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THE RELATIONSHIP BETWEEN LEISURE ACTIVITIES AND
SATISFACTION WITH A RURAL FRINGE LOCATION

by

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A THESIS SUBMITTED IN PARTIAL FULFILMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS

in the School
of
Community and Regional Planning

We accept this thesis as conforming to the
required standard

THE UNIVERSITY OF BRITISH COLUMBIA

April, 1973

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ABSTRACT

The purpose of this study is to explore the relationship between residents' leisure activities and their physical environment as an aid to understanding their satisfaction with that environment. This is done with specific reference to Maple Ridge, a fringe area of Vancouver.

Three major questions are considered. How do the characteristics of the residents affect the frequency of their participation in various leisure activities? To what extent does the environment constrain or facilitate activities which the residents have an interest in pursuing? And, to what extent does participation in activities which are facilitated or constrained by the environment influence residents' satisfaction with that environment? Ten hypotheses and two assumptions were formulated to examine the relationships suggested by these questions.

The study data consists of 152 responses to a mailed questionnaire which was distributed to a random sample of the residents of Maple Ridge. Univariate techniques for comparing percentage differences, means and correlations, and the multivariate techniques of factor analysis, Hotelling's T^2 statistic and discriminant analysis are used to test the hypotheses.

It is shown that the residents who were most interested and participated most frequently in rural related activities preferred a more rural environment; whereas, there is some indication that those who participated less frequently in such activities preferred a more urban environment. For planners, the results of this study imply that it is valid to examine residential location on the basis of the residents' leisure activities and that the fringe should be recognized as an area offering unique residential opportunities within the metropolitan area.

TABLE OF CONTENTS

	Page
LIST OF TABLES	vi
LIST OF ILLUSTRATIONS	viii
Chapter	
I. INTRODUCTION	1
Reasons for this Approach	2
Past Studies of the Fringe	4
Activities Approach	15
Summary	30
II. METHODOLOGY	33
Data Collection	34
Methods Used in the Analysis	43
III. THE CHARACTERISTICS OF THE RESIDENTS	48
General Description of the Sample Population	48
A Comparison of Longterm versus New Residents	55
The Effects of the Predictor Variables on the Frequency of Participation	59
Summary	78
IV. ACTIVITIES - ENVIRONMENT - SATISFACTION	81
Activities	81
The Physical Environment of the Fringe	89

Chapter	Page
Satisfaction with the Fringe Environment	93
Summary	105
V. SUMMARY AND CONCLUSIONS	110
General Implications	110
Further Research	113
Planning Implications	115
BIBLIOGRAPHY	118
APPENDICES	
A. Letter Accompanying the Questionnaire	124
B. Questionnaire	126
C. Glossary of Terms	130
D. Percentage and Mean Frequency of Partici- pation in the Activities	132

LIST OF TABLES

Table		Page
II.1.	A Comparison of Age Groups from the Sample and Census Populations	41
III.1.	Income	29
2.	Occupation	50
3.	Education	51
4.	Ages	52
5.	Past Residence	53
6.	Length of Residence	54
7.	Life Cycle by Residential Experience . . .	57
8.	Occupation by Residential Experience . . .	58
9.	Participation Index by Income	61
10.	Mean Frequency of Participation by Income	63
11.	Income Generating Activities by Income . .	67
12.	Mean Frequency of Participation by Life Cycle	71
13.	Mean Frequency of Participation by Residential Experience	76
IV.1.	Rotated Factor Loadings for Participation in Activities	84
2.	Correlation between Interest in and Performance of Each Activity	86
3.	Site Related Activities by Lot Size	90
4.	Lot Size by Lot Preference	91
5.	Visiting by Distance to Neighbours	92

Table	Page
IV.6. Mean Frequency of Participation by Residential Preference	97
7. Discriminating Variables	99
8. Mean Frequency of Interest by Resi- dential Preference	101

LISTS OF ILLUSTRATIONS

Figure		Page
I.1.	General Relationships and Variables To Be Considered	32
III.1.	Mean Frequency of Participation by Income	64
2.	Mean Frequency of Participation by Life Cycle	72
3.	Mean Frequency of Participation by Residential Experience	77
IV.1.	Mean Frequency of Participation by Residential Preference	98
2.	Mean Frequency of Interest by Residential Preference	102

CHAPTER I

INTRODUCTION

The aim of this thesis is to explore the relationship between people's leisure activities and their physical environment. This is done with specific reference to the rural fringe. Three major questions will be considered. Firstly, how do the characteristics of the residents affect the frequency of their participation in various leisure activities? Characteristics which are considered important in this regard are length of residence, the location of the former residence, income, occupation, education and stage in life cycle. The second question to be considered is to what extent does the environment constrain or facilitate activities which the residents have an interest in pursuing? And, thirdly, to what extent does participation in activities which are facilitated or constrained by the environment influence residents' satisfaction with that environment. The ability to answer the last two questions will depend on the extent to which the activities which the residents engage in can be categorized to reflect differing degrees of congruence with the environment.

Reasons for this Approach

Studies which have in the past attempted to understand people's relationship with their environment have done so by surveying people's attitudes and preferences toward their environment. This process has become increasingly popular in planning where the demands for input from people being planned for are continually growing.

The validity of this method has been questioned by several persons (Godstalk and Mills, 1969, p. 88; Michelson, 1970, p. 204; Perin, 1970, p. 45) who have suggested that if planners are concerned with facilitating the activities which people want to do, they should learn from what they actually do; rather than from what they say they would do in a given set of circumstances.

The study of activities is not suggested as a replacement of user preference surveys; rather, it is felt that an understanding of a person's activities is valuable in contributing; one, to the design of an environment suited to the resident's needs; and two, in providing a basis for an approach to the understanding of a person's residential location behaviour within the metropolitan region.

Considering first, the validity of studying activities for environmental design, Michelson (1970, p. 204) states: "Experiential congruence of people and environment is the research approach needed to form specific physical plans

for the future." Experiential congruence he defines as the degree to which the environment actually accommodates the characteristics and behaviour of people (1970, p. 31). Thus, if we can identify activities which are facilitated by the environment; activities, which Perin (1970, p. 45) describes as ". . . everyday activities which people gain confidence in. . . ." Then the attributes of the environment which support those activities can be protected and enhanced.

Godstalk and Mills, (1969) have utilized the study of activities, with citizen participation in a collaborative approach to planning. As they state:

. . . planning must be concerned with the objective analysis of human activities
Once established within the planning process,
activities analysis can provide continuing
contact with the pluralistic urban context
. . . . (pp. 86-87)

If a specific physical environment within the metropolitan region can be shown to provide unique opportunities to engage in certain activities and that the participation in those activities is important to the residents" satisfaction with their environment then support is more likely to be available to protect that environment.

This approach is particularly relevant to the study of rural fringe areas which are continually being threatened with development and the resulting destruction of the existing environment.

The basis on which we propose that the rural fringe should be examined, assumes that people choose to live in the fringe because they have an interest in pursuing activities which are facilitated by the physical environment. This approach assumes that the essential environmental attributes unique to the rural fringe can be maintained. For, as Melvin Webber (1963, p. 53) suggests in his article "Order in Diversity," we should be planning for diversity to meet the needs of disparate groups, ". . . one pattern of settlement and its land use is superior only as it better accommodates on going social processes. . . ."

Past Studies of the Fringe

Most studies of the fringe have been descriptive. They have attempted to describe it in terms of the urban--rural continuum. Thus past studies have done little to develop a theoretical approach to the study of the fringe. After a systematic review of the literature on the fringe, Ford and Sutton (1964, p. 214) conclude: ". . . theoretical problems are statements of relationships and when research is not formulated in specific relational terms it is vain to expect a theoretical contribution to be derived from it."

In this section, we will very briefly note the nature of the fringe which has been stressed in the literature and

then we will consider the characteristics of the fringe residents which might affect the frequency of their participation in various activities. The differences between new residents from urban areas and long-term residents from rural areas will be reviewed, in view of the literature which has dealt with this topic. A hypothesis will be proposed to test the appropriateness of past findings with regards to this study. The effect of differences in income, education, occupational status and life cycle on particular activities and the extent of participation in general will also be considered. This will be done simply to describe the effects of these characteristics, since we do not intend to control for these effects in this analysis.

Finally, it will be noted that the literature on the fringe suggests that past residential location together with the length of residence will affect the location of the activities in which fringe residents engage. We are suggesting that residents choose to live in the rural fringe because they have an interest in participating in particular activities which the fringe environment facilitates. While the notion of self-selection with regard to activities or life style is only now being tested for residential location in the central city and suburbia, the general implication of the notion suggests that there

should be no difference in the type of activities which new residents from urban areas and residents from rural areas engage in. We are considering only residents who are now living in the fringe, residents whose previous residence was in an urban area will be referred to as "urban residents" throughout the remainder of this study; similarly, those from rural areas will be referred to as "rural residents." The degree to which this can be demonstrated will depend on the differences in characteristics of the rural and urban residents and the effects of these differences on participation in various activities.

The results of this examination should provide us with an understanding of the extent to which people (especially those from urban areas) choose to live in the fringe because it facilitates activities which they have an interest in pursuing.

The Nature of the Fringe

A great deal of literature on the rural-urban fringe has accumulated, in which authors have attempted to clarify the nature of this area. Researchers have reviewed previous definitions and then offered or not offered definitions according to the needs and contexts of their particular studies. We shall not repeat this procedure here; except, to summarize the four elements, one or more of which,

McKain and Burnright (1953, p. 109) in their examination of some thirty studies, note are generally, included in definitions of the fringe.

1. In the rural urban fringe there are both urban and rural land uses. . . .
2. In the fringe there is a mingling of people--some of whom work in, and are oriented toward agriculture--while at the same time the remainder pursue urban occupations and an urban way of life. . . .
3. The fringe is a geographic area with its bounds often arbitrarily determined by gradation in the concentration of land use and the demographic characteristics attributed to it. . . .
4. Some authors further posit the traditional character of the rural-urban fringe and stress the abnormal or problem nature of the area. . . .

The reader who is interested in reviewing past descriptions of the fringe in greater detail could consult articles by Ford and Sutton (1964) and Pryor (1971), who have systematically reviewed the studies on the fringe revealing their inconsistencies and inadequacies.

Wissnick (1962, p. 211) after reviewing the past descriptions of the fringe in some detail concludes:

"It is questionable whether as much weight should be attached to the unitary concept of the rural-urban fringe as it has been construed by several sociologists."

Durrani (1969), in attempting to deal with this question, compared three fringe areas which differed in the extent

to which they were developed; from an area which corresponds to what we are calling "rural fringe," to an area which might be classified as suburban.

We are not concerned with describing the fringe in terms of all other such areas. We will be content to describe the area with which we are concerned as a rural fringe in view of the physical characteristics which are unique to the area. The characteristics of the residents of the fringe which have been described in the literature will be described in more detail in order to establish a point of comparison for this study.

Residents' Characteristics

As the transitional nature of the fringe suggests at least two distinct groups of people can be identified; those who have lived there for many years and the newcomers. Some such as Sectorsky (1955) in his case study of a fringe area on the eastern seaboard have considered only the newcomers or exurbanites; Gist (1952) dealt with the nondecentralists and the decentralists or those who moved from the city. McKain and Burnright (1953) actually found that most of the newcomers were urban. However, Rodehaver (1946, pp. 49-57) identified the movement to the fringe as two directional, from both urban and rural areas. He found that people from rural areas came later in their

life cycle and had lower incomes than those who came from urban areas. Durrani indicated that the greatest difference between the groups existed between the longterm residents from rural areas who were low on the socio-economic scale and the urban newcomers who were high. The rural long-term residents were found to have a higher percentage of families in the oldest life cycle category, while urban newcomers had a greater proportion in the youngest categories.

Cromwell (1970) in a recent study of the fringe area in Surrey identified two distinct groups,--the newcomers had higher incomes, education and occupation classifications than the long-term residents. Hypothesis 1 is proposed, in order to test these observations with respect to this study.

