14	-.06	.13	.13	.12	-.17**	-.14	-.16
Percent time at home (weekly)	.08	-.19**	.00	-.04	.09	-.10	-.22*	.20*	.02	-.07	-.02	.22*	.06	.13	-.10	-.10
Percent time at home inside (weekly)	-.01	-.07	.04	.01	-.27*	.03	-.09	.00	-.02	-.01	-.02	-.06	-.05	.12	.15	.01
Percent time at home outside (weekly)	.00	.02	-.08	-.04	.24*	-.02	.04	-.01	.03	.07	-.01	.08	.10	-.10	-.14	.01

* significant, $p \leq .05$, 2 tailed Spearman rank correlation, N = 103.
** significant, $p \leq .10$ 2 tailed Spearman rank correlation, N = 103.

expected to be significant due to chance variation alone. On this basis, the first part of Hypothesis 6 is accepted. The frequency of participation in leisure activities is related to the importance of residential area attributes, albeit more weakly than expected.

These results indicate further that the family life cycle affects residential area aspirations through changes in the frequency of leisure activities. Twenty-four of the 41 significant ($p \leq .10$) coefficients refer to leisure activities that are related to life cycle status. Only 2 of the activities identified in the analysis of life cycle effects on the frequency of leisure activities; being entertained in others homes, and chatting with neighbours, are not associated with the importance of any residential area attribute.

The mediating influence of the frequency of participation in leisure activities is focussed on those residential area attributes for which life cycle effects were observed earlier (Chapter 5, Section 5.3). Of the 24 significant associations, 19 refer to the importance of these attributes. These include the significant correlation, ($\rho = .31$), between shopping visits and the importance of access to shops, and the association, ($\rho = .28$), between the importance of access to schools and the frequency of accompanying children to activities.

Apart from this mediating influence, the frequency of participation in leisure activities has a marked independent influence on residential area aspirations. Forty-one percent of the significant ($p \leq .10$) correlations refer to activities that are not related to life cycle status. These activities are associated with the importance of 6 residential area attributes on which life cycle has

associations account for 65 percent of the independent influence of frequency of participation in leisure activities. Both the independent and mediating influences of the frequency of leisure activities are focussed on the same residential area attributes.

The individual correlation coefficients are difficult to interpret. There are few consistent patterns of association. The importance assigned to social residential area attributes is not associated significantly with the frequency of participation in social activities. Nor are the correlations between participation in recreational activities and attribute importance immediately obvious.

The exceptions include the positive associations between the proportion of time spent outside the home and the importance of upkeep. In other studies, concerns about the appearance and upkeep of residential areas have been related to positive evaluations of gardening and maintenance work (Lansing and Hendricks, 1967; Michelson, 1977). The negative association between the importance of this attribute and the proportion of time spent inside the home confirms this relationship. Women who spend more time in the yard of their house attach more importance to the upkeep of residential areas.

The positive association between the frequency of shopping trips and the importance assigned to access to shops and to the mixture of commercial and residential land uses in an area seems equally straightforward. These two residential area attributes assume more importance for women who shop frequently.

The difficulties of interpreting the individual correlation coefficients reflects the complexity of residential area evaluation.

Consider the positive correlation between the frequency of visit to parks and the importance of lot size and of the distance between buildings. If visits to parks are a surrogate measure of participation in outdoor activities, this relationship is interpretable. Otherwise, the link between visits to parks and these two attributes are not immediately obvious. A more comprehensive and detailed description of leisure activities is needed to determine how individual residential area attributes are believed to support participation in individual leisure activities.

6.2.2 The Location of Leisure Activities

The second part of Hypothesis 6, concerning the relationship between residential area aspirations and the extent of local participation in leisure activities is tested in a similar fashion. The extent of local participation in all the leisure activities is associated with the importance of 15 residential area attributes (Table 6.8). Of the 53 correlation coefficients, 36 are significant ($p \leq .05$). Seventeen describe weaker ($p \leq .10$) associations between the importance of residential area attributes and the locale of leisure activities. The levels of association remain low, ranging from .11 to -.39. The location of leisure activities is only one determinant of residential area aspirations. These results support the second part of Hypothesis 6. Approximately 21 percent of the possible coefficients are significant ($p \leq .10$). The location of leisure activities is related to the importance of residential area attributes.

The results (Table 6.8) indicate that the family life cycle effects residential area aspirations through changes in the location of

TABLE 6.8

CORRELATIONS BETWEEN LOCATION OF LEISURE ACTIVITIES AND ATTRIBUTE IMPORTANCE

Leisure Activity	Quiet	Greenery	Friendly	Housing type	Well kept	Open space	Lot size	People like us	Status	Building distance	Safety	Land use	Privacy	Access to shops	Access to parks	Access to schools
Shopping	-.02	.06	.19*	-.05	.00	-.13**	-.05	.09	.05	-.11**	.05	-.02	-.04	.03	-.06	-.02
Participate sports	.19	.06	.13	-.05	.17	-.10	-.09	-.05	.34*	.05	.11	-.10	.00	-.03	-.03	-.25*
Public entertainment	-.07	-.02	.06	-.19*	-.03	-.07	-.09	.01	-.04	.09	-.10	-.04	.12	.27*	.11	-.09
Club participation	-.04	-.03	.02	.01	-.04	-.19*	-.14	-.06	.01	.04	-.01	.09	-.04	.10	.11	.00
Cultural activities	-.14**	.16**	.21*	-.08	.11	.01	.07	.05	-.08	.08	.03	-.04	.01	-.04	-.05	-.11
Churchgoing	.02	.00	.05	-.04	.00	-.12	-.21*	-.01	.14	-.08	.08	-.20*	-.13	.09	.05	.13
Visit parks	-.02	-.03	.17*	.00	.22*	-.24*	-.17**	.16*	-.10	-.07	.07	.14**	.01	.06	-.12	-.16**
Go to restaurants	-.14**	-.13**	.15*	-.12**	.05	-.18*	-.10	.17*	.08	-.02	-.07	-.01	.03	.17*	.08	-.08
Extension classes	-.05	.09	.15	.39*	-.11**	-.03	.21*	.19	-.05	.12	.14	.07	.07	-.16	-.38*	-.37*
Drives and walks	-.19*	.04	-.06	-.09	-.06	-.08	.08	.02	.17*	.04	.06	.08	.01	.07	-.01	-.04
Children's activities	-.26*	.11	.20	.10	.01	-.17	.03	.18	-.01	.09	-.18	.20	.06	.14	.05	-.16
Greet people	-.08	.13**	.10	-.06	-.08	-.12**	-.01	-.03	.09	-.06	.07	-.09	.15*	-.01	.05	-.02
Visit people	-.10	-.09	.01	.05	-.20*	-.10	.10	.13	-.15	.04	-.06	-.14	.27*	.09	-.14	.02
Be entertained	-.03	.01	.16*	-.14*	-.13**	-.11	-.20*	.00	-.06	.07	.01	-.05	.05	.21*	.09	-.03
Phone	-.03	.11	.20*	-.14*	-.12**	-.08	-.14*	.07	.10	-.04	-.02	-.07	.13**	.10	.02	-.01
Help people	.05	.09	.04	-.25*	-.15*	-.03	-.06	-.10	-.04	.03	.02	-.06	.06	.17*	.09	-.01

* significant, $p \leq .05$, 2 tailed, Kendall correlation coefficient, N varies.
** significant, $p \leq .10$, 2 tailed, Kendall correlation coefficient, N varies.

leisure activities. Of the 53 significant ($p \leq .10$) correlations, 40 refer to leisure activities for which the location of participation is related to life cycle status. The mediating influence of the location of leisure activities is comprehensive. The importance of only one residential area attribute that is related to life cycle status, namely distance between buildings, is not included in the 40 significant ($p \leq .10$) correlations.

Apart from their contribution to life cycle effects on attribute importance, life cycle effects on leisure activities have a significant mediating influence on other residential area aspirations. Of the 40 associations, 21 refer to residential area attributes that are not related to life cycle status. These associations are focussed on 4 residential area attributes. Three of these attributes; greenery, housing type, and open space, refer to the physical and built features of an area. The importance of a friendly area is also related significantly to the location of 5 leisure activities for which life cycle effects were observed (Section 6.1.2).

The location of leisure activities has a weaker independent influence on residential area aspirations. Only 25 percent of the significant associations refer to leisure activities that are not related to life cycle status. This independent influence is divided almost equally between the importance of residential area attributes that are related to life cycle status and residential area attributes on which life cycle status has no significant effects. These results show that the location of leisure activities influences a greater range of residential area aspirations than life cycle status alone.

Two different effects of the location of leisure activities are apparent in these results. Eight residential area attributes[1] which describe the physical and built features of residential areas assume more importance as leisure activities are localized. Of the 31 significant associations between the importance of these attributes and the location ratings of leisure activities, 27 are negative. The observed direction of this relationship is expected. Conditions in the residential area assume more importance as both social and recreational activities are localized.

The importance of social attributes[2] of residential areas is positively associated with the location of leisure activities. Less importance is assigned to 4 social characteristics as leisure activities are concentrated in the residential area. The observed direction of this relationship is puzzling. It was expected that social attributes assume more importance as activities are concentrated in the residential area.

Although this result cannot be explained from the present data, a possible explanation can be developed from recent findings concerning residential area satisfaction. Satisfaction with a residential area attribute implies that residential area aspirations have been attained (Wolpert, 1965). However, it is not clear how satisfaction subsequently,

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1 These attributes are noisy/quiet, apartments/single family houses, well kept/unkempt, much/little open space, large lots/small lots, access to parks and schools, and buildings far apart/close together.

2 These attributes are friendly/unfriendly, people like us/people different from us, low status/high status and public/private.

affects the assignment of attribute importance (Michelson, 1977, 33). There is inconclusive evidence that unsatisfactory attributes are assigned more importance (Sanoff and Sawhney, 1972; Flaschbart and Peterson, 1973), which implies that the importance of satisfactory attributes remains the same or declines.

The women in this sample are extremely contented with conditions in their present residential areas (Table 6.9). They are slightly more satisfied with the social characteristics of these areas than with the physical and built features. It may be that local participation in leisure activities occurs only after social characteristics are considered satisfactory. Consequently, the importance of social attributes may decline as leisure activities are localized since these residential area aspirations have been attained.

The empirical findings support the hypothesis that both the frequency and location of participation in leisure activities are related to the importance of residential area attributes. The location of leisure activities has more systematic and marked effects on attribute importance. There is a larger number of significant correlations between the location ratings of leisure activities and the importance of attributes. These results agree with the findings from the earlier analysis of life cycle effects on leisure activities. Life cycle status was found to have more effects on the location of leisure activities.

Moreover, these results indicate that the family life cycle affects aspirations through changes in both the location and frequency of participation in leisure activities. This relationship is observed for social and recreational leisure pastimes. This mediating role is

TABLE 6.9

MEDIAN RATINGS* OF RESIDENTIAL AREA SATISFACTION

Attribute	Total Sample n = 103	Life Cycle Stage			
		1 n = 22	2 n = 25	3 n = 27	4 n = 29
Quiet	2.1	1.8	2.3	2.0	2.1
Greenery	2.1	2.0	2.3	2.1	2.1
Friendly	2.0	1.9	2.1	2.0	1.9
Housing type	2.2	1.8	2.8	2.5	2.2
Well kept	2.1	2.0	2.1	1.9	2.1
Open space	2.3	2.0	3.3	2.3	2.3
Lot size	2.2	2.1	2.8	2.1	2.2
People like us	2.1	2.2	2.2	2.0	2.0
Status	2.1	2.2	2.2	2.0	2.0
Building distance	2.5	2.5	2.5	2.4	2.6
Safety	2.1	1.9	2.3	2.2	2.1
Land use	2.0	1.8	2.0	2.2	1.9
Privacy	2.1	1.8	2.3	2.0	2.1
Access to shops	1.9	1.9	2.0	1.9	2.0
Access to parks	2.4	2.5	2.4	2.4	2.3
Access to schools	2.1	3.2	1.9	2.0	2.0
Overall satisfaction	2.0	1.8	2.3	1.8	1.9

* 1 indicates very satisfied, 7 indicates very dissatisfied.

most marked for the location of leisure activities.[3]

To an extent, leisure activities have an independent influence on residential area aspirations. This independent role is most apparent for the frequency of participation in leisure activities. Nevertheless, this independent influence is weaker than the mediating influence of either the location or frequency of activities. Leisure activities influence residential area aspirations most strongly as intervening variables which transmit life cycle effects on residential area aspirations.