HYPOTHESIS 1:

New residents from areas will differ from long-term residents and new residents from other rural areas in that they will have higher status occupations, higher incomes, higher levels of education and will be in a younger life cycle category.

With regard to the activities of the residents of the rural fringe, Reissman (1954, p. 76) observed that many previous studies had clearly demonstrated:

. . . the existence of a positive relationship between social class on the one hand and the character and extent of leisure activity and social participation on the other hand.

Martin's (1953) findings substantiated this observation as far as social associations. While Clark (1958, p. 207) in a study of "Leisure and Occupational Prestige" identified a number of activities not related to occupation; hunting, bowling, working in the garden, out of town visiting and relaxing. Durrani (1969, pp. 262-263) found that there was no significant relationship between social interaction and social class. While social interaction and socio-economic status were significantly related to participation in the more developed areas, they were only related to the extent of participation in the least developed area. We will test this relationship by hypothesizing that -

HYPOTHESIS 2:

Residents with higher incomes, or higher levels of education, or higher status occupations will participate proportionately more frequently in the activities as indicated by an overall measure of participation, than those residents with lower levels of income, or education, or occupation.

The activities which contribute to significant overall differences will be examined; even though we are unable to hypothesize how the variables will affect participation in the individual activities.

We can however be more specific with regard to several of the activities, since it has been suggested by Gist (1952, p. 329) that people are attracted to fringe areas because the large lots enable them to do activities which will supplement their income; such as vegetable gardening, and keeping livestock. Whitehead (1968) in his study of rural country living outside of Calgary noted that 51% of the residents were using their land, 38% admitted getting some income from it, while 51% were reluctant to admit their motives. Whitehead (1968, p. 50) stated that in the case of Calgary where 20% of the lots are over 20 acres -

. . . most parcels of six acres or less were strictly urban that is, the space rather than the land was utilized. . . . There is a tendency as the residents' income level declines to switch from land uses purely recreational in character (e.g. horses) to uses from which some income can be derived.

These observations suggest that these activities may not be, at least for some residents, leisure activities since these have been defined as -

. . . activities apart from the obligations of work, family and society to which the individual turns at will for either, relaxation, diversion or broadening his knowledge and spontaneous social participation, or the free exercise of his creative capacity. (Dumazedier, 1962, pp. 16-17)

Although, some activities such as club membership, vegetable gardening and caring for animals may involve commitments of time and energy and thus have been described as semi-leisure or non-work obligations; because they involved the discretionary use of time, they will be considered as leisure activities here.

The extent to which income does influence participation in what can be described as income-generating or income-supplementing activities will be tested by hypothesis 3.

HYPOTHESIS 3:

Residents with low incomes will participate proportionately more frequently than residents with higher incomes in income-generating or income-supplementing activities such as vegetable gardening and the keeping of livestock.

Stage in life cycle will also be considered as a variable affecting the frequency of participation in activities. In this regard it is hypothesized that -

HYPOTHESIS 4:

It will be possible to discriminate between residents over 65 and residents under 65 in that the former group will have a lower mean frequency of participation on activities which are physically demanding.

A number of researchers, (Gist, 1952; Martin, 1953; McKain and Burnright, 1953; Kurtz and Smith, 1961; Cromwell, 1970; and Pahl, 1970) have suggested that the location of a fringe dweller's past residence influences the location of the activities in which he engages; especially, for those from urban areas. It has been observed that they return to the area of their former residence to engage in activities in which they had developed an interest. As Kurtz and Smith (1961, p. 38) stated: ". . . they are 'in' but not 'of' the fringe." Martin's (1952, p. 690) findings suggest that the location of associations in which residents participated was significantly influenced by their residential location ten years earlier, the length of their residence in the fringe and their last residential location. Considering these findings, we would suppose that residents from urban areas would participate more frequently in activities which are done in an urban location than rural residents. Only, Durrani's findings suggest that this might not be so. He (1969, p. 82) noted that rural residents participate more frequently in organizational activities than other residents.

It should be noted here that in this study it is the location of the activity which characterizes it as urban or rural. This distinction will be considered further in the next section.

With regard to the recreation literature, Hendee

(1969), p. 333) noted that while several recreation studies indicated that urbanites are represented disproportionately in many forms of outdoor recreation; others, have shown that the rural population predominates in such activities in general, as well as in certain specific activities. A number of explanations as to why people do participate in particular activities have been offered. The two most prominent are that, people seek "new experiences"; the other, that they seek that which is "familiar." In an attempt to test the validity of these contradictory approaches Knopp (1972, p. 136) somewhat inconclusively concluded, ". . . people will seek new experiences while still maintaining a reluctance to give up the things that are familiar to them."

As was noted in the introduction to this section the approach we are proposing suggests that there should be no difference between the urban and rural residents in their participation in activities related to the fringe. Hypothesis 5 will test this assumption. The basis for making this assumption will be considered in more detail in the next section.

HYPOTHESIS 5:

New urban residents will not be distinguishable from long-term rural residents by their lower mean frequency of participation in activities which are related to the environment.

Activities Approach

After reviewing the basis for the notion of self-selection in the literature, we will consider the second and third question posed in the introduction to this chapter.

Self-Selection

In the past, fringe areas have been studied as areas of transition. The fringe was an area of cheap housing in comparison to areas within the city limits and many people choose to live there for this reason. This was generally true, except in cases, such as the areas which Sectorsky (1955) studied where the fringe was an area of retreat for the wealthy exurbanites from the unpleasant environment of the city. Examination of a study done by Brademus (1955, p. 78) which compared city and fringe living attitudes indicates that there was little difference between the city and fringe residents with regards to the reasons which they gave for selecting their neighbourhood. In both cases

the most important factor was the lack of other available housing. A recent comparative study of the rural fringe, with which we are concerned and a nearby town by the Regional District of Dewdney Alloutte (1971) revealed that while cost, taxes and house space were the primary locational factors of the urban residents; rural setting, cost and lot size were the most significant locational factors of the rural fringe residents. The differences between these two groups can be accounted for by the changing function of the fringe area--a function related to-day less to the provision of housing alone, and more to the provision of a residential environment unique within the metropolitan region in the activities which it facilitates. Whitehead in his study of rural country living around Calgary used a similar approach. He (1968, p. 14) noted:

. . . the country resident is differentiated from the suburbanite by motivation. The suburbanite is in the fringe because the available housing is there; the country resident on the other hand values the rural landscape and his active association with it.

The notion of self-selection can be traced back to the social area analysts who presented it as alternative to the traditional ecological explanation of residential location which was based on economic determinism. They attempted to identify the social characteristics which

distinguished the different areas within the city, and which attracted particular types of people. As Rossi (1955, p. 26) stated:

For one thing, residence is to a large degree a self-selection phenomenon: households which desire a particular neighbourhood characteristic tend to locate themselves in areas where this aspect is maximized.

Others, (Bell, 1958; Foote, 1960; Gans, 1963, 1967 and Zelan, 1968) have documented the efforts of people choosing particular areas within the city in an effort to match their needs more closely with their residential location. Life cycle, residential experience, and life style have been the most commonly dealt with criteria for selection of residential locations. Bell, particularly has been credited (Michelson, 1969, p. 12) with the development of the notion of self-selection according to life style. Bell (1968, p. 146) states: "These individual differences are not randomly made. . . . On the contrary, they represent for the most part, systematic preference patterns. . . ."

Bell stresses the importance of specific areas within the metropolitan region for facilitating certain life styles when he notes (1968), p. 151, that -

. . . the move to the suburbs expresses an attempt on the part of the movers to find a location in which to conduct family life that is more suitable than that offered by the central city.

Thus, while the idea of self-selection is not new the importance of activities as a factor in the selection of specific environments is only now beginning to be tested.

Chapin (1968, p. 12) uses the notion of self-selection to argue that ". . . activity patterns, particularly those that relate to the way in which people use city space and community facilities, affect their choice of residence." Chapin (1968, p. 15) suggests that choices of the use of their time are based on their efforts to maximize satisfaction within constraints of income, stage in life cycle and knowledge of the options open to people. In their decision to move, Chapin suggests people attempt to maximize their "accessibility opportunities" as derived from activity analysis and their "livability opportunities" as derived from their past experience, and education. In their study of "Household Activity Patterns and Land Use," Chapin and Hightower (1965, p. 228) infer that -

. . . differences in activity patterns between areas are not simply reflection of differences attributable to differences in status between areas, but must be explained in part at least by factors specific to the area.

In a study of housing design and location Michelson noted that within a neighbourhood the residents who were most actively engaged in activities outside their homes, located close to those activities.

Michelson is presently engaged in a panel study which will test the hypothesis that persons with a particular life style select areas of particular housing types and locations. Initially he (1969, p. 25) planned to operationalize his definition of life style by deriving life style typologies from choice behaviour--or activity clusters characteristic of populations. In a preliminary publication of his findings he (1972) reports that while people choose specific environments for a variety of reasons, these can be considered as constraining influences; whereas, reasons associated with life style, activity patterns and expectations of neighbours characteristics can be considered as determining factors.

Most of the studies which have considered the notion of self-selection have compared differences between those who choose to live in downtown areas versus those who choose to live in suburban locations. To study this notion with regards to the rural fringe we must be able to specify the elements of the physical environment which serve to attract person's with specific life styles. This we will attempt to do in the next section.

The Physical Environment of the Rural Fringe

An exception to the lack of a theoretical approach to the study of the fringe is Martin's (1953) "The Rural

Urban Fringe - A Study of Adjustment to Residential Location." Martin examined the relationship between the accessibility to the city centre and the resident's satisfaction with their residential location and the relationship between socio-cultural characteristics of the residents and their degree of satisfaction with their location. However, Martin's findings were inconclusive and in fact he (p. 79) concluded by stating:

The pattern of life found in the modern fringe area differs so little from that of life in the city neighbourhood, that many individuals can and do move from the city to fringe to city readily and without interruption.

Michelson (1970, p. 17) in explaining the inadequacies of the ecological approach notes: ". . . space has been utilized as a *medium* in most of human ecology rather than as a *variable* with a potential effect of its own." This difficulty is evident in Martin's study. Critics (Wissnick, 1962, p. 175) have questioned the definition of the area which Martin considered a fringe; suggesting it was in fact suburban.

In order, to be able to consider the effects of the fringe environment we must consider what its distinguishing qualities are. This can be done at two levels; by considering the nature of the environment itself and by considering the fringe environment in comparison with other environments within the metropolitan region.

The most obvious attribute of the rural fringe residential environment which distinguishes it from an urbanized fringe area or suburbia are the large lots. Where there are no sanitary sewers the size of lot will vary from rural fringe to rural fringe depending on local soil conditions; in such areas, local zoning regulations generally require that the lot size be adequate for the efficient operation of septic tanks. Large lots permit the use of the land for gardening and the keeping of animals.

The large lots and the scattered development of the rural fringe mean that distances between neighbours is greater than in an urban area; thereby, increasing the privacy which is available to the fringe resident. In addition, the nature of the landscape will have an effect on the activities which can be pursued, as well as reducing (in the case of hilly wooded land) or increasing (in the case of flat cleared land) the ability and need for the neighbours to exercise social constraints on each other. The natural setting, view and relatively unpolluted environment of such areas make the enjoyment of nature and hobbies connected with it readily accessible to the residents. In connection with these observations it is hypothesized that -

HYPOTHESIS 6:

Larger lots will be positively associated with the keeping of animals, and vegetable gardening.

HYPOTHESIS 7:

Residents located further from their neighbours will visit them less often than those who are located closer to their neighbours.

In comparing the fringe location with alternative residential locations, it is obvious that activities involving the use of community facilities, institutions, stores, recreation facilities such as movie theatres, concert halls, bowling alleys and hockey rinks would be more conveniently located for an urban resident.

This is true because the number of people required to support these activities necessitates that a higher density exist than is available in the fringe. Activities requiring the largest number of people to support them will be located furthest from the fringe. By the same reasoning, location in the fringe facilitates the participation in activities which require areas of undeveloped, sparsely populated land; such as fishing, hunting, horseback riding and hiking. Activities which are done in urban areas, we will label urban-related activities; activities which are done in rural areas

will be labelled rural fringe related activities or rural-related activities for short. The latter will consist of those activities facilitated by the rural area as well as those activities which are facilitated by the nature of the individual's site.

The notion of self-selection suggests that we can go beyond the labelling of individual activities as urban or rural-related activities, and consider that a person will participate in activities which can be grouped by their similar degree of congruence with the environment. In other words, the activities in which a person participates most often can be described as urban or rural-related. In our analysis we will examine the degree to which this actually occurs.

It may be argued that the difference in time-distance or accessibility between a fringe location and an urban location may not be sufficiently large to be a factor. In fact Chapin (1965, p. 229) hypothesizes that except for convenience shopping and neighbouring ". . . people tend toward indifference to time-distance below some value at the order of magnitude of a quarter to half an hour. . . ." However Michelson's (1969b, p. 226) findings which indicated that within a neighbourhood the residents who were most actively engaged in activities outside their home located close to those activities, encourage us to suppose that relatively small time-distance differences could in fact

be important. Kuper (1953, p. 121) notes that there is an association between the strength of an interest and a person's willingness to go outside his neighbourhood to pursue that interest, emphasizing the importance of convenience as a factor in the participation in activities.

Many recreation studies are now considering accessibility as an important factor in addition, to the traditional socio-economic variables, in contributing to the use of facilities and recreation areas. Goodale (1965, p. 101), who studied the differences in the participation rates in leisure activities between twelve census tracts in Minneapolis concludes:

. . . leisure behaviour and attitudes of the people in living in a particular census tract differ from those in other areas and some of this difference remains even after age and social status are controlled.

In addition to testing the degree of congruence between specific attributes of the fringe and activities which are facilitated by those attributes, attempt will be made to examine the degree of correlation between the interests in performing various activities and the extent to which they are actually performed. It is assumed that this correlation would be higher for rural-related activities which are facilitated by the environment than for urban-related activities.

The degree to which the fringe environment facilitates or constrains the activities which the residents perform and have an interest in performing will be tested indirectly by examining how this relationship affects the residents satisfaction with the environment.

Satisfaction with the Rural Fringe

In considering the relationship between participation in activities and satisfaction with the environment; we should state firstly, that we are assuming that a resident gains satisfaction by participating in activities and therefore, we will test the idea that he will be more satisfied with his residential environment if the activities in which he participates are facilitated by the environment.

In a study of housing design and location, Michelson noted (1969, p. 26) as we mentioned previously that residents who were most actively engaged in activities outside of their homes located close to those activities, and that those residents who were in that congruent category were less likely to want to move in the future. While Michelson warns that this relationship should be approached with caution, he concludes: ". . . leisurely activity is a mediating variable operating between formal characteristics of a person or his setting on the one side and his satisfaction or preferences, on the other."

While Gist (1952) and Martin (1953) note overall satisfaction with the fringe, Whitehead noted a high mobility rate in the area. Planners who have been concerned with modifying the fringe environment and who have solicited answers to questions regarding the suitability of the servicing in the fringe and general satisfaction with the area have received many expressions of dissatisfaction with the fringe environment, (Brademus, 1956; Lower Mainland Regional Planning Board, 1963). We would propose that much of this dissatisfaction is related to the reason why people located in the area. In the past when the reasons were generally house-related, residents would not have felt that the compensating characteristics of the environment made up for the inconveniences of greater distances to urban facilities and the lack of services; (and in fact, many fringe areas were composed of city-sized lots) unless, they had activities which were facilitated by the environment. Martin's results (1952, p. 72) although, admittedly inconclusive suggested that high levels of satisfaction ". . . tend to be associated with the buying of a home located on more than a half acre of land, part of which is devoted to a garden."

In considering the principal of self-selection it may be that urban residents who are attracted to the rural fringe because of its natural setting; after having rejected the urban area as a place to live found that living

in the fringe they were constrained from pursuing activities which they enjoyed and took for granted in the urban area.

One study which attempted to identify reasons for dissatisfaction with housing location concluded: ". . . the reasons for not liking a location were closely related to inconvenience of location in contrast to the reasons for liking a location which were primarily related to the environment." (Brewster, 1955, p. 54) Wolpert (1966, p. 96) in an attempt to develop a model of mover behaviour suggests that it is the matching of the individuals needs with the elements of the environment which together, ". . . generate the fulfillment of needs/or the generation of frustration with respect to the individuals place which sparks the mover-stayer decision." Preferred residential location will be used as a measure of satisfaction with living in the fringe, this will avoid the constraints such as income which would exist if more specific measures were used.

The hypotheses in this section are actually testing the mental congruence or preference of the residents with their environment. "Mental congruence exists if an individual thinks that particular spatial patterns will successfully accommodate his personal characteristics, values, and style of life." (Michelson, 1970, p. 30)

Although it was suggested that the study of experiential congruence is more valuable to the planner, than

mental congruence we are using this technique in addition to studying experiential congruence, for several reasons. Firstly, data could not be collected for this study which actually showed the extent to which residents reacted to the constraints imposed by the environment. And secondly, what people think of their environment is important in the expectations which they have regarding that environment, therefore we are attempting to discover to what extent these aspects are actually dependent one on the other.

Hypothesis 8 will test to what extent participation in activities which are facilitated by the fringe is a factor which can be used to distinguish those persons who prefer not to live in the rural fringe from those that do.

HYPOTHESIS 8:

Residents who prefer to live in urban areas can be distinguished from those who prefer to remain where they are as well as from those who prefer to live in a more rural area, by their higher mean frequency of participation in urban-related activities.

The residents who prefer to live in urban areas might also be expected to have lower mean frequency of participation in rural-related activities.

The degree to which the rural fringe environment is perceived to facilitate rural-related activities might also be tested.

HYPOTHESIS 9:

Residents who prefer to live in more rural area can be distinguished from those who prefer to remain where they are as well as from those who prefer to move to more urban areas by their higher rate of participation in rural-related activities.

Finally, we should consider that those who have an interest in pursuing environment-related activities will be more satisfied with their environment than those who do not have similar interests, regardless of their degree of participation in those activities. In the study conducted by the Regional District of Dewdney Allouette (1971, p. 10) it was noted that -

The concern of the rural residents regarding space for livestock and garden is for the most part one of having available rather than actually using the space.

Taking account of this observation hypothesis 8 and 9 will also be tested using interest in activities, rather than frequency of participation. It is expected that interest will distinguish more strongly, since it can not be as directly constrained by the lack of time and money as can frequency.

Finally, we would expect that those persons who participated more frequently in rural-related activities would be more satisfied with the level of services,

schools, distance to stores, etc. than those residents who participate less frequently in rural-related activities; assuming that satisfaction gained from doing activities or having interest in activities facilitated by the environment will be related to satisfaction with the specific attributes of the environment .

HYPOTHESIS 10:

Interest in rural-related activities will be positively correlated with satisfaction with variables of distance to stores, schools and other attributes of the fringe environment.

Summary

In this introductory chapter, we have discussed the three questions central to this study which deal with the residents characteristics, the environment and satisfaction with that environment. The literature regarding the fringe was considered; as well as the literature relating to the idea of self-selection of residential areas based on leisure activities which are facilitated by the environment.

Characteristics of the residents which may modify this general approach to choice were considered. This was done because we cannot neglect the constraints theory proposed by Pahl which suggests that residents may be

constrained from exercising freedom of choice of location or from participating in certain activities by such characteristics as income, occupational status et cetera. This is particularly important for planners who must consider as many of the variables as possible if they are to have a realistic idea of the area which they are studying.

Important characteristics of the rural fringe environment were considered; specifically, lot size, distance to neighbours and accessibility; thus, enabling us to describe activities as urban or rural-related. Finally, the effects of the participation in urban-related versus rural-related activities was considered with regard to the residents' satisfaction with the environment.

Generally, the relationships which will be tested are described by Figure I.1. The methodology associated with the collection of data will be presented in Chapter 2. Chapter 3 will include firstly, a general description of the residents and secondly, the results of the analysis of the hypotheses dealing with the residents characteristics and their influence on participation. Chapter 4 will include the results of the analysis of the hypotheses dealing with the environment and the residents' satisfaction with the fringe. In Chapter 5 the results will be considered for their general and planning implications, and suggestions for further study will be made.

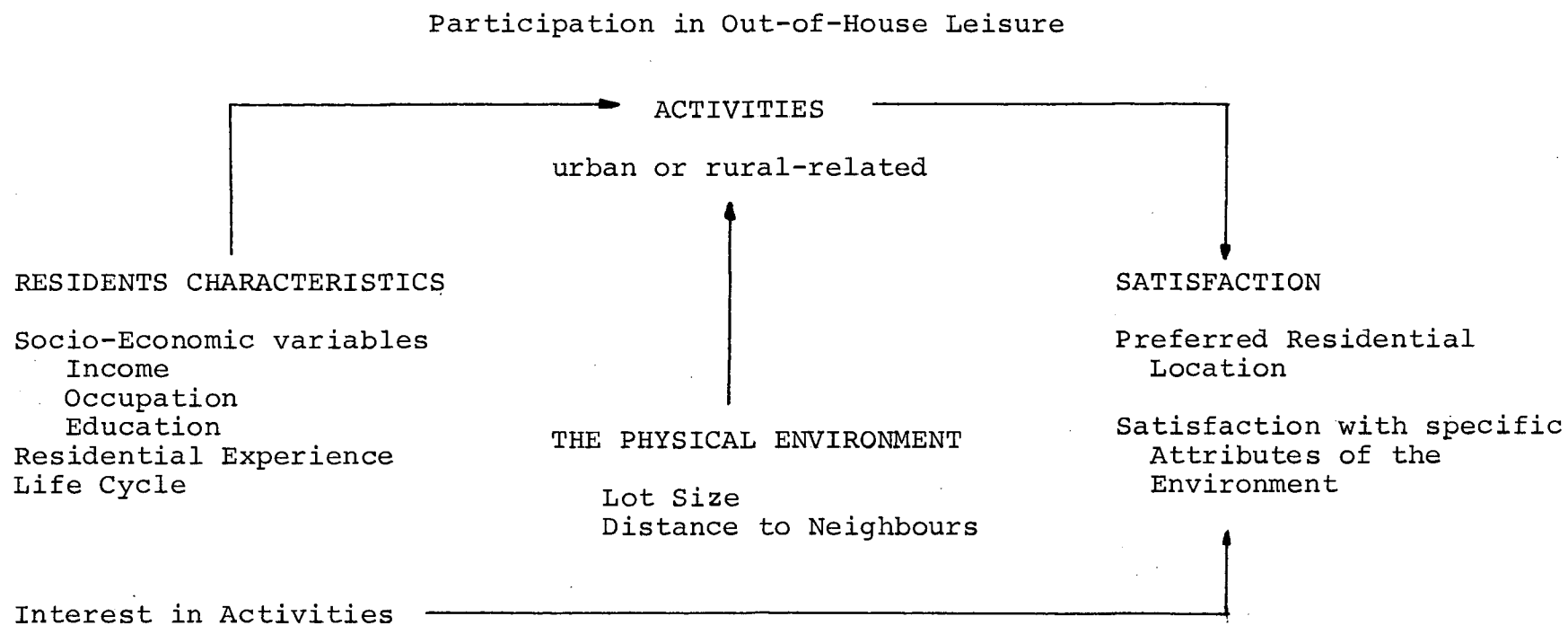


Figure I.1 GENERAL RELATIONSHIPS AND VARIABLES TO BE CONSIDERED

CHAPTER II

METHODOLOGY

During the early planning stages of this study it was felt that activity time budgets would yield the most appropriate kind of information required to test the hypotheses. These would give a detailed account of the amount of time the respondent spent doing particular activities, the location of the activity, as well as the time spent getting to and from the activity. However, this kind of data had to be rejected as inappropriate for this study for several reasons. Firstly, because we are dealing with participation in out-of-house leisure activities which is influenced by the season of the year, (Michelson, 1969c), collections of data during at least the two major seasons would have been required. Secondly, it would have been preferable to collect the data over a fairly long period of time, since some activities are done fairly infrequently. These two constraints suggest that a fairly time consuming and costly study would have been involved. Thus, it was felt that it would be valuable to explore the relationships with a more expedient means of data collection before such a study could be considered justified.