These results have demonstrated that changes in leisure activities through the life cycle only partially account for life cycle effects on residential area aspirations. Residential history is a second mediating effect that needs to be examined. This analysis is undertaken in the next section where life cycle effects on residential history are discussed first.

6.3 Life Cycle Status and Residential History

The analysis of the role of residential history in life cycle effects on residential area aspirations is undertaken in two parts. The effects of life cycle status on residential history are analysed first. Then the relationship between residential history and the assignment of attribute importance is examined.

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[3] Although the location of leisure activities is related to the availability of facilities, there are no significant differences in availability among life cycle stages (see Appendix E). Consequently, the hypothesis that the family life cycle influences aspirations through changes in the location of leisure activities is accepted.

Life cycle effects on residential history are examined by tests of Hypothesis 5.

Hypothesis 5: Length of residence at the present address and residency in different dwelling types are related to life cycle status.

Residency in different dwelling types is described by six variables; length of residence in four dwelling types, the number of residential moves undertaken since establishing an independent residence, and the number of different types of dwelling in which a woman has lived. Life cycle effects on each variable are discussed, in turn, beginning with length of residence at the present address.

6.3.1 Length of Residence

Length of residence at the present address is expected to increase at each stage in the life cycle. The median length of residence at the present address increases from 31 months in the first life cycle stage to 168 months in the fourth stage (Table 6.10). Moreover, this increase in length of residence is related significantly ($p \leq .001$) to life cycle status (Table 6.11). On the basis of these results, the first part of Hypothesis 5 is accepted. As expected, length of residence at the present address increases significantly ($p \leq .05$) through the life cycle.

The largest increase in length of residence occurs between the second and third life cycle stages (Table 6.12). There are no significant differences in length of residence between either the first and second life cycle stages or the third and fourth life cycle stages. These results which emphasize the residential mobility of women in the early stages of the life cycle accord with previous evidence that age and the

TABLE 6.10

MEDIAN VALUES FOR RESIDENTIAL HISTORY

Variable	Total Sample N = 103	Life Cycle Stage			
		1 N = 22	2 N = 25	3 N = 27	4 N = 29
Residence at present address (months)	78.0	31.0	49.2	120.3	168.0
Number of moves	3.8	3.2	4.3	3.7	4.1
Residence in owned housing (months)	167.7	30.5	52.8	215.0	278.0
Residence in rented housing (months)	48.0	37.5	48.0	49.5	60.5
Residence in single family houses (months)	180.25	24.5	60.0	218.0	282.0
Residence in multiple family dwelling (months)	41.63	37.5	41.3	47.3	36.0
Number of dwelling types experienced	2.31	2.3	2.3	2.3	2.4

TABLE 6.11

ONEWAY ANALYSIS OF VARIANCE OF RESIDENTIAL HISTORY

Variable	χ^2	Significance
Residence at present address (months)	46.3	*
Number of moves	2.3	N.S.
Residence in owned housing (months)	64.9	*
Residence in rented housing (months)	0.2	N.S.
Residence in single family houses (months)	62.3	*
Residence in multiple family dwellings (months)	0.3	N.S.
Number of different dwelling types experienced	0.4	N.S.

* significant, $p \leq .001$, degrees of freedom = 3.
N.S. not significant.

TABLE 6.12

PAIRWISE DIFFERENCES IN RESIDENTIAL HISTORY
MANN-WHITNEY U STATISTICS

Variable	Pairs of Life Cycle Stages					
	1&2	1&3	1&4	2&3	2&4	3&4
	n_1 n_2 22 25	n_1 n_3 22 27	n_1 n_4 22 29	n_2 n_3 25 27	n_2 n_4 25 29	n_3 n_4 27 29
Residence at present address (mths)	204.5	85.0*	58.0*	103.0*	67.0*	288.0
Number of moves	217.0	248.0	256.0	369.0	373.0	356.0
Residence in owned housing (mths)	228.0	83.5*	39.5*	32.0*	8.0*	144.5*
Residence in rented housing (mths)	261.0	263.5	309.0	338.0	346.0	382.0
Residence in single family housing (mths)	222.5	99.0*	36.5*	58.5*	10.0*	134.0*
Residence in multiple family dwellings (mths)	272.0	293.0	347.5	321.0	387.5	414.5
Number of different dwelling types experienced	268.0	279.0	290.0	326.0	338.0	378.5

* significant, $p \leq .05$, 2 tailed.

presence of school age children in the household inhibit residential moves (Quigley and Weinberg, 1977).

6.3.2 Residency in Different Dwelling Types

The median length of residence in four dwelling types is listed for each life cycle stage in Table 6.10. The median number of moves completed at each stage are also included with the median number of different dwelling types experienced at each life cycle stage. Residence in both owned and single family houses increases at each stage in the life cycle. Residence in rented and multiple family dwellings is shorter in every stage of the life cycle except the first. For example, in the last life cycle stage, the median length of residence in owned accommodation is 278 months compared with 36 months in multiple family dwellings.

The results of the analysis of variance (Table 6.11) show that life cycle status has limited effects on residency in different dwelling types. Life cycle status is related significantly ($p \leq .05$) to only two of the variables describing residency in different dwelling types; length of residence in owned and single family houses. Regardless of their positions in the family life cycle, all the women in this sample have lived in other dwelling types for approximately the same number of months. Moreover, the number of moves completed prior to residence in owned accommodation is not related to life cycle status. These results provide only partial support for the second part of Hypothesis 5. Life cycle status has significant ($p \leq .05$) effects only on the length of residence in both owned and single family houses.

In part, these results reflect the sample design. Women living in rented accommodation were excluded from the sample. Consequently, the variation in length of residence in each housing type is reduced. Nevertheless, these results show that women from all stages of the life cycle move to owned accommodation with a similar experience of other housing types.

The analysis of pairwise differences (Table 6.12) underlines the limited effects of life cycle status on residency in different dwelling types. There are significant pairwise differences for length of residence in only two dwelling types; owned and single family accommodation (Table 6.12). As expected, length of residence in both dwelling types increases from the second life cycle stage. Women in the fourth life cycle stage are distinguished by longer residence in both owned and single family houses. There are no significant differences in length of residence in these dwelling types between the first and second stages of the life cycle. Since the sample is restricted to women living in owned accommodation, the relationship between moves to suburban, single family houses and the birth of children which was reported by Michelson (1977, 140) is not evident in these results.

It appears that life cycle effects on residential history are reduced when variations in present dwelling type are controlled. Regardless of life cycle status, selected aspects of residential history are shared by all women living in owned accommodation. These results suggest strongly that previous evidence of more comprehensive life cycle effects on residential history is due to variations in present dwelling type.

The hypothesis that changes in residential history occur between the early stages of the life cycle and the longer period of child-rearing and child-launching is supported by these findings. Women in the third and fourth stages of the life cycle are distinguished from those in earlier life cycle stages by the results of this analysis. There is no evidence that reduced household size causes increased residential mobility in the fourth life cycle stage. However, this trend may not be observed because of the focus on women living in owned accommodation. On the basis of these results, Hypothesis 5 is accepted. Life cycle status has significant effects on residential history.

The pattern of life cycle effects on residential history differs from the relationships between life cycle status and leisure activities. Changes in child-rearing responsibility and associated variations in work status accounted for life cycle effects on the location and frequency of leisure activities. Age appears to be a more important influence on residential history. Significant differences in residential experience occur between younger women in the first two stages of the life cycle and older women in later life cycle stages. Residential history describes a second aspect of life cycle status distinct from propensities to engage in leisure activities.

6.4 Residential History and Residential Area Aspirations

The extent that these changes in residential history through the life cycle contribute to life cycle effects on residential area aspirations is now examined. Each of the variables describing residential history is

considered in Hypothesis 7.

Hypothesis 7: The importance assigned to residential area attributes is related to length of residence at the present address and residency in different dwelling types.

The influence of length of residence at the present address is considered first.

6.4.1 Length of Residence

The importance of only one residential area attribute, much greenery/little greenery, is related significantly ($p \leq .05$) to length of residence at the present address (Table 6.13). The importance of friendliness is associated more weakly ($p \leq .10$) with length of residence at the present address. On the basis of these results, the first part of Hypothesis 7 cannot be accepted. Length of residence at the present address has very weak effects on residential area aspirations.

Furthermore, length of residence at the present address has a minor mediating influence on residential area aspirations. Life cycle status is not related to the importance of either of the residential area attributes with which length of residence is associated. The mediating influence of length of residence at the present address is small compared to the mediating influence of leisure activities.

6.4.2 Residency in Different Dwelling Types

Residency in different dwelling types has more associations with residential area aspirations (Table 6.13). There are 3 significant ($p \leq .05$) correlations between the importance of residential area attri-

TABLE 6.13

CORRELATIONS BETWEEN RESIDENTIAL HISTORY AND ATTRIBUTE IMPORTANCE

Attribute	Residence at present address (months)	Number of moves (months)	Residence in owned housing (months)	Residence in rented housing (months)	Residence in single family houses (months)	Residence in multiple family dwellings (months)	Number of dwelling types experienced (months)
Quiet	-.04	.03	.02	.01	.04	-.05	-.07
Greenery	-.23*	-.02	-.14	-.01	-.10	-.02	-.03
Friendly	-.17**	.02	.03	.00	.10	-.12	-.07
Housing type	.12	-.16**	.06	-.05	.01	.08	.06
Well kept	.11	-.13	.28*	-.06	.25*	-.11	-.11
Open space	-.15	.13	-.16**	.13	-.17**	.19**	.01
Lot size	.01	.02	-.06	-.10	-.09	.04	.01
People like us	.14	.00	.18**	-.03	.19**	-.11	-.05
Status	.10	-.03	-.01	-.07	.02	-.23*	.09
Building distance	-.15	.05	-.18**	-.09	-.17**	-.03	.11
Safety	-.13	.04	-.03	.13	.00	.04	.04
Land use	.15	-.05	.08	-.08	.08	-.07	.08
Privacy	-.07	.00	-.17**	.06	-.12	-.06	.15
Access to shops	.13	.10	.14	.00	.09	.11	.05
Access to parks	.10	.06	.05	-.08	.00	.00	-.03
Access to schools	-.04	-.06	-.12	.08	-.14	.16**	-.04

* significant, $p \leq .05$, 2 tailed Spearman rank correlation, N = 103.
** significant, $p \leq .10$, 2 tailed Spearman rank correlation, N = 103.

butes and length of residence in three dwelling types. Weaker ($p \leq .10$) associations between attribute importance and residence in different dwelling types are described by 10 correlation coefficients. The levels of association remain low, ranging from .16 to .28. Residence in different dwelling types, like leisure activities, is only one influence on residential area aspirations. However, there are more significant ($p \leq .10$) associations than the number expected by chance variation alone. Consequently, the second part of Hypothesis 7 is accepted. Residency in different dwelling types is related to residential area aspirations.

These results show that residency in different dwelling types contributes to life cycle effects on residential area aspirations. Of the 13 significant ($p \leq .10$) associations, 9 refer to residence in owned and in single family houses which are related to life cycle status. This mediating influence is focussed on residential area attributes that are related to life cycle status. Only one attribute for which no life cycle effects were found in the analysis of variance (Chapter 5, Section 5.3) is associated significantly ($p \leq .10$) with length of residence in owned and single family houses.

In addition, residency in different dwelling types has a minor independent influence on residential area aspirations. Length of residence in multiple family dwellings is associated with the importance of 3 attributes, and number of moves is correlated with 1 attribute. However, this independent influence is small compared to the independent influence of leisure activities.