As an alternative, it was therefore proposed that information on participation in activities be obtained by asking the respondents to indicate on an ordinal scale how frequently they participated in a list of activities. The assumption being that frequency and the amount of time devoted to an activity are related variables. A measure of frequency will indicate more directly constraints imposed by the environment. This combined with questions orientated to finding out what people think of their environment or their mental congruence with it (as opposed to their experiential congruence) would allow the relationships with which we are concerned to be tested.

Data Collection

In considering the method of data collection, it was considered to be inadequate to sample clusters of households because of the uncontrollable effects which the random differences within the area in lot size, distance to town, and topography might have on the sample. Therefore, it was felt desirable to randomly survey a relatively large area. This, plus the fact that in the fringe houses are quite a distance apart and some far from the road; as well as the need to obtain a fairly large number of cases because of the number of variables involved, led us to conclude that a mailed questionnaire would be the most

appropriate method of collecting data despite the serious drawbacks of this method. It was also considered that the information required could be obtained by straight forward close-ended questions which could be easily and quickly completed by the residents.

Choice of the Study Area

The characteristics of the rural fringe considered as the criteria for the choice of a suitable study area were -

1. The area should be within commuting distance of Vancouver.
2. The area should be one which is not likely to be developed at urban densities in the near future. This criterion was proposed to avoid sampling speculators and persons who would likely locate in an area if they thought it was going to develop in the near future.
3. The area should be one in which there is a number of new residents.
4. The area should not be one in which the main land use is agricultural. This was considered an important criterion because of the incompatibility of agricultural and residential land uses.

The area in the Lower Mainland of Vancouver which best fit these criteria was the Municipal District of Maple Ridge. Maple Ridge is approximately fifty-five minutes driving time from downtown Vancouver. The area has a total population of 25,000 including the small towns of Haney and Hammond and several other smaller hamlets. During the past five years there has been a substantial increase in the population of Maple Ridge; however, the zoning bylaws of the area restrict lot sizes to two acres or over in unserviced areas. The present plans for the extension of the sanitary sewers from the commercial urban centre of Haney are limited by topography. The landscape of the area to the east of Haney is crisscrossed by a number of ravines, which are generally wooded. There are also areas of mostly cleared flat land. Within Maple Ridge the boundaries of the study area were drawn to avoid areas developed at urban densities as well as those which will be developed in the near future.

Questionnaire Design

Information covering three general subjects was required; information regarding the individual's satisfaction with his environment, his activities and socio-economic data. A copy of the questionnaire is included in Appendix B.

Satisfaction was measured in two ways. First, the respondents were asked where within the metropolitan area they would prefer to live. Second, they were asked to express their satisfaction or dissatisfaction with thirteen elements of their environment including tax, cost, of house and lot, house size, open space, clean air, quietness, quality of schools, quality of services, neighbours, distance to stores and schools.

With regard to activities, three types of information was required; frequency of participation, the location in which the activity was performed and the degree of interest the respondent had in the activity. In order to collect this kind of information a modified version of the "Index: Leisure, Participation and Enjoyment."¹ was used. (In Miller, 1964, pp. 213-216). Out-of-house leisure activities which are done in both urban and rural areas, as well as outdoor activities done on the individuals site and activities which had been emphasized as important by previous studies were included in the list. The list of activities was not meant to be exhaustive, rather effort was made to keep the number of activities small, in order to ensure that a sufficient response would be received.

The leisure activities done in an urban location are church related activities, going to the movies, plays or concerts, attending club or organizational meetings, volunteering, shopping other than for groceries, going

to restaurants or pubs etc., attending sports events or playing sports. The rural area activities, included; hiking, hunting or fishing, and horseback riding. The rural site activities included; caring for animals, vegetable gardening, maintenance of lawn or flower garden, maintenance of house or car and reading or relaxing outdoors. An examination of the location in which the activities were done before the questionnaire was analysed indicated that this grouping of the activities by location was a reasonable one.

Occupational status was measured by coding the male household heads' type of employment, either present or past on Blishen's Occupational Class Scale (Blishen, 1958).²

Sample Selection

It was considered desirable to gather a random sample from the entire area; it was also thought to be important that sections within the area be randomly covered to include the variations in topography and lot size which occur within the study area. Therefore, the sample was divided into areas, and a proportional sampling within each was taken.

Engineering maps at a scale of 1:200 were obtained on which each lot was marked and each house indicated by its house number. These maps divided the study area into forty-one areas of equal size (with the exception of

the five areas adjacent to the river). These areas were used as the basis for the stratification. Using zoning and landuse maps, properties in commercial, industrial or agricultural land uses were eliminated from the sample. The number of eligible households was then counted for each of the areas and the total considered with regard to the sample size. It was decided that if every fourth household was chosen the sample size would be adequate (over 100), even if there was a very low response rate. The sample size was 630 when every fourth household was chosen from each area beginning at a random point on each map.

Administration of the Study

Fifty pre-test questionnaires were sent on January 10th. As a result of this pretest, several modifications aimed at increasing the response rate were made. The questionnaire was reduced from four pages to three pages in length, questions were rewritten and increased effort was made to make the respondents aware of the goals and value of the study.

In this regard, the mayor was asked to write the covering letter which accompanied the questionnaire. (See Appendix A) In addition, a short article appeared in the local newspaper informing the residents of the study, its goals, and contents.

The questionnaires were mailed January 29th, by the 26th of February when it was decided that no more would be coded 158 had been received. Six of those were rejected as too incomplete to be included, 8 additional returns were received too late to be coded. Two hundred questionnaires were returned which had not been delivered, partially explaining the low response. When these returns were received, the author attempted to determine the cause by delivering the letters. It soon became apparent that a number of difficulties prevented the delivering of the questionnaires. Firstly, whenever, a building permit was issued a house number was indicated on the engineering maps; thus, there were some cases in which the house was not yet completed or was still vacant. In other cases, the building was an old one which had been abandoned or no house could be located at the address indicated on the map. Finally, some of the houses had rural route boxes, if the box had a house number on it then the postman would have been able to identify the address; otherwise, the questionnaire was not delivered. In considering what to do with these returned questionnaires their addresses were plotted on a map of the area and it was found that they were randomly distributed throughout the area as well as within each section. Since this was the case it was decided not to attempt to choose alternative addresses.

The response of 152 questionnaires which were used in the analysis represents a response rate of 35 percent of the questionnaires which were delivered.

In an attempt to judge the amount of bias which was introduced by this return rate, it was decided to compare the sample population with the population of the study area as indicated by the 1971 census figures. Since the only information available from the census was age group categories, these were compared with the sample for men and women between twenty-five and sixty-five. Comparison of the means of the two groups indicated that at the .1 level of significance for the men the mean ages were not significantly different. However, the sample for the women is slightly biased by women in the younger age groups. When a chi square test was performed on the sample population as compared to the census population, neither was shown to be significant; both men and women residents were over represented in the younger age groups and under represented in the older age groups especially those over 65 years of age. This illustrates the practical difficulties of a mailed questionnaire where a portion of the population is less educated, and less mobile, thus biasing the response.

TABLE II.1

A COMPARISON OF AGE GROUPS FROM THE SAMPLE
AND CENSUS POPULATIONS

Age Group	Percent			
	Men		Women	
	Census	Study	Census	Study
25-29	11.5	9.8	13.4	16.2
30-34	9.9	14.0	11.1	18.4
35-39	10.8	15.6	10.3	12.8
40-44	10.1	9.8	11.3	12.8
45-49	11.4	8.6	10.5	14.4
50-54	8.4	14.0	9.5	7.2
55-59	9.9	4.7	8.7	4.8
60-64	8.3	7.8	7.3	7.2
65 +	19.7	13.3	17.8	8.0
Total	100.0	100.0	100.0	100.0
Mean	43.56	42.32*	42.74	40.63

* A comparison of the mean ages of the men indicated they were not significantly different at the .1 level of significance.

Methods Used in this Analysis

The hypotheses and assumptions formulated in Chapter 1 were tested using a number of techniques. Multivariate techniques were used to test the differences between a number of the variables or two groups measured on a number of variables; specifically, participation or interest in the seventeen activity variables. Univariate techniques of simple correlation, differences of percentages and differences of means, with chi square and a Z statistic calculated to test the level of significance are commonly used techniques which will not be commented on further. However, additional comment will be made with regards to the multivariate techniques which were used.

In comparison with univariate techniques which consider the dependency of one variable with another, multivariate techniques enable us to examine the relationships which exist among variables, as well as between sets of variables. (Rummel, 1970) Thus, these techniques were particularly relevant in this analysis in which hypotheses were proposed to test the differences between two groups on a set of variables. The multivariate techniques used in this analysis were Hotelling's T^2 statistic, factor analysis and multiple discriminant analysis.

Factor analysis enables us to reduce a large number of variables to a smaller number of factors which may be more reliable than the single indices because they are derived from a combination of individual variables each of which may be an imperfect measure of an underlying factor. Factor analysis is used in this study to answer the question, to what extent can the activities which residents engage in be classified to reflect differing degrees of congruence with the environment? In other words, to what extent can the variation in the leisure activities in which an individual participates be explained by the fact that they are done in urban or rural areas. In this case, factor analysis is being used to test an informally stated hypothesis; as well as, being a useful tool in reducing the number of variables, giving an indication of the amount of variation in the activities which can be explained by grouping them and in providing factor scores--a measure which indicates where each respondent is in relationship to the other respondents on the factor scale. This measure is useful in grouping the respondents so that the groups may be compared by other procedures. In this case these factor scores of the respondents were used as measures on the factors which were correlated with their satisfaction with specific attributes of the environment. Factors rather than individual variables were used because it was felt that

the high degree of variability of the individual variables would result in little or no correlation; where as factors would include all the common variation and thus be more stable.

In comparison with factor analysis which produces a classification of variables, Hotelling's T^2 statistic and multiple discriminant analysis both start with predefined groups. Hotelling's T^2 statistic is used to test the assumption that a set of means differ significantly from a second set of means. This statistic is used in addition to ordinary univariate tests of means because when they are performed for many variables, the associated probability becomes misleading. The Hotelling's T^2 statistic indicates whether or not there is a significant chance that the means will differ and it indicates if any of the variables would individually be sufficient to prove that the overall means would be different.³ This statistic was used to test the second hypothesis. How this was done will be described further in Chapter 3.

In using the discriminant analysis, groups which we hypothesized will be different or similar on the activity variables will be considered as the dependent variables, while the activity variables will be considered as the predictor variables. In discriminating between predefined groups, discriminant analysis answers the following questions.

1. Is the *a priori* classification under consideration valid in terms of the variables that are being suggested as relevant to the classification?
 2. If it is valid, what "dimensions" validate the classification?
 3. Where do the groups lie in terms of these dimensions?
 4. Given the score of a new subject in terms of the original variables which group does it fit best.
- (Cherukupalle, 1969, p. 396).

Multiple discriminant analysis compares the amount of homogeneity within groups to the degree of homogeneity between the groups. The probability that this relationship might have occurred by chance is indicated by the level of significance of the F ratio.⁴ The position of the groups in terms of the dimensions is indicated by the F probability matrix which indicates the probability that you would be wrong if you assumed that the groups were different on the dimension. The hypotheses for which this technique was used will be described more fully in Chapters 3 and 4.