The direction of the effects of residency in different dwelling types varies. Half the correlation coefficients are negative indicating

that the importance of residential area attributes declines with longer residence in 3 dwelling types. These correlation coefficients refer to all types of residential area attributes. The positive correlations also refer to both social characteristics and physical and built features of residential areas.

Nevertheless, individual correlation coefficients are interpretable. The importance of upkeep increases with longer residence in both owned and single family houses. This relationship has been reported previously (Butler *et al.*, 1969; Troy, 1973). It has been suggested that owners are more concerned with the maintenance of the residential area because it affects the value of their properties (Lansing and Hendricks, 1967). These results show that maintenance assumes more importance as length of residence in owned and single family housing increases.

The positive relationship between length of residence in multiple family dwellings and the importance of open space is also expected. Desire for more open space has been cited as one of the major reasons for moves from multiple family dwellings to single family houses (Michelson, 1977). This positive relationship contrasts with the negative associations between the importance of both open space and distance between buildings and length of residence in owned and single family houses. The decreased importance of these attributes seems to reflect the availability of open space and the separation between buildings characteristic of owned single family houses. Having attained these residential area aspirations, women assign these attributes less importance. The pattern of these 3 correlation coeff[illegible] that [illegible] area [illegible]

confirms the hypothesis proposed by Michelson (1977) that residential area aspirations are adjusted by a deficit compensating process.

This analysis has demonstrated that length of residence in owned and single family houses is the most significant aspect of residential history. The majority of women in this sample presently live in this type of housing. Thus, these findings confirm previous evidence (Hinshaw and Allot, 1972; Michelson, 1973) that the nature of present residential experience influences residential area aspirations.

Nevertheless, the role of residential history is small in comparison to the effects of leisure activities on residential area aspirations. Length of residence in only two dwelling types has a mediating influence on residential area aspirations. Moreover, the independent influence of residential history is almost nonexistent. These results contradict previous findings (Troy, 1973; Hourihan, 1975; Michelson, 1977) that residential history is a major influence on residential area evaluation. It appears that inadequate controls for variation in present housing type have exaggerated the influence of residential history in previous studies.

6.5 Conclusions

The effects of changing family participation on residential area evaluation are clear from this analysis. Major changes in leisure activities and minor variations in residential history through the life cycle influence residential area aspirations. The results of the analysis largely support the conceptual framework postulated in Chapter 2. Although both residential history and leisure activities have a significant influence on aspirations, the role of leisure activities is more important.

Compared to residential history, the location and frequency of participation in leisure activities are related more significantly to life cycle status. Moreover, life cycle effects on leisure activities, particularly on the locations of these activities, have the greatest influence on residential area aspirations.

Leisure activities and residential history influence residential area aspirations in two ways. The direct effects of life cycle status are mediated by changes in leisure activities and differences in residential history through the life cycle. In addition, leisure activities have an important independent influence on residential area aspiration. In comparison, residential history has an almost nonexistent independent influence. The mediating roles of both the location and frequency of participation in leisure activities are larger than their respective independent roles. In the case of the frequency of leisure activities, the two roles are approximately equal. The mediating role of the location of leisure activities is substantially larger than its independent influence on residential area aspirations.

The results of this analysis underline the significant effects of child care responsibilities and work status on residential area evaluation. Life cycle effects on leisure activities were found to be related directly to child care responsibilities and work status. Changes in leisure activities through the life cycle have the greatest impact on residential area aspirations. The effects of residential history, which is related more strongly to age, are minor in comparison. Thus, changing behavioural expectations related to child care roles have emerged as the basis of life cycle effects on residential area evaluation.

CHAPTER 7

CONCLUSIONS

This thesis has examined the nature and extent of life cycle effects on residential area evaluation. This has been accomplished by incorporating recent evidence from time budget studies in the existing conceptualization of residential area evaluation. The usefulness of this revised conceptual framework was examined empirically with data from a questionnaire survey of women in four stages of the family life cycle. The study was designed to specify the nature of life cycle effects on the evaluation process and the manner in which changing family participation through the life cycle affects residential area desires.

Residential area evaluation is based upon residential area aspirations. These aspirations are compared with subjective information about an area by means of an evaluation function. Changes in residential area aspirations through the life cycle were hypothesized to be the basis of the direct effects of life cycle status on residential area evaluation. It was hypothesized that the family life cycle affects residential area aspirations through changes in leisure activities and differences in residential history.

The analysis began by examining the direct effects of life cycle status on residential area preferences. The effects of life cycle status on each component of residential area evaluation were then examined. The

relationship between life cycle status and residential area aspirations was examined in detail. A briefer investigation of the effects of the family life cycle on the accuracy of one evaluation function followed. The remainder of the analysis elucidated the effects of family participation on residential area aspirations. The relationships between life cycle status and both leisure activities and residential history were examined. The associations between residential area aspirations and these two variables were investigated.

The empirical findings generally support the hypotheses albeit weakly, in some cases. With regard to the direct effects of life cycle status on residential area evaluation, significant relationships were found between stage in the life cycle and both residential area aspirations and the accuracy of the evaluation function. However, there are no significant variations in residential area preferences through the life cycle. Although life cycle effects on preferences are in the expected direction, the direct effects of life cycle status on residential area preferences are not statistically significant.

Life cycle effects on residential area preferences have been masked in these results by using photographs to elicit preferences. Visual characteristics are emphasized in preference judgements based on photographs. The importance of these visual characteristics is not related to life cycle status. Consequently, statistically significant life cycle effects on residential area preferences were not observed despite significant relationships between life cycle status and each component of the evaluation process.

Life cycle status is related to the importance assigned to

eight residential area attributes. These attributes mainly describe the spaciousness of an area and access to local facilities within the area. There is agreement among the four life cycle stages on the most and least important residential area attributes.

Changes in child care responsibilities are associated with the direct effects of the family life cycle on residential area aspirations. Residential area aspirations are revised at the end of the parental career when the youngest child has finished high school. Spaciousness which is emphasized during the child-rearing periods of the life cycle is assigned less importance. Access to shopping and to people similar to oneself assumes more importance. Anticipation of child care responsibilities prior to the birth of children contributes to agreement on residential area aspirations between the early childless and child-rearing stages of the life cycle.

Life cycle status has equally significant effects on the evaluation function. The predictive accuracy of the linear compensatory evaluation function declines through the life cycle. This decline in predictive accuracy is not related to the number of salient attributes considered in the evaluation, contrary to the initial hypothesis.

The remaining findings elucidate the origins of life cycle effects on residential area aspirations. Life cycle status had equally significant effects on both the frequency and location of leisure activities. Child care responsibilities influence both the location and frequency of leisure activities. During the child-raising stages of the life cycle, desires for local participation in all leisure activities increase. The localization of leisure activities is associated with increased participation in family-

oriented leisure pastimes. The frequency of participation in individual recreation declines most significantly during the second life cycle stage when children are continually present in the home. Work status had a significant influence on the frequency of social activities. Working women participate more frequently than non-working women in 5 of the 6 social activities.

Changes in the frequency and location of leisure activities contribute significantly to life cycle effects on residential area aspirations. Desires for local participation in leisure activities emerged as the most important mediating influence on aspirations. The importance of physical and built features of the residential area increases as leisure activities are localized through the life cycle. In contrast, the importance of social conditions declines as leisure activities are concentrated within the residential area.

The frequency of participation in leisure activities has a stronger independent influence on residential area aspirations. This independent role reflects the work status of women during the first stage in the life cycle. Changes in the frequency of child-oriented and family activities with stage in the life cycle contribute to the mediating influence of the frequency of leisure activities.

Life cycle status has weaker effects on residential history. Length of residence at the present address and length of residence in two dwelling types: owned and single family houses increases at each stage of the life cycle. However, these differences in residential history

residential area aspirations. Nevertheless, the associations between residential history and the assignment of attribute importance are interpretable. They indicate that the importance of a residential area attribute depends upon its presence in the present area. Once residential area aspirations are achieved, they are assigned less importance.

This thesis has demonstrated that the family life cycle has significant effects on residential evaluation beyond changing desires for dwelling space. Stage in the family life cycle influences both residential area aspirations and the evaluation function by which preferences are formed. Furthermore, life cycle status continues to affect residential area evaluation after the transition from the childless to the child-rearing stages of the life cycle. The results of this study demonstrate that the return to a childless household has a significant influence on residential area evaluation.

Moreover, these findings show that household size is not the sole or even the most important aspect of life cycle status. The behavioural expectations associated with family roles appear to have a wider and more pervasive influence on residential area evaluation. Child care responsibilities are particularly significant in this regard. Changes in child-care responsibilities through the life cycle were found to influence propensities to engage in leisure activities which in turn influence residential area aspirations. In particular, the family life cycle affects residential area aspirations through desires for local participation in leisure activities during the early child-rearing period of the life cycle.

This study confirms recent assertions (Michelson, 1977) that the

residential area is evaluated in terms of the opportunities it provides for participation in leisure activities. Propensities to engage in leisure activities were found to have a wider influence on residential area aspirations than life cycle status alone. However, these links between leisure activities and residential area aspirations are not intuitively obvious. Desires for local participation in social activities are associated with the importance assigned to physical and built features of the area as well as the importance of social characteristics.

The role of residential history in residential area evaluation is clarified by the findings of this study. Residential history is related to life cycle status as Pickvance (1973) has suggested; however, its effects on residential area aspirations are minor in comparison to the effects of leisure activities. The results suggest strongly that the duration of present residential experience in owned and single family houses has a greater effect on aspirations than prior experiences of other dwelling types. The women interviewed had moved to single family and owned accommodation with a similar residential history regardless of their stages in the life cycle. For this reason, residential experiences prior to the move to owned and single family housing do not mediate life cycle effects on residential area aspirations.

These results suggest further than Michelson's (1977) conceptualization of the family mobility cycle is incomplete. Although the majority of women in this survey have achieved the culturally defined ideal of a single family owned house, differences in residential area aspirations related to life cycle status persist. Attainment of the ideal does not necessarily imply that residential area aspirations do not change. The

family life cycle continues to influence aspirations.

Moreover, the process of residential area evaluation is elucidated by this study. The linear compensatory evaluation function was found to be a reasonably accurate model of the formation of residential area preferences. Although this evaluation function does not accurately predict the most preferred alternative, this evaluation function represents the overall trend in the preference ranking.

Equally important, life cycle status has been shown to affect the predictive accuracy of this evaluation function. This suggests that social characteristics may have a greater influence on the evaluation process than generally considered in the analysis of residential area preferences. Apart from their effects on the attributes salient in residential area evaluation, social characteristics appear to influence the manner in which preferences are formed.

The methodology of this study represents a significant improvement on the research design applied in previous empirical investigations of residential area evaluation. Social characteristics other than life cycle status were controlled successfully in the sample design. Consequently, it was possible to clarify the effects of life cycle status on residential area evaluation. The resistance-to-change grid proved a valid method for eliciting information about the importance of residential area attributes. The small number of intransitivities in these data indicate that women were able to accurately express their judgements of attribute importance. Since the resistance-to-change grid satisfies the major assumptions about the relative nature of attribute importance, its continued application to studies of residential area evaluation is

clearly warranted.

The findings of this study point to several areas where further research would profitably increase our understanding of the effects of the family life cycle on residential area evaluation. It appears that the family life cycle affects residential area aspirations primarily through changes in leisure activities. A comprehensive description of leisure activities specifying the frequency and location of joint family participation in activities is needed to detail the links between specific activities and residential area aspirations.

Second, this study has considered only one, albeit major dimension of the family life cycle, the parental career of married women. Further examination of the impact of other family roles on residential area evaluation is needed. Investigation of a wider range of the life cycle is called for by the findings of this study. Recent studies (Golant, 1972; Lawton, 1970) of the effects of aging on urban spatial behaviour point in the right direction. A comparison of the effects of the family life cycle on the evaluations of men and women would further enrich our understanding of the effects of life cycle status.

Thirdly, the significant effects of life cycle status on the linear compensatory evaluation function warrant further investigation. The data required to test noncompensatory evaluation functions precluded their inclusion in this study. However, a study devoted to this topic would have important implications for residential area evaluation, specifically, and the understanding of spatial preferences generally.

Finally, the role of subjective cognition has not been fully accounted for in this study. Although Harman (1975) found no evidence

that residential area cognition varied through the life cycle, her study covered a much narrower range of life cycle stages. The findings of this study suggest that attributes salient in later stages of the life cycle were not included in the analysis. A comprehensive examination of life-cycle effects on residential area cognition spanning the entire life cycle is needed.

These possible extensions aside, this thesis has met the major objective stated at the outset: to clarify the nature and extent of life cycle effects on residential area evaluation. Significant changes in residential area aspirations occur through the life cycle, and these changes can be linked to variations in leisure activities and residential history. These findings show that the effect of life cycle status on residential relocation extends beyond its well-documented influence on desires for dwelling space. This study has demonstrated that the family life cycle has an important effect on the evaluation of residential locations.

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APPENDIX A

THE FACTORIAL ECOLOGY OF HAMILTON

The sampling frame is derived from a factor analysis of the social characteristics of the population in the Hamilton Census Metropolitar Area. The analysis defines combinations of social characteristics describing the socioeconomic status and family status of enumeration areas in Hamilton. These factors are used to identify areas of predominantly middle class residents. The speed and efficiency of the sampling process is increased by randomly selecting households from these middle class areas.

Enumeration areas were chosen as the units of analysis because their small size reduces the variation in social characteristics within each area. There are fewer than 300 households in each enumeration area.

The factor analysis was performed on 26 variables, listed in Table A1, describing the income, occupation, education, age, family structure and ethnic background of the households in 857 enumeration areas.[1] Eleven variables which describe the occupations of area residents, their incomes and education are included to measure socioeconomic status[2] (Shevky and

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[1] The Hamilton Census Metropolitan Area is composed of 968 enumeration areas, but 111 rural areas were excluded.

[2] The fifteen occupational classes defined in the census are collapsed into three groups according to the typology developed by Greer-Wooten and Patel (1976). This classification excludes farming and primary processing occupations.

TABLE A1

FACTOR ANALYSIS VARIABLES

Acronym	Definition of Variable
MPROF	Percent of employed males in professional occupations
MWCOLL	Percent of employed males in white collar occupations
MBCOLL	Percent of employed males in blue collar occupations
FPROF	Percent of employed females in professional occupations
FWCOLL	Percent of employed females in white collar occupations
FBCOLL	Percent of employed females in blue collar occupations
PGR9	Percent of family heads who have completed grade 9 or less
PUNI	Percent of family heads who have completed university
FAVTOTI	Average total family income
MAVTOTI	Average total male income
MEDVAL	Median value of owner-occupied housing
RENT	Median rental payments per month
FERTILE	Number of families with children less than six years old as a proportion of women in the child-bearing years
PFSIN	Percent of females over 15 years who are single
PFWIDIV	Percent of females over 15 years who are widowed or divorced
PFMAR	Percent of females over 15 years of age who are married
FEXFT	Percent of females over 15 years of age who are employed full time
PFLAB	Percent of females over 15 years of age in the labour force
PCHILD	Percent of families with children
PNOCHIL	Percent of families without children
POWN	Percent of dwellings owner occupied
PRENT	Percent of dwellings rented
PRESCHOOL	Percent of families with children under six years of age
SCHOOL	Percent of families with children who are going to school
PERBI	Percent of population of British background
PERUK	Percent of population of Ukrainian background
PERITA	Percent of population of Italian background
YOUNG	Percent of females 25 to 44 years of age
MIDDLE	Percent of females 45 to 64 years of age
OLD	Percent of females 65 years of age and over

TABLE A2

THE LARGEST FACTOR LOADINGS OF EACH VARIABLE

Variable	1 Family Composition	2 Socioeconomic Status	3 Family Life Style	4 Female Employ-ment 1	5 Female Employ-ment 2
PERBI		.61			
PERITA		-.64			
YOUNG	.75				
MIDDLE			.43		
OLD	-.78				
PFSIN					-.69
PFMAR	.57				.68
PFWIDIV	-.68				
FEXFT				.63	
MPROF		.66			
MWCOLL		.30			
MBCOLL		-.77			
FPROF		.40			
FBCOLL		-.58			.28
FWCOLL					
PCHILD	.82				
PNOCHIL	-.76				
PGR9		-.80			
PUNI		.46			
POWN			.86		
PRENT			-.81		
MEDVAL			.65		
RENT				.33	
FAVTOTI				.58	
MAVTOTI		.56			
PFLAB				.74	
PRESCHOOL			-.42		
SCHOOL			.55		
FERTILE	.80				
PERUK		-.26			
Eigenvalue	6.77	5.15	3.10	1.87	1.25
Percent of Total Variance	21.8	16.6	10.0	7.5	5.6

Bell, 1955; Pineo and Goyder, 1973; Coburn and Edwards, 1976). Twelve variables refer to the family status of households in each area. The last three variables describe the ethnic composition of each area. Although ethnic background is not controlled explicitly in the sample design, Blishen (1970) and Porter (1957) reported that ethnic background is related strongly to a person's social status in Canadian society. Inclusion of these three variables insures a complete description of socioeconomic status.

Five significant factors which together account for 61.6 percent of the original variance emerged from the analysis. Each factor explains at least 5 percent of the total variance in the 26 variables.[3] Examination of the largest factor loading for each variable (Table A2) indicates that the family composition of households in each area is described by the first factor. High positive loadings for the fertility ratio, the percentage of families with children, and the percentage of young women in each area contrast with high negative loadings for the percentage of families without children, the percentage of females widowed and divorced, and the percentage of older women. Areas with high scores on this factor are characterized by young families rearing children.

The second factor is labelled socioeconomic status, for the majority of the occupation, income, and education variables are related significantly to this factor. As expected, the variables describing the ethnic composition of each area load strongly on this factor. High positive scores on this factor indicate an area of high social status.

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[3] A varimax rotation of the factor solution was performed to increase its interpretability. Each variable loads [illegible] one or, at

Factors 3, 4, and 5 describe additional aspects of the life cycle status of residents in each area. Factor 3 is labelled family life style. The variables describing dwelling type and dwelling value, with the percentage of families having school age children, load strongly on this factor. This factor distinguishes areas occupied by older families living in single family homes from areas where younger families in rented accommodation predominate. The last two factors refer to levels of female participation in the labour force.

There are strong parallels between the socioeconomic status factor revealed by this analyses and the dimensions of social status reported for Toronto by Greer-Wootten and Patel (1976). White-collar occupations are not related significantly to the socioeconomic status factor which contrasts blue-collar and professional occcupations. More surprising are the number of factors referring to family status.

Family status has been postulated as the second major dimension differentiating the residential structure of urban areas. However, several studies have reported two or more factors referring to this dimension of urban structure (Herbert and Johnston, 1976). This complexity reflects major changes in the "average" progression through the life cycle. Female participation in the labour force is no longer restricted to single women as factors 5 and 6 indicate. Moreover, people spend more time in the later stages of the life cycle when they have finished raising children. Consequently, two factors emerge, family composition which contrasts older childless families and young child-rearing families, and family life style which describes variations in the composition of families raising children. The emergence of these factors indicates that the

increased complexity of the family life cycle is reflected in the residential structure of Hamilton.

Enumeration areas were stratified according to their scores on the socioeconomic status factor. Initially, the distribution of factor scores was divided into three equal groups; however, the preponderance in Hamilton of highly paid blue-collar occupations rendered this classification inadequate. The mean percentage of men employed in blue-collar occupations was higher in the middle class areas ($\bar{X}$ = 51.99) than in the total population ($\bar{X}$ = 49.82). Since manual blue-collar occupations are not ascribed middle class social status (Coburn and Edwards, 1976, Vanneman, 1977), the middle class areas were redefined. All areas within one positive standard deviation of the mean score on the socioeconomic status factor were assigned to the middle class group of areas.. The mean percentage of blue collar workers in these areas was reduced to 43.7 percent. Thus, the areas considered middle class in this sample design are representative of the Canadian average, rather than Hamilton alone.[4]

The original intention was to stratify the middle class areas according to their scores on a family status factor, but the results of the analysis proved too complex. The factors describing family status did not accord with the four life cycle stages defined in Chapter 3.

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4 Coburn and Edwards (1976) reported a similar social structure in Victoria where the income of 64 percent of skilled blue-collar workers was higher than the income of 34 percent of white collar wor

APPENDIX B

RESPONSE RATES

The number of households considered at each stage of the sampling process is listed in Table B1. The sampling frame is composed of 1459 households living in owned accommodation. 73.12 percent of these households were selected at random creating a total sample of 1067 households. 51.7 percent of the households which were selected at random did not meet the criteria of the sample design. Households were ineligible on three grounds:

1. occupational status of the head of household was not in the middle stratum of the Blishen scale of occupational status (Blishen and McRoberts, 1976),
2. the household did not include any married women,
3. *Vernon's Hamilton City Directory, 1974* (1974) provided incomplete information concerning the address of the household, the occupation of the household head or the presence of married women in the household.

Of the remaining 515 households, 45 percent were never contacted despite repeated phone calls on three different days of the week at different times of the day. Wrong numbers account for 20.5 percent of these instances of nonresponse. Furthermore, the most intensive interviewing period was August which is traditionally a month of summer vacation when people are away. Of the 281 households which were contacted, 55 women were excluded from the [illegible]

TABLE B1

RESPONSE RATES

Response	Number
Total households owning house	1459
Number of households randomly selected	1067
Ineligible households*	552
Households never contacted **	234
Woman works full time or speaks no English	55
Refusals	141
Completed Interviews:	
Life cycle stage 1	5
Life cycle stage 2	25
Life Cycle stage 3	27
Life cycle stage 4	28
Total	85

* includes households removed because of incomplete information, wrong marital status (widow, widower, single) and the occupational status of household head.

** includes 48 wrong numbers and 186 households that were never contacted.

and 141 refused to participate in the survey. The response rate is 38 percent of all women who were contacted, but only 16.5 percent of all the households selected at random which also met the initial criteria of social and marital status.

Errors in the sampling frame have contributed to this low response rate. However, it is due primarily to the stringent sampling procedures. The majority of potential respondents were eliminated because they did not meet one or more of the sampling criteria.

APPENDIX C

THE SURVEY INSTRUMENT

The questionnaire is presented in this appendix. The rating scales are listed in Tables C1 and C2 after the questionnaire. Copies of photographs of the nine residential areas follow.

NEIGHBOURHOOD SURVEY

McMASTER UNIVERSITY

I am from the Geography Department at McMaster University. As indicated over the telephone, we are investigating women's preferences for residential areas - what they like and dislike about the areas around their homes, how much time they spend in these areas, and their activities in these areas. Your help in answering several questions is greatly appreciated.

Address: _____ Interview No.: _____

_____

_____

_____

L.C.Gp.: _____ No.: _____

Interview Appointment

1. Time: _____
2. Date: _____
3. Interviewer: _____

Outcome

1. Successful: _____
2. Refusal: _____
3. Call Back:
   Appt 1: Time: _____
   Appt 2: Time: _____

First, a few general questions.