FOOTNOTES

CHAPTER 1

¹The "Index - Leisure Participation and Enjoyment" was originally designed to demonstrate the difference between university graduates and non-graduates, participation and enjoyment of forty-seven leisure activities. It was modified for this study by using only seventeen out-of-house leisure activities. A specific range of frequencies was used rather than the general categories of 'never' to 'frequently.' The like categories were reduced from five to three and a third question which asked the respondent to indicate where the activity was preformed was asked.

²Blisshen's Occupational Class Scale groups occupations into seven classes according to their combined standard score for Income and Years of Schooling By Sex using Canadian Census data from 1951. The classes can be very generally described as labourers in class one, to service workers, semi-skilled and skilled trades clerical workers, managers,--and officials and professionals in class seven.

³HOTEL ROUTINE, by Jason Halm in UBC TRIP by James H. Bjerring and Paul Seagraves, February 1972.

⁴A good description of discriminant analysis can be found in Cooley and Lohnes' Multi-variate Analysis. The computer program used was UBC BUD07M, Implemented from UCLA BMD07M Package by Paul Seagraves, October 1970.

CHAPTER 3

THE CHARACTERISTICS OF THE RURAL FRINGE RESIDENTS

The purpose of this chapter is threefold. Firstly, a profile of the sample population will be presented. Having discussed the characteristics of all the people, in the sample, the second section will focus on the differences between newcomers, urban and rural, and longterm residents. In the final section the degree to which the predictor variables--characteristics of the residents affect the frequency of participation in various activities will be described.

General Description of the Sample Population

The personal characteristics of the people surveyed can be described under three basic dimensions; socio-economic status, stage in life cycle, and residential experience.

Socio-economic Characteristics

Variables measuring income, occupation and education which together yield a measure of socio-economic status will be considered independently.

In the sample population 38.2 percent of the residents have incomes between \$8,000 and \$12,000, 14 percent have incomes of less than \$4,000, while only 4.4 percent are in the over \$16,000 category. The relatively high proportion of the sample in the lowest income range is partially explained by the fact that 13.9 percent of the male household heads are retired. The total family income reported included the contribution of the female household heads 33 percent of whom were working either full or part-time.

TABLE III.1

INCOME

Total Yearly Income	Percent
Under \$4,000	14.0
\$4,000 to \$7,999	22.1
\$8,000 to \$11,999	38.2
\$12,000 to \$15,999	21.3
Over \$16,000	4.4
Refused	5.6
TOTAL	100.0

An examination of the occupational structure of the sample indicates a relatively high percentage of the population; 11 percent in the Class 1 category,¹ that is engaged in resource extraction industries as lumbermen or

fishermen. Class 3, which describes semi-skilled workers and employees in service industries contained the largest percentage of respondents. This can be explained by the location of a large provincial hospital and several correctional institutions in the area or nearby. Class 5 and 7 which describes office workers and professionals is under represented in the sample as compared to the Canadian population (Blishen, 1958, p. 523).

TABLE III.2

OCCUPATION

Occupational Category	Percent
Class 1	11.0
Class 2	17.5
Class 3	40.5
Class 4	9.5
Class 5	7.9
Class 6	14.3
Class 7	1.6
Refused	12.5
TOTAL	100.0

As Table III.3 indicates the educational attainment of the respondents is generally low. Only 42 percent of the male household heads and 43.7 percent of the female

household heads indicated that they had completed high school.

TABLE III.3

EDUCATION

Education Level	Percent	
	Male	Female
Some Elementary	3.0	1.5
Elementary Grad	14.2	9.6
Some High School	25.4	31.9
High School Grad	27.6	36.3
Other	7.5	11.1
Some University	6.7	3.7
University Grad	13.4	4.4
Graduate or Professional Training	2.2	1.5
Refused	6.9	6.2
TOTAL	100.0	100.0

Life Cycle

The mean age of the male respondents is 44.5 years, while for the women it is 41.05 years. The ages of the male household heads will be used as the indicators of the

stage in the life cycle of the respondents. Slightly, over half of the men are under 45 years of age.

Although, no information was obtained on marital status; it can be said that except for the elderly, who may be living alone, there are few single persons in the area while a response was received from a group of single men sharing a rented house, only 6.9 percent of the total sample, were renting.

Generally, then the population is one of families although, the majority are not families with young children as indicated by other studies. The largest proportion of persons are in the 45 to 65 year age category.

TABLE III.4

AGES

Age Level	Percent	
	Male	Female
Under 25	4.5	5.2
25 to 34	24.0	30.1
35 to 44	25.4	23.6
45 to 65	33.6	24.2
Over 65	17.7	12.5
TOTAL	100.0	100.0

Residential Experience

When the location of the respondent's last residence is examined, the results indicate that the largest percentage, 37.5 of the sample came from an urban area. By comparison, with other studies of the fringe which found that the number of the residents from rural areas was negligible, 22.9 percent of this sample stated that they come from a rural area.

TABLE III.5
PAST RESIDENCE

Location	Percent
Urban	37.5
Suburban	14.6
Small Town	25.0
Rural	22.9
TOTAL	100.0

When the variable-length of residence is considered, significant information regarding the nature of this fringe is revealed. Fifty percent of the sample population lived in their residence less than six years, and as much as 20 percent have lived in their present residence for less than one year. This indicates the amount of recent develop-

ment in the area even though as was noted previously the sample is biased by younger residents. The median length of residence is 5.08 years.

TABLE III.6
LENGTH OF RESIDENCE

Number of Years	Percent
0 to 5.9	50.0
6 to 9.9	11.4
More than 10	38.6
TOTAL	100.0

Mean 8.42

The time it takes the working male household head to travel to work indicates the degree to which the Maple Ridge can be considered as a community, independent of Vancouver. Twenty-one percent of the workers are within 15 minutes driving time of their work place, indicating the employment opportunities available within Maple Ridge. However, 26 percent of the sample population indicated that they spent over 45 minutes getting to work, suggesting a work place location within Greater Vancouver. In fact, a special commuter bus service operates between Haney and Vancouver.

Summary

The social composition of the residents allows us to characterize this fringe area, as has been done in the past. Observations which can be considered significant in this regard are, the increasing number of new residents, the majority of whom are from urban areas; the percentage of persons who commute more than 45 minutes to work, and the occupation of the residents. By comparison with past studies the population in this sample is older. It is partially for this reason that we feel justified in considering this area as a 'rural' fringe. The reasons for this characterization that are associated with the environment of the area are covered in the next chapter.

Past studies have identified important differences in socio-economic status between the long-term and new residents, which are said to contribute to conflicting life styles of the two groups. In the next section of this chapter the extent of these differences are examined.

A Comparison of Long-Term Residents Versus New Residents

In this section the results of the analysis of Hypothesis 1 will be considered. Hypothesis 1 proposes that the new residents from urban areas differ from the new residents from rural areas as well as from long-term

residents by having higher socio-economic status and a younger life cycle category.

Percentage comparisons were used to test the degree of relationship between the variables. Chi-square tests of significance were calculated between the new residents (of less than 10 years) from urban areas and the new residents from rural areas; and between long-term residents (regardless of the location of their former residence) and the newcomers from urban areas.

No significant differences were found when the new residents from urban areas were compared to the new residents from rural areas using any of the socio-economic variables, income, occupation, or education; or using life cycle. The differences which were observed indicated the tendency for the rural residents to be older and lower in socio-economic status. These differences are comparable to the differences which Rodehauver observed. However, the differences between the rural newcomers and urban newcomers proposed in Hypothesis 1 could not be validated.

Significant differences were however, found between the urban newcomers and the long-term residents with regards to the age of the male household head (at the .001 level of significance) and the occupational class of the male household head (at the .01 level of significance). With regards to these two variables Hypothesis 1 is verified; in that proportionately, more urban newcomers had higher

prestige occupations and were younger than the long-term residents. Although, these relationships were confirmed the differences which existed on income and education variables were not shown to be significant. Table III.7 and III.8 indicate the significant relationships between the newcomers from urban areas and the long-term residents as well as the differences which exist between the urban newcomers and the rural newcomers.

Testing Hypothesis 1 confirms past observations, that there are significant differences between the long-term residents and new residents; although, differences

TABLE III.7
LIFE CYCLE BY RESIDENTIAL EXPERIENCE

Life Cycle Measure Years	Percent		
	Newcomers		Long-term Residents
	Urban	Rural	
Less than 35	47.7	52.4	11.6
36 to 50	31.8	38.1	30.2
50 to 65	17.0	4.8	34.9
More than 65	3.4	4.8	23.3
TOTAL	100.0	100.0	100.0

* The difference between the Urban Newcomers and the Long-term residents is significant at the .001 level.

TABLE III.8
OCCUPATION BY RESIDENTIAL EXPERIENCE

Occupation	Percent		
	Newcomers		Long-term Residents
	Urban	Rural	
Class 1	1.3	5.3	25.0
Class 2	16.9	15.8	16.7
Class 3	42.9	52.6	36.1
Class 4	10.4	5.3	8.3
Class 5	9.1	5.3	2.8
Class 6	15.6	15.8	11.1
Class 7	3.9	-	-
TOTAL	100.0	100.0	100.0

* The difference between the Urban Newcomer/the Long-term residents is significant at the .01 level.

between residents from urban and rural areas were not confirmed. The fact that neither income or education significantly differentiated between the new urban residents and the long-term residents reaffirms the observation that the fringe population with which this study is concerned is not comparable to Sectorsky's "exurbanites" or Pahl's (1965) "Urbs in Rure" representing wealthy persons seeking refuge in the fringe.

The importance of the differences which exist between the residents with regard to the activities which they pursue will be considered after the effects on the frequency of participation in various activities, by the predictor variables has been considered individually.

The Effects of the Predictor Variables on the Frequency of Participation in Activities

The predictor variables considered in this section include the three measures of socio-economic status, life cycle and the residential experience variables.

Socio-Economic Variables

Hypothesis 2 suggested that the variables of either income or occupation or education could be used to distinguish between groups who had a higher overall frequency of participation in the activities.

The first method used to test the effects of the socio-economic variables, which were postulated as important in Hypothesis 2, involved constructing an index of participation for each person. The index was calculated by simply adding the code which was given to the frequency of participation in each activity. Thus the size of the index gives a measure of frequency of participation. The

indices were classified into three groups; those below, around and above the mean scores on the index.

When these groups of indices were considered with regard to the variables of socio-economic status, only income was shown to be significantly related to the participation index. The relationship which was significant at the .05 level, indicated that the higher income group participated more frequently than the lower income groups. This substantiated Reissman's findings, and allows us to accept Hypothesis 2 with regard to income.

A second method of analysis was used to attempt to identify differences in over-all participation related to the predictor variables. For each of the predictor variables the means of two groups were calculated for each activity. Two groups were created by regrouping the classes previously identified and comparing only those who were high and those who were low on the variables.

Hotelling's T^2 statistic was computed to indicate whether the two groups of means were significantly different.² Again, only income resulted in a significant difference (at the .001 level) being identified between the frequency of participation of those below \$8,000 in income and those above \$8,000.

Since the Hotelling's T^2 statistic indicated that the means of none of the activity variables were sufficiently

TABLE III.9
PARTICIPATION INDEX BY INCOME

Participation Rate	Percent in Income Categories (000's of dollars)				
	Under 4.0	4.0 - 7.9	8.0 - 11.9	12.0 - 15.9	Over 1.60
Low	66.7	53.3	32.7	33.3	28.6
Medium	28.6	36.7	30.9	36.7	28.6
High	4.8	10.0	36.4	30.0	42.9
TOTAL	100.0	100.0	100.0	100.0	100.0

* Significant at the .05 level.

different to individually result in the difference between the groups of means, Z statistics were calculated to indicate which activities contributed to the differences.

The higher income group have higher mean frequencies of participation for most of the activities which are not done on the resident's site as well as for vegetable gardening and maintenance activities done on the residents site. The lower income group had significantly higher mean frequencies of participation in caring for animals and flower gardening and relaxing.