Children *Yes* ___ *No* ___
(If *No*, go to question 3)

1. What are the ages of your children?

   1. ___ 2. ___ 3. ___ 4. ___ 5. ___ 6. ___

2. Do any of your children no longer live at home? (Circle those who don't live at home)

3. What is your occupation? _____
   (Probe for specific response)

4. Are you presently employed outside your home? *Yes* ___ *No* ___
   (If *No*, go to Question 10)

5. How many hours per week do you work outside your home? ____ *hrs/wk*

6. What hours during the day do you normally work? _____

   _____

7. Is your workplace located in your residential area? *Yes* ___ *No* ___

8. How long do you normally spend commuting to and from work? ___ *hrs*

9. What level of education have your completed?

   1. Never Attended ___
   2. Some Elementary ___
   3. Completed Elementary ___
   4. Some Secondary ___
   5. Completed Secondary ___
   6. Some Post-Secondary i.e., University, Community College ___
   7. Graduate or Professional i.e., Law School, Graduate School ___

10. What is your husband's occupation? _____

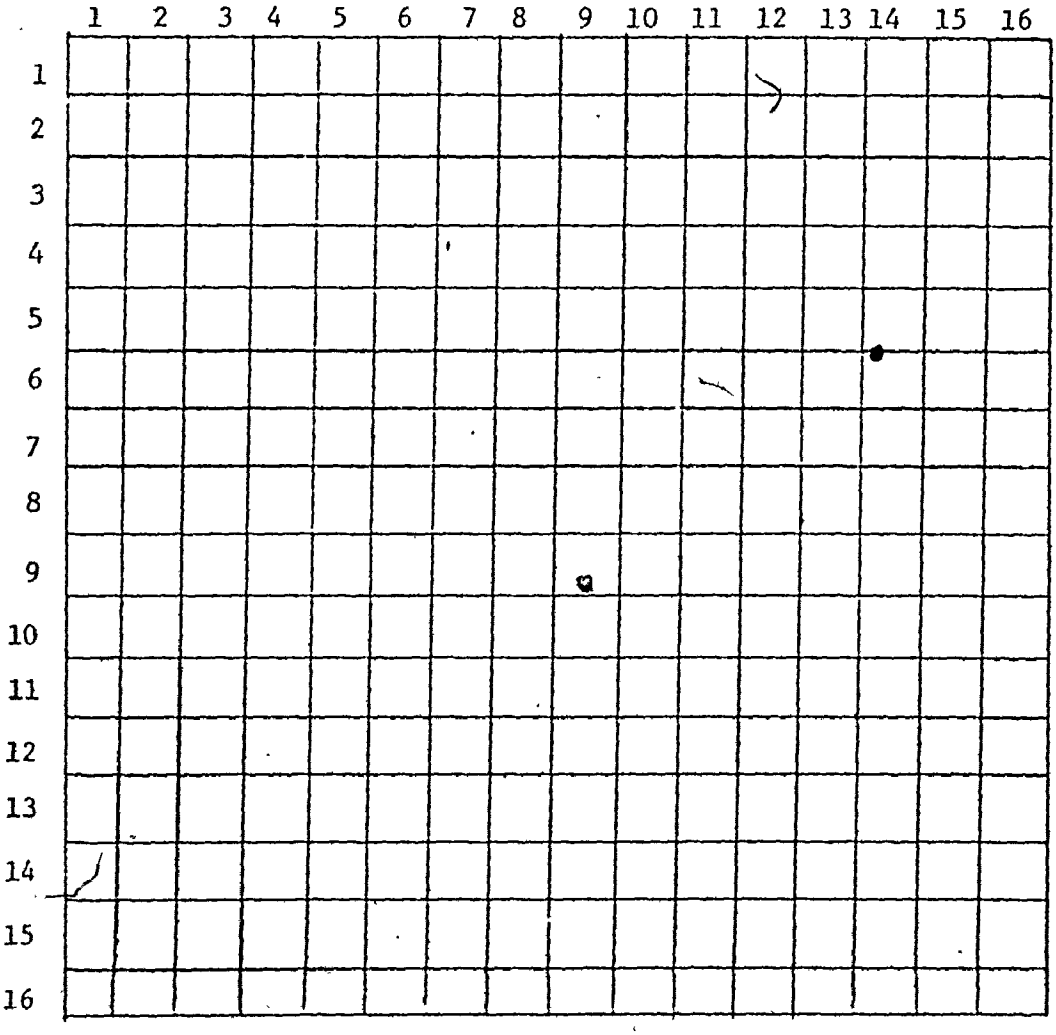
    _____

    (Probe for specific response)

11. If you had to move within the next year, what would you look for when choosing a new area to live? Some of the characteristics you might consider are listed on these cards. Each characteristic is expressed as a pair of opposites, for example, very quiet is contrasted with very noisy. On each card, please label the opposite you *prefer* 1, and the *nonpreferred* opposite 7.

    Now, taking the first characteristic, very quiet/very noisy, and little greenery/much greenery, you prefer _____ and _____. (Substitute poles labelled 1). If you were forced to give up one of these characteristics which are you most unwilling to change from the preferred to the nonpreferred opposite. If both changes appear equally undesirable please tell me. In most cases you will be able to make a choice.

    (Go through cards once, pairing card 1 with every other. Remove card 1 and repeat with card 2. Repeat until all cards have been compared)



12. Are there any other aspects of a residential area you would consider when choosing an area to live in? _____

_____

13. In the last week how many hours did you spend

a) working in your garden, yard, or on your balcony _____
b) working inside your house or your apartment _____
c) relaxing in your garden, yard, or on your balcony _____
d) relaxing inside your house or your apartment _____

14. Did your activities last week differ significantly from normal?
Yes ____ *No* ____

15. If *Yes*, why? _____

_____

16. Please tell me how frequently you engage in the following activities in a normal month or week, which ever is more appropriate. Then, using the categories on this card, tell me how frequently you conduct these activities in your residential area.

(Present card, mark appropriate number. If participation but never in residential area, ask, "Are these facilities available in your residential area"?)

Activity	Participation	Resid. Area	Availability
1. Make shopping trips; drugs, groceries			
2. Actively participate in sports			
3. Attend public entertainment as a spectator			
4. Participate in any social, recreational, or occupational groups or clubs			
5. Visit cultural facilities: libraries, museums			
6. Go to church, synagogue			
7. Visit parks, beaches, other natural areas			
8. Go to bars, nightclubs, restaurants			
9. Attend extension courses, recreational classes; pottery, adult education			
10. Take drives, walks or bicycle for pleasure			
(If No Children, skip to 12)			

No. 19 Cont'd...

Activity	Participation	Resid. Area	Availability
11. Take your children to extracurricular activities; music lessons, scouts			
(For remaining items DO NOT ask third question if no local participation)			
12. Greet people casually, say hello			
13. Chat with neighbours outside			
14. Visit people unexpectedly in their homes			
15. Be entertained in other peoples' homes			
16. Speak on telephone to friends			
17. Help people: lend household items, babysit			

17. Are there any other recreational or community activities in which you are involved? *Yes* ___ *No* ___

If *Yes*, how often? How often in your residential area? (Use card)
If no participation in residential area, is the facility available?

Activity	Participation	Resid. Area	Availability

PREFERRED POLE

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____

18. Do you drive? *Yes* ____ *No* ____
(If *No*, go to question 21)

19. How often is a car normally available for your use? _____

_____

20. How many hours per week do you drive, excluding the hours you spend driving to and from work? _____ *hrs/wk*

21. Here are photographs of *nine* residential areas, with some information about the proximity of schools, shopping and other facilities and a card labelled your own residential area. Consider how much you would *like to live* in each area. Arrange the cards in order from the area where you would most like to live to the area you like least.

____ ____ ____ ____ ____ ____ ____ ____ ____ ____

A B C D E F G H I J

(Mark number where 1 is most liked and 10 is least liked)
(Order cards alphabetically before asking question 21)

22. (Present photos and card labelled your own residential area. Present attribute cards one at a time)

Please rate these areas on each characteristic from 1 to 7, where 1 is the preferred opposite already marked on the card, and 7 is the nonpreferred opposite. 4 is midway between the opposites. If a characteristic does not seem applicable to an area, mark NA.

	1	2	3	4	5	6	7	8	9	10	11	12	13
A													
B													
C													
D													
E													
F													
G													
H													
I													
J													

23. Using the categories on this card, please rate these distances for each type of facility. Ten blocks is approximately 2/3 of a mile.

Distance	Schools	Shopping	Park
1. Within 5 blocks 2. 5 to 10 blocks 3. 11 blocks to 1 1/2 miles			

24. From your present residence how far is each of the following:

(Write distance)

Primary School _____
High School _____
Shopping Area _____
Park _____

25. How long have you lived in Hamilton or its adjacent suburbs; Ancaster, Stoney Creek, Burlington, Dundas? _____ *yrs*

26. How long have you lived at this address? _____

27. Before moving to this address, how long had you lived at your previous location? _____

28. Consider the photographs again. Tell me how similar the area where you lived before moving to this address is to each photograph, and your present location, using the categories on this card. The middle category, neutral, is equally similar as dissimilar.

____ ____ ____ ____ ____ ____ ____ ____ ____ ____

A B C D E F G H I J

(Mark number)

29. In the same way, tell me how similar each photograph is to the area where you spent most of your life before leaving your parents' home.

____ ____ ____ ____ ____ ____ ____ ____ ____ ____

A B C D E F G H I J

30. At what age did you move out of your parents' house? _____

31. Since then, how many times have you moved? _____

32. During this time, how many years have you lived in each of the housing types on this card?

1. _____	5. _____	9. _____
2. _____	6. _____	
3. _____	7. _____	
4. _____	8. _____	

33. At your present location, tell me how satisfied you are with each of the following characteristics, using the categories on this card. Indifferent is equally satisfied as dissatisfied. (Mark number)

1. Quietness	___	9. Friendliness	___
2. Greenery	___	10. Proximity of shopping	___
3. Proximity of schools	___	11. Prestige	___
4. Upkeep and visual appearance	___	12. Distance between buildings	___
5. Proximity of park	___	13. Safety	___
6. Mixture of multifamily dwellings and single family dwellings	___	14. Similarity of people	___
7. Open space	___	15. Mixture of residential and commercial land uses	___
8. Lot size	___	16. Privacy	___

34. How satisfied are you overall with this residential area? ____
How many of your closest friends live in this area?
All ____ *Some* ____ *or None* ____

35. Again, consider the photographs and your own area. Arrange the cards in order from the area to which you would be most likely to move, to the area into which you would be least likely to move.

____ ____ ____ ____ ____ ____ ____ ____ ____ ____

A B C D E F G H I J

(Include own area. Mark number where 1 is most likely and 10 is least likely)

36. How far does your residential area extend? Mark on this map the location of your house, and the area you feel comprises your residential area. You can decide the boundary by thinking of the street where you first feel at home when returning from other parts of the city.

37. What facilities are available in this area? (Prompt, for example, parks, library) _____

_____

38. What facilities would you like to have in this area, which are presently not available? _____

_____

39. Do you have any other complaints about this area? _____

_____

_____

_____

40. What year were you born? _____

41. Please indicate *your* income last year before taxes by circling the appropriate category on this card. _____
(Mark number)

42. Please indicate *your total family* income last year before taxes by marking an X beside the appropriate category. _____
(Mark number)

Thank you for your time and cooperation.

To be Completed by Interviewer

1. Total length of interview. _____

2. Was interview interrupted? *Yes* ___ *No* ___
   If *Yes*, describe in detail.

   _____

   _____

   _____

   _____

3. Was respondent 1. friendly and eager ___

   2. cooperative not eager ___

   3. indifferent and bored ___

   4. hostile ___

4. Dwelling type 1. Apartment ___

   2. Row housing/Town houses ___

   3. Duplex/Triplex ___

   4. Single Detached ___

TABLE C1

THE RATING SCALES

LOCATION RATING SCALE

1	2	3	4	5
Always	Very Frequently (2/3 or more of the time)	Frequently (1/3 to 2/3 of the time)	Occasionally (less than 1/3 of the time)	Never

SIMILARITIES SCALE

1	2	3	4	5	6	7
xtremely imilar	Quite Similar	Slightly Similar	Neutral	Slightly Different	Quite Different	Very Different

SATISFACTION SCALE

1	2	3	4	5	6	7
xtremely atisfied	Quite Satisfied	Slightly Satisfied	Indifferent	Slightly Dissatisfied	Quite Dissatisfied	Very Dissatisfied

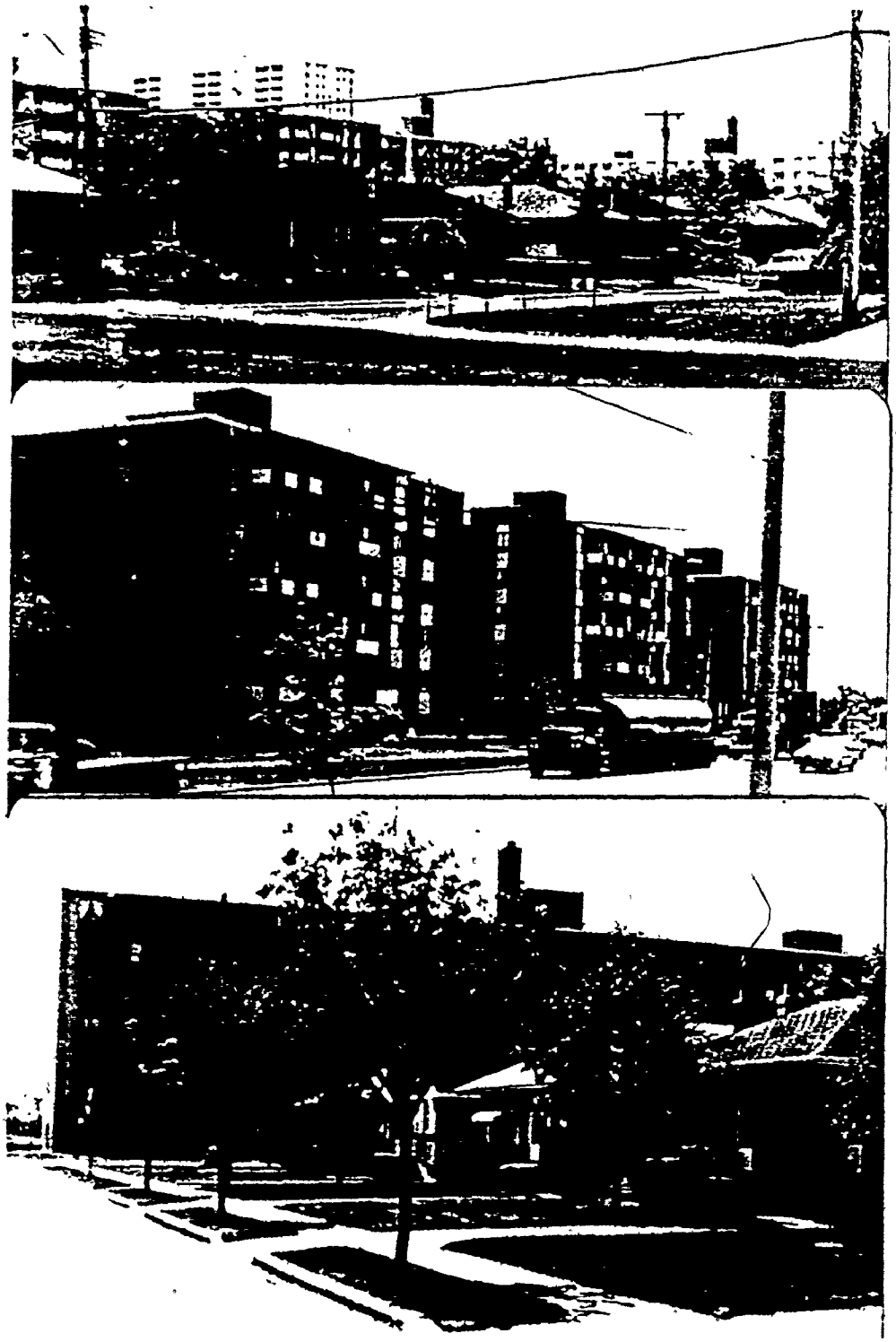
TABLE C2

INCOME CLASSES

1. Less than $2,000
2. $2,000 - $3,999
3. $4,000 - $5,999
4. $6,000 - $7,999
5. $8,000 - $9,999
6. $10,000 - $13,999
7. $14,000 - $17,999
8. $18,000 - $21,999
9. $22,000 - $25,999
10. $26,000 - $29,999
11. Greater than $30,000

TABLE C3

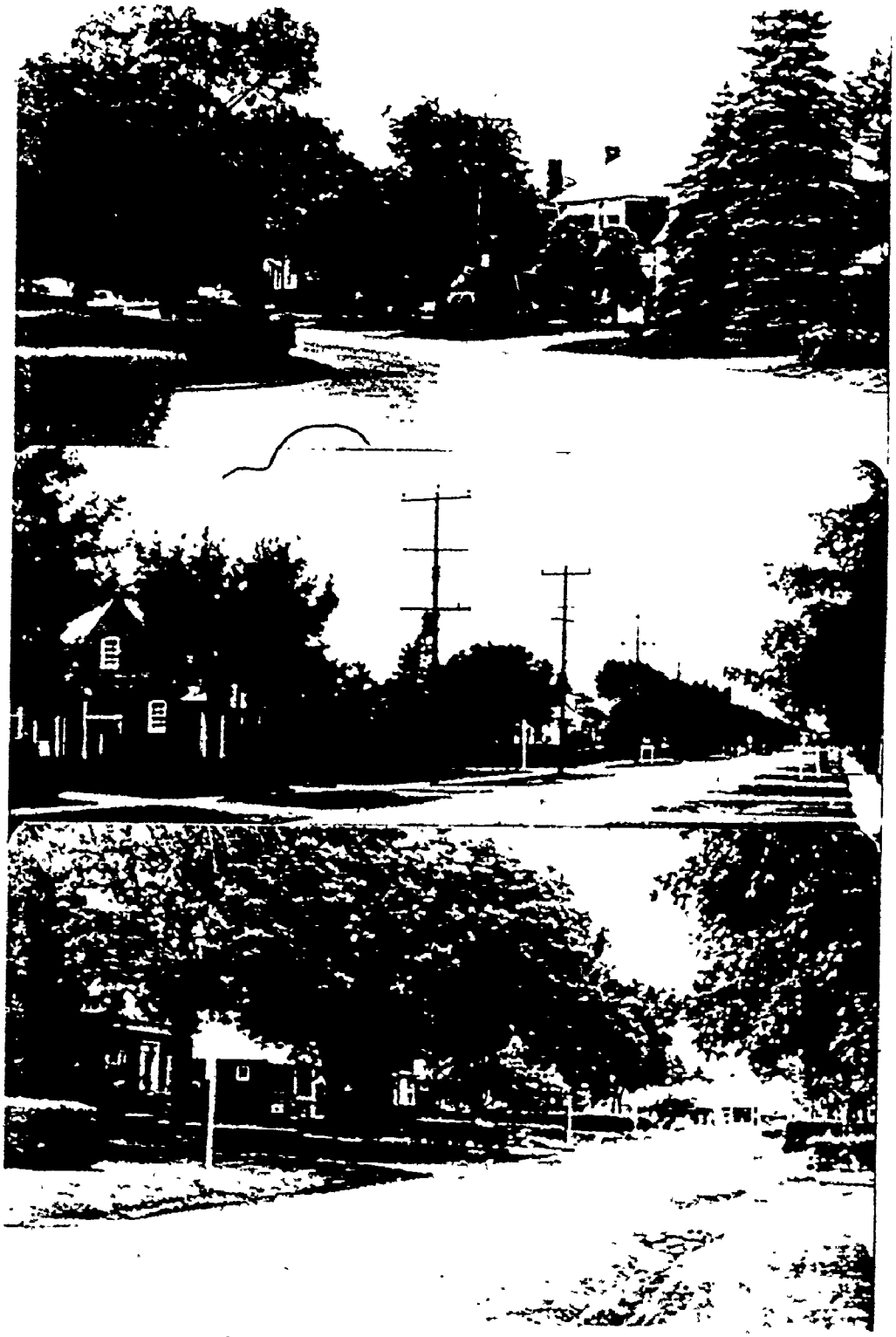
PHOTOGRAPHS OF AREA 1



Within 5 blocks — Primary school, park
5 to 10 blocks
11 blocks to 1½ miles — High school, shopping area