These results are consistent with Havighurst's and Feigenbaum's (1959, p. 397) findings in which they indicate that the upper class falls into a life style category which is community-centred; where as lower class groups are more home-centred. This does not however, account for the higher means for the high income group in maintenance of house or car.

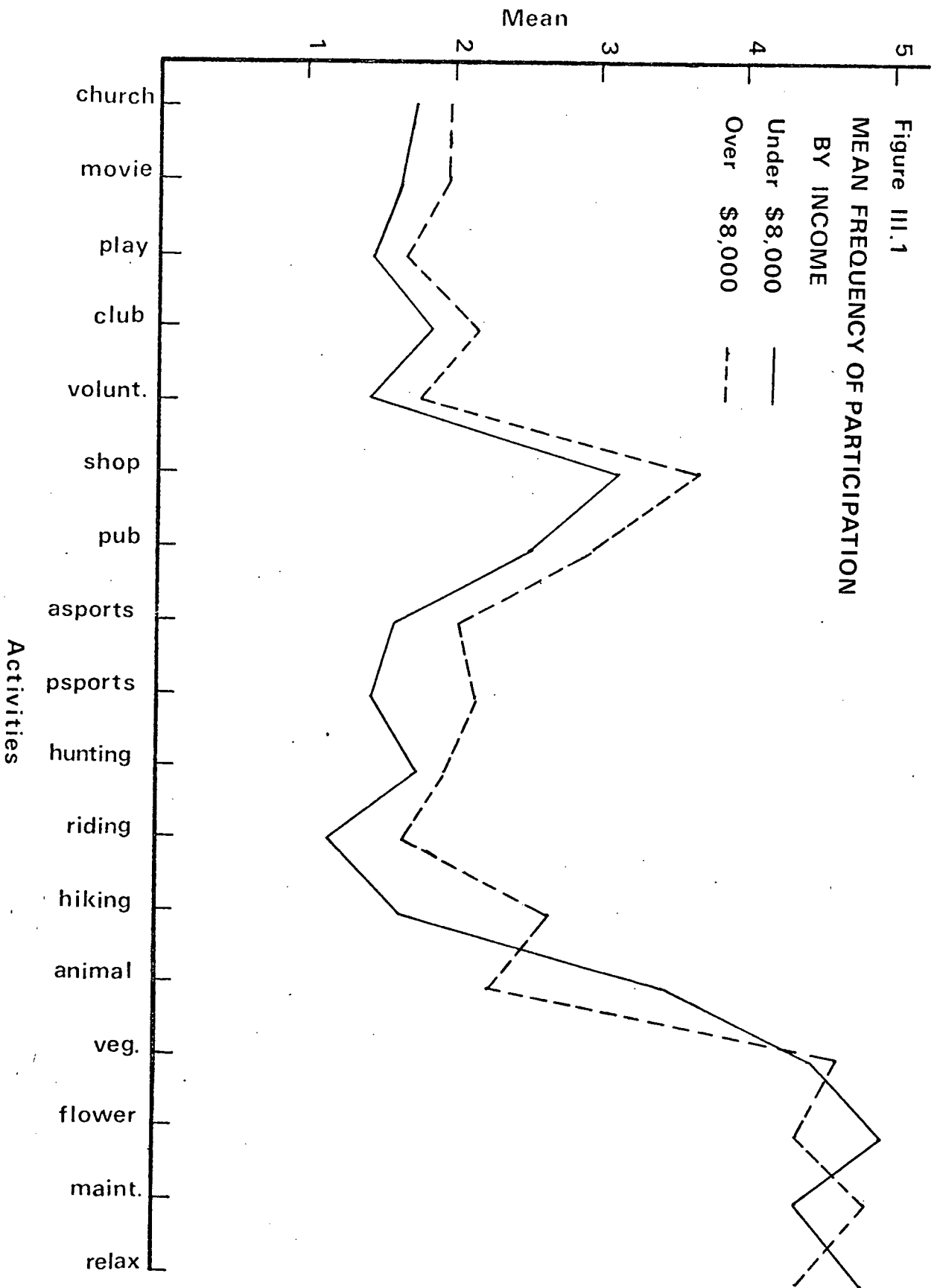
For several activities no difference between the two groups can be identified. These activities include working as a volunteer, participating in church related activities, going to plays, hunting or fishing and vegetable gardening.

Kaplan (1960) has suggested that class differences are becoming less important. Although, he indicates that income may restrict purchase of equipment or participation in activities which are expensive. Horseback riding is one activity which may be restricted by income, although;

TABLE III.10
MEAN FREQUENCY OF PARTICIPATION
BY INCOME

Activities	Income Group Means		Level of Significance
	Under \$8,000	Over \$8,000	
Church	1.8	2.0	
Movie	1.7	2.0	.05
Play	1.5	1.7	
Club	1.9	2.2	.10
Volunteer	1.5	1.8	
Shopping	3.2	3.7	.05
Pub	2.7	3.0	.10
Attending Sports	1.7	2.1	.05
Playing Sports	1.5	2.2	.05
Hunting	1.8	2.0	
Riding	1.2	1.7	.05
Hiking	1.7	2.7	
Caring for Animals	3.5	2.3	.05
Vegetable Gardening	4.5	4.7	
Flower Gardening	5.0	4.4	.05
Maintenance	4.4	4.9	.05
Relaxing Outdoors	4.9	4.4	.05

* Hotelling's T^2 statistic, F value 6.739, Level of Significance .001. Appendix C contains a Glossary of Terms which describes the Activities more fully.



it may also be a factor to a lesser extent in restricting participation in sports, attending movies and the frequency of shopping. This does not account for the lack of difference between the frequency that the two income groups attend plays or concerts, an activity which has in the past been associated with higher social class.

The results of this analysis indicate that it is insufficient to suggest the relationship between income and the frequency of participation is a simple one. It may be that what differences do exist can be attributed to variables which are related to income such as life cycle.

While the lack of significance of income in the frequency of vegetable gardening has already been demonstrated; the importance of income in the keeping of livestock, as well as gardening will be considered more closely for those who "do," as compared to those who "do not do" the activity.

Income-Supplementing and Income-Generating Activities

Again the results indicate that there is no significant relationship between participation in income-generating or income-supplementing activities and level of income. When a chi-square test of significance was calculated for each variable, only the keeping of horses proved to be significant (.01 level). Hypothesis 3, which suggested that

residents with lower incomes would participate proportionately more frequently in income-generating activities than residents with higher incomes, must therefore be rejected.

Only when the 'other' category of animals is considered, do the lower income groups participate proportionately more frequently. These animals included ducks, goats as well as bees, most of which can not be considered as income generating activities; although, some of them may be used as income supplementing activities, it would appear that they are in the majority of cases kept as pets. Thus, it is concluded that these activities are not done out of any necessity or need but as leisure or semi-leisure activities. However, the fact that the low income residents do not keep horses as frequently as the higher income residents, suggests that income may be a constraining factor, as horses are generally kept for purely recreational purposes and involve a considerable expense.

From these observations it would appear that we are justified in stating that people do not live in this fringe area because the fringe facilitates income-generating or income-supplementing activities; rather, it may be that these activities are valued as leisure time pursuits.

TABLE III.11
INCOME GENERATING ACTIVITIES BY INCOME

Income Level	Percent of Residents Who Keep/Have a					
	Horses	Cows	Chickens	Hogs	Other	Vegetable Garden
Less \$4,000	9.5	23.8	19.0	4.8	28.6	18.3
\$4,000 - \$7,999	6.7	16.7	26.7	6.7	6.7	26.8
\$8,000 - \$11,999	25.5	25.5	23.6	7.3	1.8	45.0
\$12,000 - \$15,999	30.0	20.0	36.7	6.7	3.3	15.5
Over \$16,000	14.3	26.6	28.6	-	-	8.5
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

*Horses by Income is significant at the .01 level.

Life Cycle

Hypothesis 4 tests the assumption that older persons may not participate as frequently in physically demanding activities.

In order to test the validity of this assumption a discriminant analysis was performed.⁴ The two groups were composed of those under 65 and those above 65; the frequency of participation in the seventeen activity variables was used as the discriminating variable set. If, the hypothesis is to be verified it would be expected that the variables which are indicated as significant discriminators would involve physical exertion. This was not the case. The variables which were chosen were shopping (significance level .005), going to the movies (significance level .02), and riding (significance level .04).

The importance of these variables is indicated by the fact that in each case if we assumed that the means of the groups were different on that variable, we would be wrong less than 1 percent of the time. Another test of the validity of the discriminant function is the degree to which the cases can be correctly reclassified into the appropriate groups. Using a Cooley and Lohnes classification we can correctly reclassify 86.84 percent of the cases.

Since the variables which are correlated to those which are chosen decline in importance after each step

of the analysis;³ it is important that they be considered, as well as those which are chosen. Variables which were significant in the first step were playing sports, and caring for animals. In the second step attending sports events was correlated with going to the movies.

The results of this analysis suggest that we would not be justified in accepting the hypothesis as it was stated, since the discriminating variables cannot be considered to be physically demanding with the possible exception of riding. The fact that hiking, gardenings and playing sports were not selected as discriminating variables, indicates that another explanation must be sought for the variation which exists.

The means of each activity were compared for each group and Z statistics were calculated to indicate on which activities the groups differed significantly. In addition to the activities chosen in the step-wise discriminant analysis, and the activities which it was noted were related to those activities, attending sports events and maintenance were found to be significantly different at the .05 level.

While physical exertion may be important in riding and playing sports, this does not account for the differences in passive spectator activities. As Chart III.2 indicates the older life cycle group has a lower mean participation rate except for church attendance, vegetable gardening and flower gardening. Their lower participation in urban

related activities may be explained by their desire to do activities in and around the home or it may be that they are constrained from participating in other activities by the difficulty of getting to the activity. It may also be that their lower income restricts them from participating as frequently in activities such as shopping, attending sports events and movies.