TABLE C4

PHOTOGRAPHS OF AREA 2

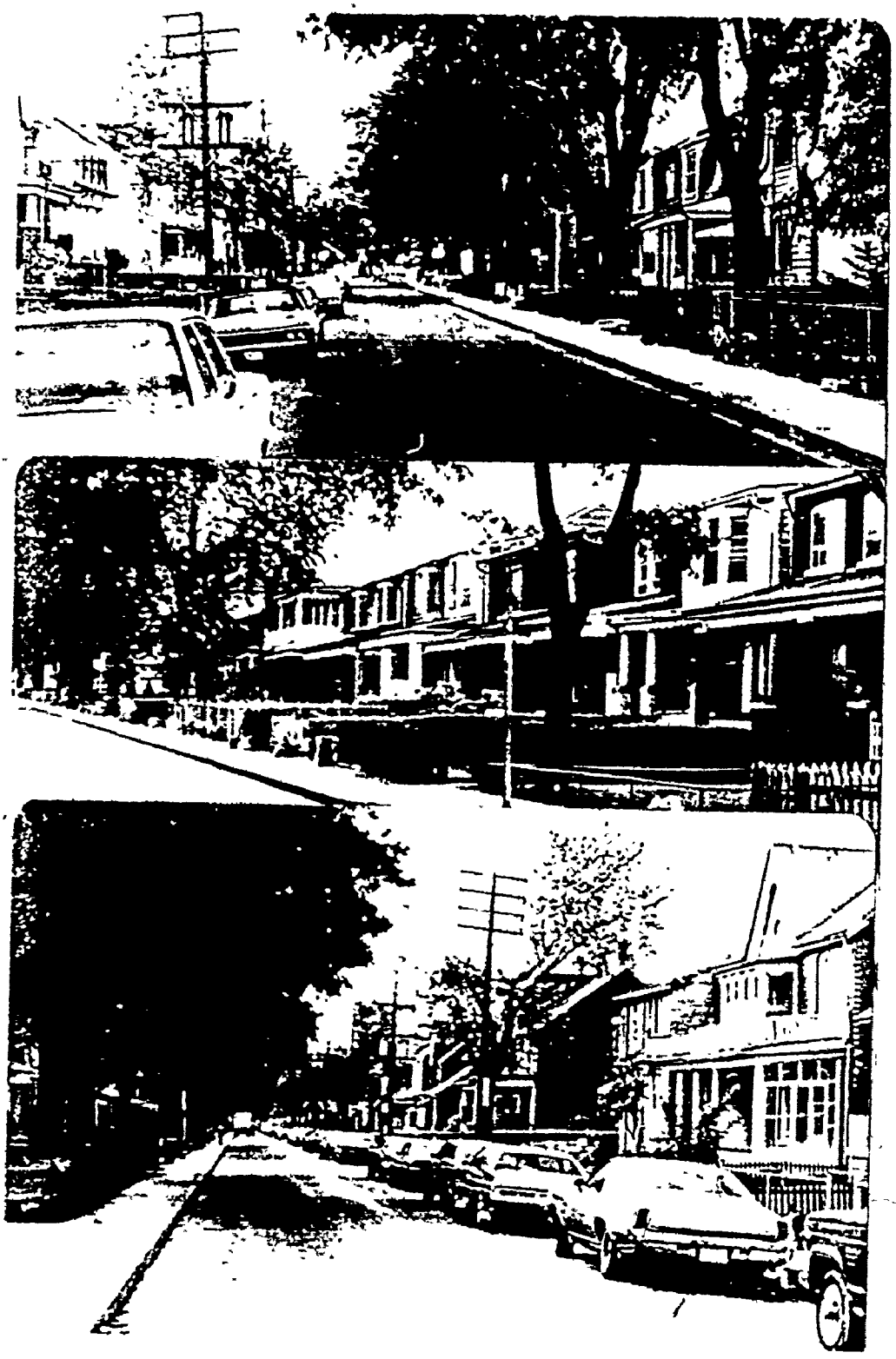


Within 5 blocks
5 to 10 blocks
11 blocks to 1½ miles

Shopping area
Primary school, park
High school

TABLE C5

PHOTOGRAPHS OF AREA 3

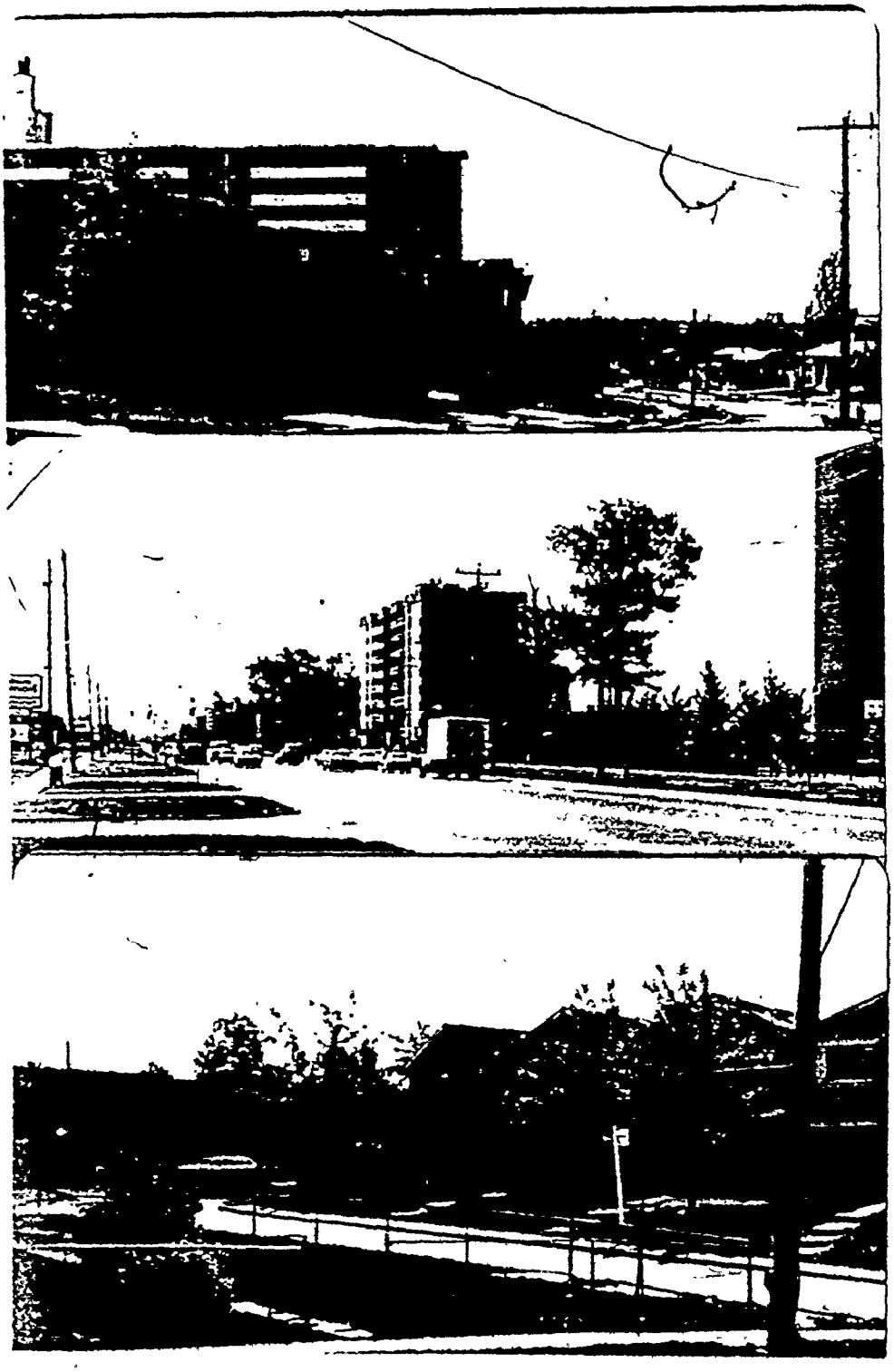


Within 5 blocks
5 to 10 blocks

Primary school, shopping area
High school, park

TABLE C6

PHOTOGRAPHS OF AREA 4

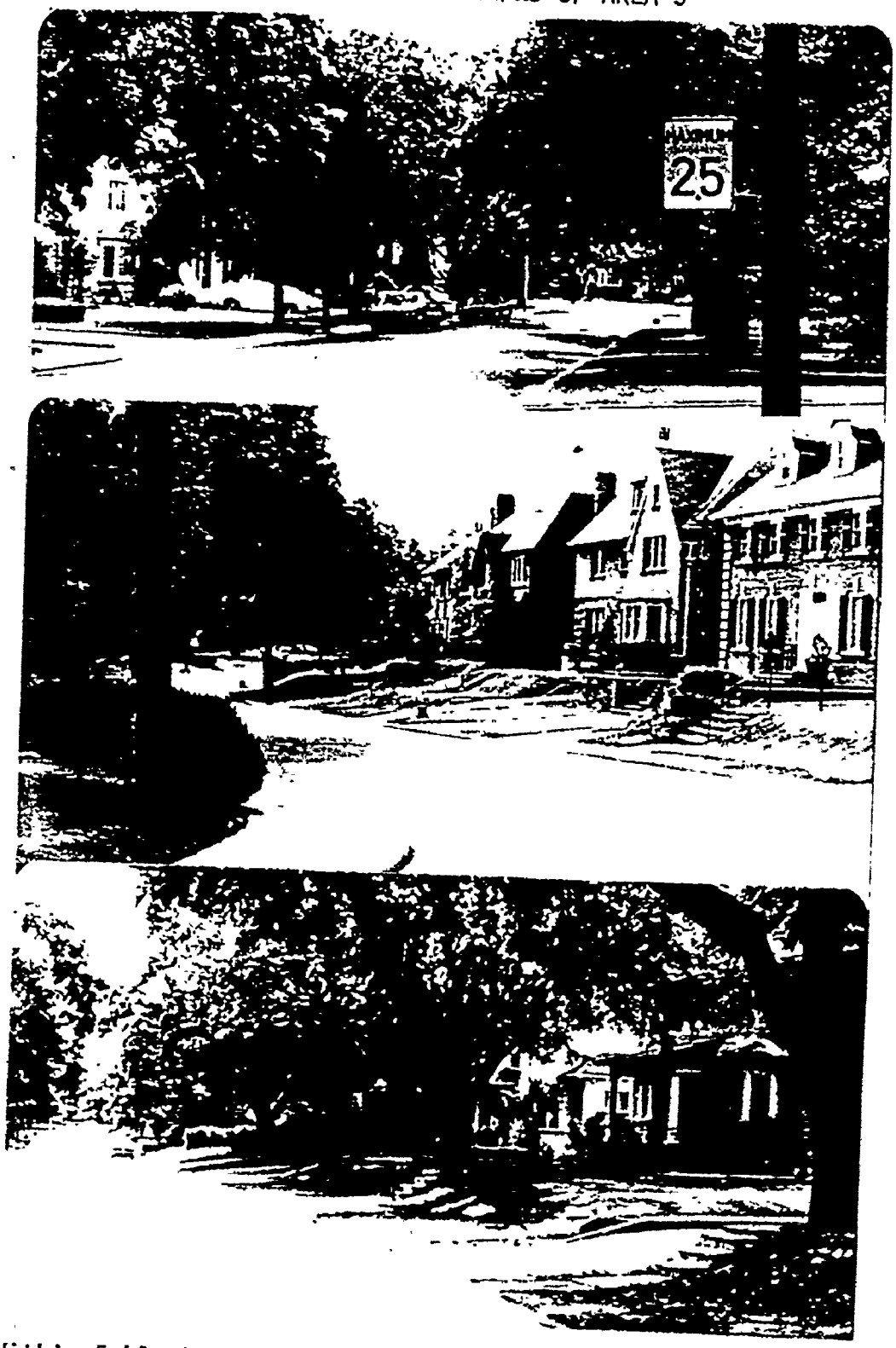


Within 5 blocks
5 to 10 blocks
11 blocks to 1½ miles

Primary school, park
High school
Shopping area

TABLE C7

PHOTOGRAPHS OF AREA 5

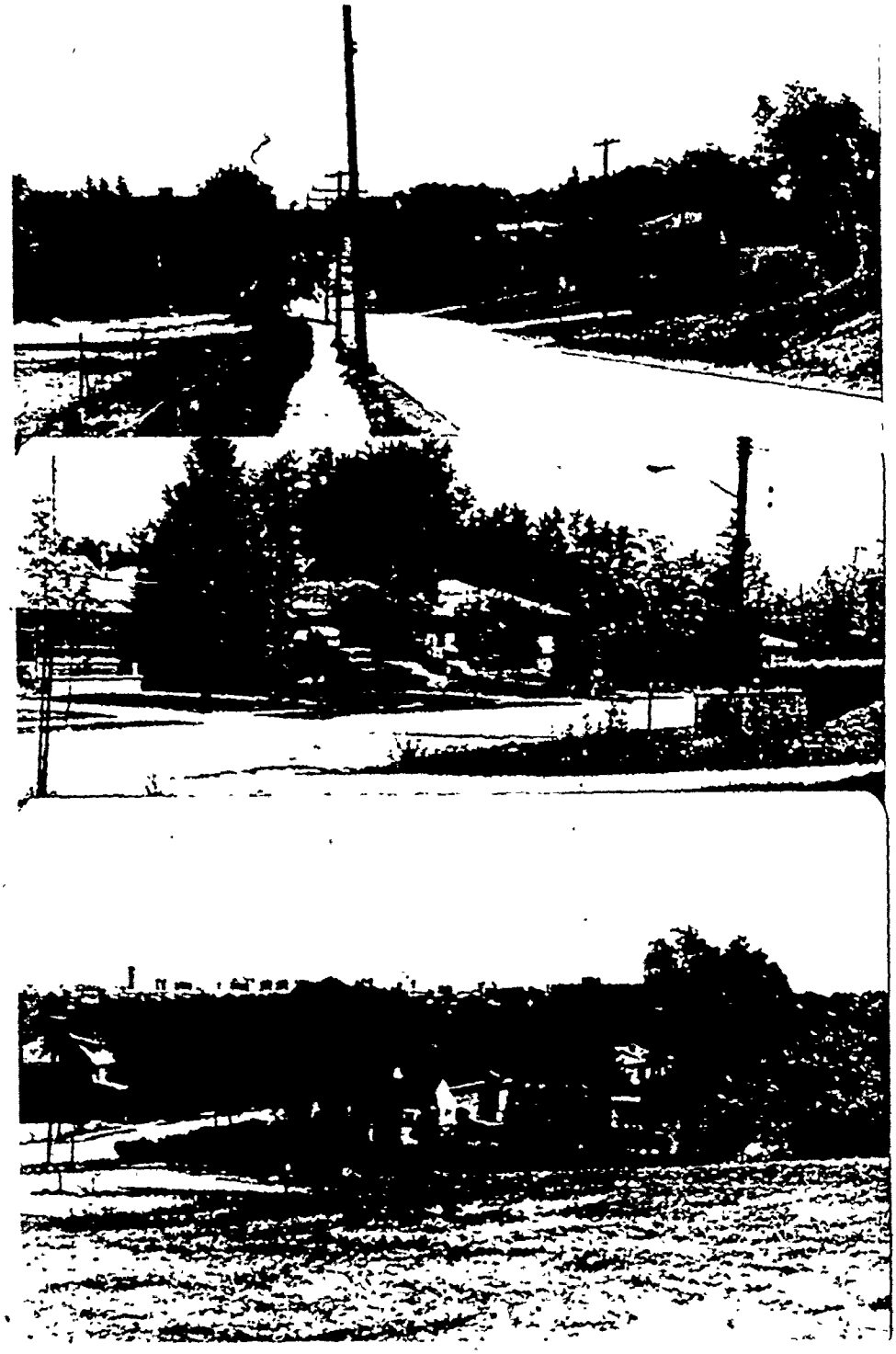


Within 5 blocks
5 to 10 blocks
11 blocks to 1½

Park
Shopping area

TABLE C8

PHOTOGRAPHS OF AREA 6



Within 5 blocks
5 to 10 blocks
11 blocks to 1½ miles

Shopping area
High school, primary school
Park

TABLE C9

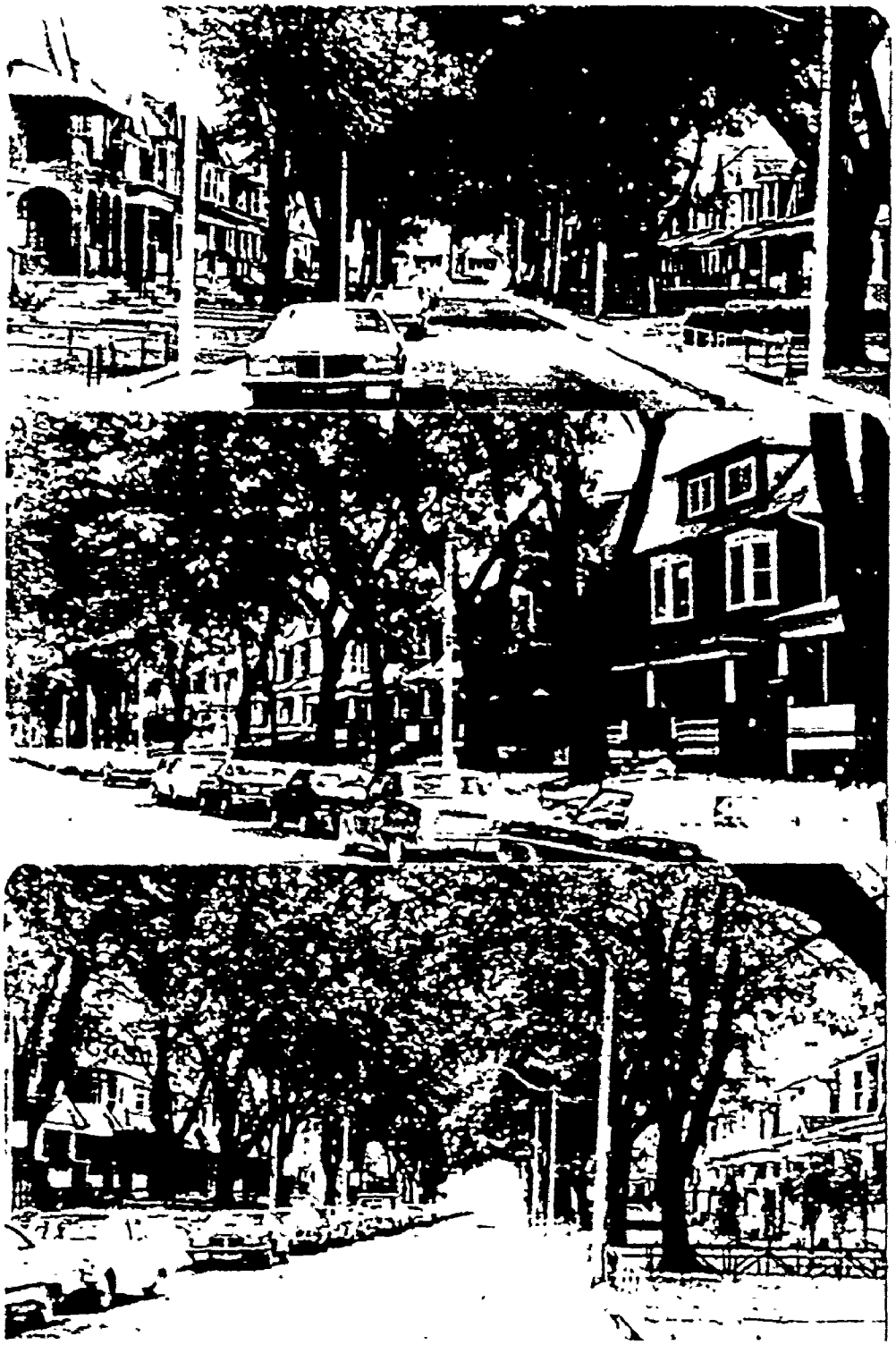
PHOTOGRAPHS OF AREA 7

Within 5 blocks
5 to 10 blocks
11 blocks to 1½

Park, high school
Primary school
[illegible] area

TABLE C10

PHOTOGRAPHS OF AREA 8



Within 5 blocks
5 1
11

Primary school, high school, shopping area
Park

TABLE C11

PHOTOGRAPHS OF AREA 9

Within 5 blocks
5 to 10 blocks

Shopping area, park
Primary [illegible]l, high

APPENDIX D

FREQUENCY OF INTRANSITIVITIES

The frequency of intransitivities in the resistance-to-change grids is reported in this appendix. The maximum number of intransitivities is

$$d_{max} = \frac{n(n^2 - 4)}{24}$$

where n is the total number of attributes (Coombs, 1964). With 16 residential area attributes, the maximum number of intransitivities is 168.

Table D1 shows the frequency that intransitivities were calculated for each respondent.[1] The number of intransitivities in the resistance-to-change grids ranges from 0 to 89, with a mean of 21.49. This mean is well below the maximum number of possible intransitivities. Moreover, the mean number of intransitivities does not vary greatly across the four life cycle stages (Table D1). The attributes have been considered independently in the resistance-to-change experiment. These results confirm the validity of this methodology for eliciting information about attribute importance.

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[1] The intransitivities were calculated by a formula developed by Dr. A. P.M. Coxon, Department of Sociology, University of Edinburgh. Dr. C.L. Jones, Department of Sociology, McMaster University was kind enough to write the computer pr

TABLE D1

THE FREQUENCY OF INTRANSITIVITIES BY LIFE CYCLE STAGE

Number of Intransitivities	Life Cycle Stage				Total
	1	2	3	4	
0		1			1
1 - 10	4	6	10	7	27
11 - 20	6	8	7	7	28
21 - 30	6	4	5	11	26
31 - 40	3	3	2	2	10
41 - 50	1	1		1	3
51 - 60	2	1	2		5
61 - 70		1	1		2
71 - 80					
81 - 90				1	1
Mean	24.68	21.52	20.48	19.97	21.49

APPENDIX E

EXAMINATION OF THE VALIDITY OF FREQUENCY DATA AND LOCATION RATINGS

This appendix evaluates the extent that the reported frequency and location of participation in leisure activites measure propensities to engage in these activities. The effects of opportunities to undertake leisure activities on reported rates of participation in these activities are analysed. These opportunities are described by two variables. If a woman reported no local participation in a recreational activity, she was asked "Are these facilities available in your residential area?". The responses were recorded as 1, "no", and 2, "yes". This question was phrased vaguely to insure its applicability to a variety of leisure activities.

Information concerning the opportunities for social interaction was obtained by ratings of the number of closest friends living in the area. The three point rating scale ranged from 1, "all", to 3, "none". These two variables are crude estimates of the opportunities available in each woman's residential area.

The effects of availability on participation in leisure activities is examined by Mann-Whitney U tests of significant pairwise differences. The results (Table E1, E2) show that availability is related primarily to the location of leisure activities. Without exception, the dispersion of leisure activities outside the residential area is related

TABLE E1

THE EFFECTS OF AVAILABILITY ON THE FREQUENCY

OF RECREATIONAL LEISURE ACTIVITIES, MANN-WHITNEY U STATISTICS

Leisure Activity	Availability	
	U	Significance
Shopping	235.0	N.S.
Participate sports	73.5	N.S.
Public entertainment	677.0	N.S.
Club participation	425.0	N.S.
Cultural activities	434.0	N.S.
Churchgoing	267.5	N.S.
Visit parks	507.0	**
Go to restaurants	701.0	N.S.
Extension classes	129.5	N.S.
Children's activities	26.0	N.S.

** significance, $p \leq .05$, 2 tailed, N varies.
N.S. not significant.

TABLE E2

THE EFFECTS OF AVAILABILITY ON THE LOCATION

OF RECREATIONAL LEISURE ACTIVITIES, MANN-WHITNEY U STATISTICS

Leisure Activity	Availability	
	U	Significance
Shopping	558.0	*
Participate sports	147.0	*
Public entertainment	1420.0	*
Club participation	735.0	*
Cultural activities	799.0	*