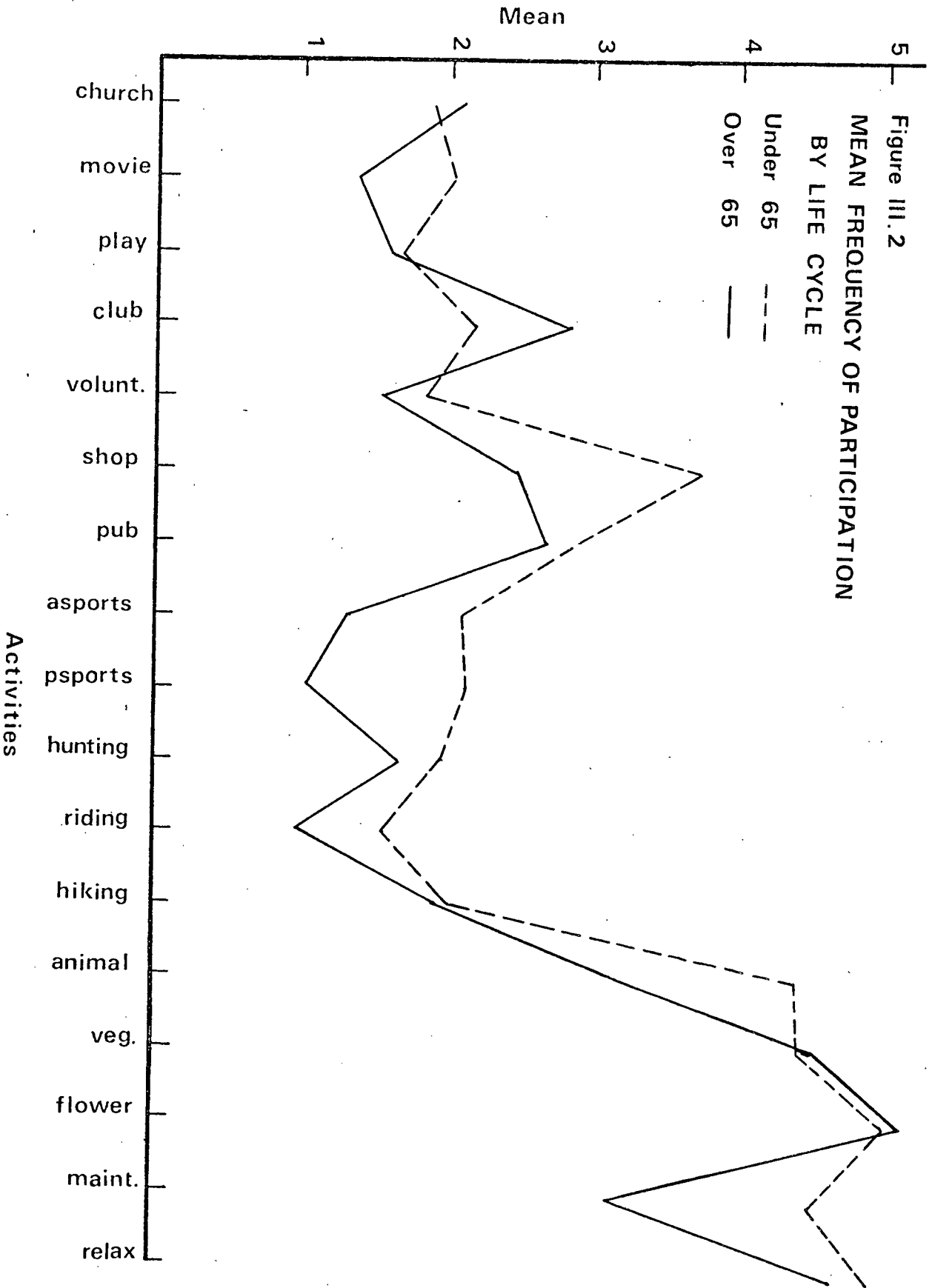
Residential Experience

Having considered the effects of variables of income and age separately; and having identified age and occupation as variables which distinguish between the groups based on residential experience, we will now consider the results of testing Hypothesis 5. This hypothesis stated that there will be no difference in the frequency of participation in activities which are related to the environment between long-term rural residents and new urban residents. It will be remembered that literature was cited which suggested that this would not be the case; however, it was proposed that residents from urban areas would choose to live in the area because they were interested in pursuing activities related to the environment and they would therefore participate as frequently as the indigenous residents.

The first method used to test this hypothesis was discriminant analysis. In order to be able to accept the

TABLE III.12
MEAN FREQUENCY OF PARTICIPATION
BY LIFE CYCLE

Activities	Life Cycle Group Means		Level of Significance
	Under 65	Over 65	
Church	1.99	2.13	
Movie	2.05	1.40	.05
Play	1.70	1.60	
Club	2.27	1.85	
Volunteer	1.87	1.57	
Shopping	3.77	2.53	.05
Pub	2.96	2.73	
Attending Sports	2.11	1.33	.05
Playing Sports	2.16	1.07	.05
Hunting	2.03	1.71	
Riding	1.60	1.00	.05
Hiking	2.16	1.92	
Caring for Animals	4.45	3.18	.05
Vegetable Gardening	4.47	4.60	
Flower Gardening	5.09	5.18	
Maintenance	4.58	3.81	.05
Relaxing Outdoors	5.00	4.73	



hypothesis, the results should indicate that none of the activities which are environment related should discriminate between the groups. Four groups were used in the analysis; old rural and urban and new rural and urban.

Only one variable was designated as a significant discriminator between the groups, that variable was relaxing (significance level of .025). The F probability matrix for this variable indicates that there is a .2 percent chance of being wrong if we assumed that the means of the old rural and new urban groups were different on the variable relaxing, this probability was only slightly higher when the F probability for the old rural residents is compared to the other two groups. The probability that we would make an incorrect assumption if we assumed that the mean for the old urban group differed from that of the new urban group increased to 21 percent, and this increased even higher when the other groups are compared. This suggests the dictonomous nature of the relationship which exists between the old rural group and the new urban group, with the old urban group being closer to the new residents. The results indicated that all three groups had a higher mean frequency of participation for relaxing out-of-doors than did the old rural residents. The ability to reclassify the cases into groups was quite low, only 51.39 percent, suggesting the low reliability of this variable as a discriminator. Unlike the previous analysis no other

variables were correlated with relaxing.

These results indicate that we are correct in assuming that there is little difference in the urban newcomers from the long-term rural residents participation in environment related activities, with the exception of relaxing in which they participate more frequently.

In order to be able to consider the differences between the groups in more detail, the mean frequencies of participation for each activity were compared for the two groups, old rural and new urban and the level of significance of their differences compared.

When z statistics were calculated for each of the variables, several more were shown to be significant as compared to the discriminant analysis. This is because in the former case we were considering only the two most important groups; and also each variable is tested individually so that the degree to which they are related to the other variables is not considered.

The findings in the literature suggested that the new urban residents would participate more frequently in urban related activities. Although, the urban newcomers have higher mean participation rates in attending movies, shopping and playing sports, the new rural residents had a higher mean frequency of participation than the new urban residents in attending movies. With regard to shopping

the old urban residents continued to maintain a mean frequency rate as high as the new urban residents.

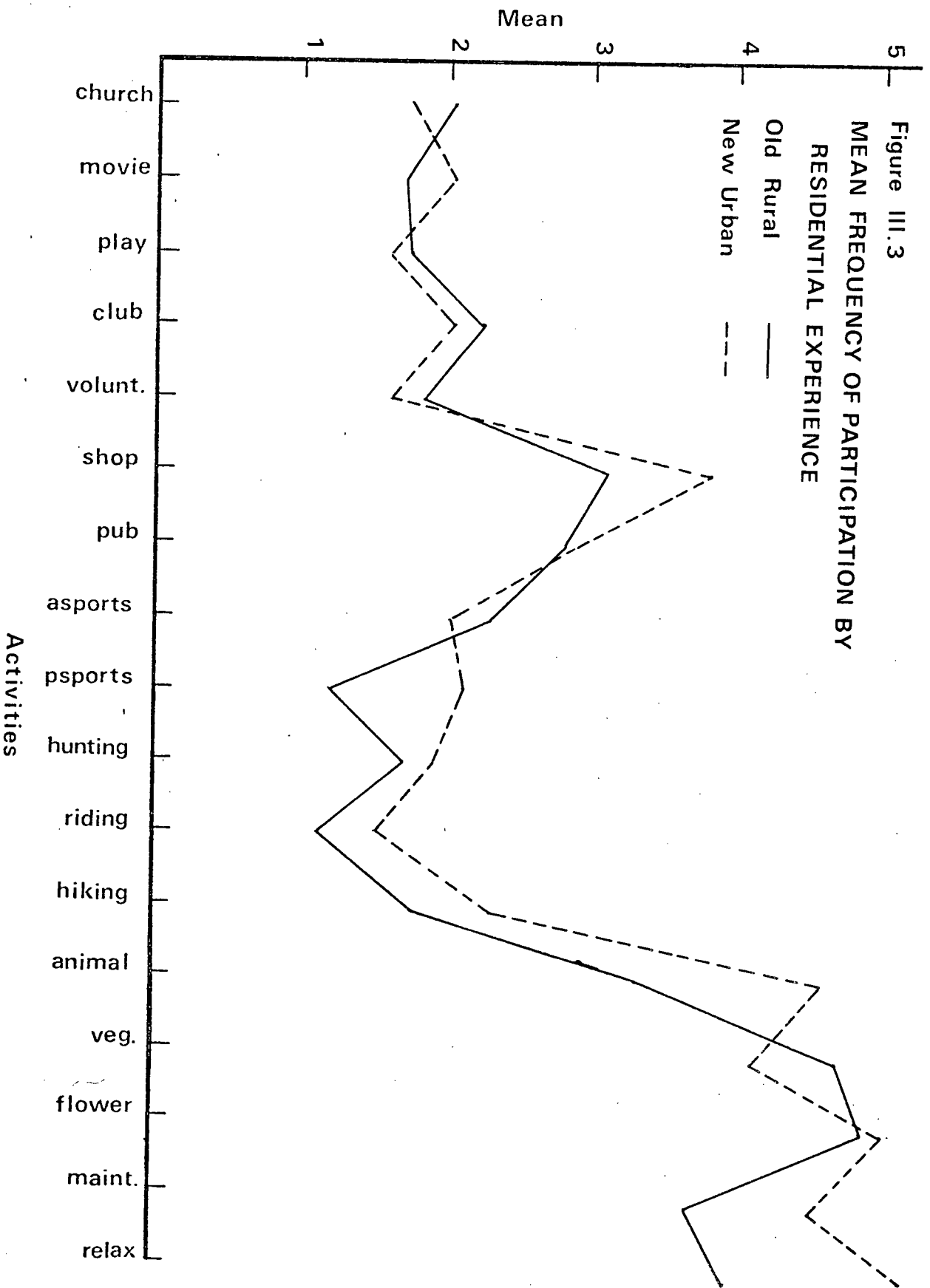
With regard to participation in clubs and organizations and volunteer work, activities which would be done in urban areas, the old rural residents had a slightly higher mean participation rate than did the urban newcomers. This is consistent with Durrani's findings (1969, p. 82) that long-term rural residents participated more frequently in organizational activities.

Where there are significant differences in the participation in urban-related activities the activities were those which also discriminated between age groups. Since we have already demonstrated that the urban newcomers differed in age significantly from the long-term residents, this may partially explain the differences noted here.

The urban residents participate more frequently in all the rural and area oriented activities except gardening; although, not all the differences were shown to be significant. This supports our hypothesis that the urban residents chose to live in the fringe areas to participate in activities which are related to the environment.

TABLE III.13
MEAN FREQUENCY OF PARTICIPATION BY
RESIDENTIAL EXPERIENCE

Activities	Residential Experience Group Means		Level of Significance
	Old Rural	New Urban	
Church	2.07	1.77	
Movie	1.71	2.09	.1
Play	1.78	1.61	
Club	2.28	2.14	
Volunteer	1.84	1.61	
Shopping	3.14	3.87	.05
Pub	2.85	2.98	
Attending Sports	2.35	2.03	
Playing Sports	1.21	2.22	.05
Hunting	1.71	1.97	
Riding	1.14	1.52	
Hiking	1.80	2.35	.10
Caring for Animals	3.35	4.64	.05
Vegetable Gardening	4.73	4.27	
Flower Gardening	4.92	5.15	
Maintenance	3.71	4.61	.05
Relaxing Outdoors	4.00	5.25	.05



Summary

In this chapter the sample population was described by their socio-economic characteristics, life cycle and residential experience, and then five hypotheses were tested which considered the relationship between these characteristics and between them and the frequency of participation in the activities.

In most cases the analysis included either a Hotellings T^2 test or discriminant analysis to indicate the validity of the difference between groups measured on the same set of variables, and a number of Z statistic's to measure the individual differences between the various activities.

The results indicated that there are significant differences between the new urban residents and the long-term residents based on age and occupation. The new urban residents were substantially younger and in a higher occupational category, than the long-term residents. Income was found to be the only socio-economic variable significantly related to frequency of participation in activities. Those whose income was over \$8,000 incomes had a higher mean frequency of participation than those under \$8,000.

Age was found to be significantly related to attending movies, shopping, playing sports and attending sports events, caring for animals and maintenance. These activities can not generally be described as physically demanding or

urban or rural related activities.

Finally, it was shown that although, there are differences between the activities which long-term residents and urban newcomers participate in newcomers participate as frequently or more frequently in rural related activities as do the other groups. The differences which did exist included all the activities that the over 65 age participated less frequently in as well as relaxing. In those activities the urban newcomers participated more frequently suggesting that the differences which were observed could be attributed to differences in age rather than residential experience.

FOOTNOTES

CHAPTER 2

¹Differences will be considered significant if there is a 95 percent or greater chance that we will be correct in assuming that they actually occur. This level of significance will be used through out this analysis except where it is noted otherwise.

²HOTEL Routine, by Jason Halm, in UBC TRIP by James H. Bjerring and Paul Seagraves, February 1972.