Churchgoing	465.0	*
Visit parks	1204.0	*
Go to restaurants	1421.0	*
Extension classes	262.5	*
Children's activities	60.5	*

* significant, $p \leq .01$, degrees of freedom = 1.

significantly ($p \leq .05$) to the availability of facilities. Availability has significant ($p \leq .05$) effects on the frequency of only one leisure activity; visiting parks.

A one way analysis of variance (Tables E3, E4) of the effects of friends in the residential area confirms that the location of leisure activities is related to opportunities for undertaking activities. Apart from the frequency of chats with neighbours, the rate of participation in social activities is not related significantly ($p \leq .05$) to number of friends in the area. In contrast, the location ratings of three social activities: visiting people unexpectedly, being entertained in others' homes, and phoning, are related significantly ($p \leq .05$) to the number of friends within the area. Friends in the area has weaker ($p \leq .16$) effects on the location ratings of the remaining social activities.

These results indicate that the frequency of participation in leisure activities is a valid measure of the propensity to engage in these activities. The location ratings do not accurately represent desires for local participation in leisure activites. However, opportunities to engage in leisure activities are not related strongly to life cycle status. The mean level of association[1] (Table E5) between the availability of facilities and life cycle status is .20. Since the bias introduced by the measurement error in the location ratings is not related strongly to life cycle status, the location ratings are accepted as measures of desires for local participation in leisure activities.

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1 χ^2 statistics were inappropriate because of zero frequencies in certain cells.

TABLE E3

THE EFFECTS OF FRIENDS ON THE

FREQUENCY OF SOCIAL ACTIVITIES

Leisure Activity	χ^2	Significance
Greet people	3.45	N.S.
Neighbouring	9.98	*
Visit people	2.87	N.S.
Be entertained	1.18	N.S.
Phone	.40	N.S.
Help people	1.63	N.S.

* significant, $p \leq .01$, degrees of freedom = 2.
N.S. not significant.

TABLE E4

THE EFFECTS OF FRIENDS ON THE LOCATION OF SOCIAL ACTIVITIES

Leisure Activity	χ^2	Significance
Greet people	3.65	N.S.
Visit people	7.01	**
Be entertained	13.60	*
Phone	12.12	*
Help people	4.78	***

* significant, $p \leq .01$, degrees of freedom = 2.
** significant, $p \leq .05$, degrees of freedom = 2.
*** significant, $p \leq .10$, degrees of freedom = 2.
N.S. not significant.

TABLE E5

THE ASSOCIATION BETWEEN LIFE CYCLE STATUS AND OPPORTUNITIES FOR EACH ACTIVITY

Activity	Cramer's V*
Shopping	.17
Participate sports	.20
Public entertainment	.25
Club participation	.18
Cultural activities	.14
Churchgoing	.15
Visit park	.27
Go to restaurants	.11
Extension classes	.24
Children's activities	**
Number of friends in residential area	.25

* no significance levels are reported.

** information is not available for every life cycle stage.

APPENDIX F

DIFFERENCES IN RESIDENTIAL AREA ATTRIBUTES AMONG THE AREAS

This appendix examines the extent that the residential areas were judged to differ on the residential attributes. Specifically, the discussion centres on the eight residential area attributes identified in the analysis of life cycle effects on residential area aspirations (Chapter 5, Section 5.4). This analysis was undertaken to determine if the observed agreement on residential area preferences among the four life cycle stages is due to the composition of the choice set. It was hypothesized that the ten areas included in the choice set did not vary on the attributes for which life cycle effects were found.

The results of a one way analysis of variance (Table F1) show that the median attribute values vary significantly among the areas. The areas are perceived to differ on the eight residential area attributes. The pattern of pairwise differences between areas indicated that some areas were judged to be similar on the eight residential attributes. For example, the median value of privacy does not vary between the first and fourth areas. However, these similarities account for less than 30 percent of the possible pairwise differences. Thus, it is concluded that the ten areas included in this study are perceived to differ significantly on the eight residential area attributes that are related to life cycle status.

TABLE F1

ONEWAY ANALYSIS OF VARIANCE OF ATTRIBUTE VALUES IN EACH AREA

Attribute	χ^2	Significance
Quiet	600.95	*
Greenery	499.85	*
Friendly	205.48	*
Housing type	633.31	*
Well kept	301.96	*
Open space	591.44	*
Lot size	573.57	*
People like us	213.66	*
Status	436.71	*
Building distance	604.64	*
Safety	462.60	*
Land use	292.58	*
Privacy	519.56	*
Access to shops	1029.00	*
Access to parks	1029.00	*
Access to schools	1029.00	*

* significant, $p \leq .01$, degrees of freedom = 9.