³Z statistics were used to test the significance between the means of the activity variables. The standard deviation of the largest group was used as an estimator of the population standard deviation. Because the largest group was very close to the population in size, this was not felt to introduce any significant error into the test. Two-tailed tests of significance were preformed in each case. (Blalock, 1960)

⁴Hotelling's T^2 statistic could not be computed for these two groups because of the difference in their size. Therefore the discriminant analysis program UBC BMD07M, Implemented from the UCLA BMD Package by Paul Seagram, October 1970 was used. This program performs multiple discriminant analysis in a step wise manner. At each step, one variable usually the one with the highest level of significance is entered into the set of discriminating variables. If none of the variables are significant, none will be entered.

CHAPTER 4

ACTIVITIES - ENVIRONMENT - SATISFACTION

This chapter is divided into three major parts; in each a general group of relationships is considered. In the first part, assumptions which have been made with regard to the relationships between the activities will be considered; in addition the degree of correlation which exists between the interest and participation will be explored. In the second, the hypotheses concerning distinctive characteristics of the physical environment will be examined with regards to the activities they facilitate. In the last part, the relationships between performing activities which are facilitated or constrained by the environment and the residents' satisfaction with that environment will be considered.

Activities

In the previous chapter it was shown that the hypothesis which stated that urban residents participate in activities which are done in the fringe as frequently or more frequently than long-term residents was valid. In the discussion of the reasons why this is so it was

suggested that people may choose to locate in an area because they have an interest in participating in activities which are facilitated by the environment. This explanation is based on the assumption that activities can be categorized to reflect differing degrees of congruence with the environment; and that there is some pattern to the activities people participate in based on this categorization. We will therefore examine the degree to which the activities that a resident participates in can be classified into groups, and the extent to which these groups are based on a similar degree of congruence with the environment.

The second assumption which we have made is that interest in performing activities is correlated with actual performance of those activities. It is to be expected that the correlation between activities which are not environment related will be lower than those which are facilitated by the environment. This assumption will be tested in the second section of this part.

Factor Analysis - Participation in Activities

A factor analysis was performed to test the first assumption. For this assumption to be proven correct, the results of the factor analysis should yield several factors which can be described as urban or rural related. The degree to which the factors account for the common variance among the activity variables will indicate the

ability of the factors to explain the degree to which the activities in which residents participate, vary in a like manner.

The factor analysis technique used to describe the factors was classical factor analysis, with an oblique rotation of the reference axis.¹

As was to be expected the correlation between the activity variables was very low. The only variables which were correlated over .4 were attending plays with attending clubs, both urban related activities; and flower gardening with vegetable gardening. When three factors were defined they accounted for only 23 percent of the total variance among the variables. While this is very low compared to other studies it is consistent with studies of leisure behaviour. Goodale's (1965) results indicated that 70 percent of the variance of the leisure activities between residents of twelve census tracts was unique. Visiting, riding, and caring for animals are activities whose variance is particularly unrelated to the factor pattern. This suggests that regardless of the orientation of their other activities residents engage or do not engage in these activities. Whereas, flower and vegetable gardening, are strongly related to the factor pattern.

The matrix of rotated factor loadings easily describes distinct clusters of variables so that the factors can be named.

TABLE IV.1
 ROTATED FACTOR LOADINGS FOR PARTICIPATION
 IN ACTIVITIES

Activities	Factor 1 Site	Factor 2 Area	Factor 3 Urban
Flower gardening	<u>.87</u>	-.09	.08
Vegetable gardening	<u>.65</u>	-.14	.13
Maintenance	<u>.34</u>	.26	-.13
Riding	.09	.09	.05
Visiting	.07	.17	-.05
Hunting	.02	<u>.32</u>	.03
Movies	-.17	<u>.35</u>	.15
Shopping	-.06	<u>.37</u>	.17
Relaxing	.25	<u>.39</u>	-.08
Pub	-.17	<u>.47</u>	-.02
Hiking	.03	<u>.49</u>	.02
Caring for Animals	.13	.11	.20
Church	.07	.20	<u>.34</u>
Plays	-.11	-.01	<u>.37</u>
Asports	.05	.25	<u>.38</u>
Club	.00	.00	<u>.48</u>
Volunteering	.10	.03	<u>.54</u>
COMMON VARIANCE	.36	.30	.32

The first factor--"rural site-related activities" loads strongly on vegetable and flower gardening and maintenance and positively on all the other rural-related activities, but negatively on the urban-related activities of attending plays, movies, shopping, and going to pubs or restaurants. The third factor listed can be labelled--"urban-related activities" since it loads heavily on attending club meetings, volunteering, playing sports, and attending plays. The second factor is somewhat more difficult to interpret in the light of our hypothesis because of the high loadings on going to pubs or restaurants, hiking and to a lesser extent relaxing, hunting, going to the movies and shopping. When the location of these activities is examined they are characterized by being less centralized than either the rural site activities, or the urban activities which are generally done in either Haney or Vancouver. Activities loading highly on factor two were quite often done in the "elsewhere" location category. Therefore, factor two will be named "area-related activities."

Summarizing, the results of this analysis indicates that we are generally justified in grouping activities by their congruence with the environment as measured by the location in which the activities are performed. This pattern accounts for the small degree of common congruence existing between the activities which were included in the analysis.²

Interest in and Performance of Activities

The second relationship considered in this section is the degree of association between the residents expressed interest in an activity and the frequency with which the activity was performed. A simple correlation was performed between these two variables.

TABLE IV.2
CORRELATION BETWEEN INTEREST IN AND PERFORMANCE
OF EACH ACTIVITY

Activity	Correlation Coefficient
Church	.511
Movie	.357
Play	.294
Club	.555
Volunteer	.517
Shopping	.097
Pub	.045
Attending Sports	.464
Playing Sports	.719
Hunting	.454
Riding	.585
Hiking	.550
Caring for Animals	.566
Vegetable Gardening	.479
Flower Gardening	.241
Maintenance	.340
Relaxing Outdoors	.284

The activity with the highest positive correlation is playing sports, indicating that those who engage frequently in sports, are interested in the activity and those who are interested in the activity are not constrained from participating in it. This is also true, although, to a lesser extent for hiking, attending club meetings, working as a volunteer, hunting, riding, hiking and caring for animals. There appears to be no systematic difference between activities which are done in urban areas and those done in rural areas, nor is the assumption supported that distance may act in constraining performance of activities.

The activities which have fairly high correlations are those which require a certain degree of physical effort and/or investment of money as well as an undefinable (as compared to movies) amount of time. Activities which are done on the site are performed by a much greater percentage of the sample population, (see Appendix D) than are the other activities. There is therefore, a lower degree of correlation between interests and frequency for these activities.

Activities such as attending movies and plays may be examples of activities which although they are well liked by those that do them are done infrequently because of the constraints of availability; although, both of these activities are available in Haney, the plays are

infrequent and the choice of movies extremely limited. Thus for these activities distance may be a factor. The fairly high degree of correlation in vegetable gardening and caring for animals indicates the importance of these activities compared to the other site-related activities; since although, these activities are performed frequently by a high proportion of the residents, a relatively high degree of interest is also expressed in these activities.

Generally, the correlations are much lower than expected. For both shopping and pubing the relationships are not even significant, suggesting that these activities may not have been responded to as leisure activities.

Since the correlation between interest and frequency of performance of activities is generally higher or as high for the urban-related activities of church related activities, attending clubs, volunteering and playing sports as for the rural-related activities; the former cannot be considered to be constrained by the environment as it was thought that they might be. Since the correlations are so low, a more rigorous examination of the constraints which do exist must be made before any conclusions could be drawn with regards to the extent to which accessibility is a constraining factor.

The Physical Environment of the Fringe

In considering the physical environment of the fringe, the two most obvious differences between this area and a more urban one is the lot size and the distance between neighbours. In this sample, the mean lot size is 4.39 acres. Just under a third of the sample population indicated that they were beyond shouting distance from their neighbours.

Lot Size

The purpose of this section is to determine to what extent increasing the lot size facilitates activities which are related to it. The hypothesis tested states that larger lots will be positively associated with the keeping of animals and vegetable gardening.

The extent of this relationship is illustrated by Table IV.3 which indicates the lot size of those who indicated that they kept particular animals or had a vegetable garden. The hypothesis is verified for both horses and cows; the larger animals are significantly associated with larger lots (at the .01 level). However, there is no significant linear relationship between either keeping smaller animals or vegetable gardening and lot size.

TABLE IV.3
SITE RELATED ACTIVITIES BY LOT SIZE

Lot Size Acres	Percent of Residents Who Keep/Have					
	Horses	Cows	Chickens	Hogs	Other	Vegetable Garden
Less than 1.9	2.0	10.2	14.3	2.0	12.2	31.4
2 to 4.9	27.3	21.8	25.5	5.5	5.5	38.6
5 to 9.9	24.1	40.3	41.4	17.5	6.9	17.7
More than 10	31.6	21.1	31.6	5.3	-	12.9
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

* Relationship between Lot Size and Horses and Cows is significant at the .01 level.

Lots 5 to 9.9 acres in size have the largest percentage of cows, chickens and hogs while vegetable gardening is most frequently done on lots less than 5 acres.

The preference for lot size shows that lots of 2 to 5 acres are preferred, although, preference no doubt varies with the activities which are performed. Over 40 percent of the persons with lots 2 to 5 acres indicated that they were too small.

TABLE IV.4
LOT SIZE BY LOT PREFERENCE

Lot Size Acres	Lot Preference		
	Too Small	Just Right	Too Large
Less than 2	37.5	35.2	12.5
2 to 4.9	40.6	37.5	25.0
5 to 9.9	21.9	18.2	20.8
More than 10	-	9.1	41.7
TOTAL	100.0	100.0	100.0

* Significant .001 level.

Distance to Neighbours

The second attribute of the fringe which will be considered is the distance to neighbours. A hypothesis was proposed to test the relationship between visiting and the distance to neighbours. If distance was in fact a constraint we would expect to find that those located further from their neighbours visited them less frequently.

The measure of distance, used was whether or not their closest neighbour was within calling distance.

TABLE IV.5

VISITING BY DISTANCE TO NEIGHBOURS

Frequency of Visiting	Distance to Neighbours	
	Within Calling Distance	Not Within Calling Distance
At Least Once a Week	28.6	27.5
2 to 3 Times a Month	20.4	19.6
Once a Month	22.4	11.8
Less Often or Never	28.6	41.2
TOTAL	100.0	100.0

The results of testing this hypothesis indicates that there is no significant relationship between the frequency

of visiting and the distance to neighbours, and therefore the hypothesis is rejected.

However, it should be noted that the distance to the neighbours is important for those who visit once a month or less often. Where the neighbours are not within calling distance a significantly (.01 level) higher percentage visit less often or never than those who are within calling distance. Thus it can be seen that for those who have little interest in visiting their neighbours distance will be a constraining factor. Thus it is a positive factor facilitating privacy. It may however also be that those who are not interested in visiting their neighbours have located further from them recognizing the constraining effect of distance.

Satisfaction with the Fringe Environment

The question to be considered in this final part is "To what extent does participation in activities which are facilitated or constrained by the environment influence the residents' satisfaction with the environment?"

Hypothesis 9 and 10 suggest that it will be possible to discriminate between those residents who prefer an urban or rural residential environment by the activities in which they participate. These two hypotheses will also be tested using the degree of interest which residents

expressed in the activities, as the discriminating set of variables.

The extent to which participation in various activities is correlated with the residents' satisfaction with particular elements of the environment will also be examined.

Participation in Activities

In order to test hypothesis 9 and 10 a discriminant analysis was done between the three residential preference groups, urban, rural and those who preferred to stay where they were. According to the hypotheses, urban-related activities should discriminate between the urban preference group and others; and similarly, rural-related activities should discriminate between the rural preference group and the others.

The results of this analysis were inconclusive. The two variables which were chosen as discriminators were volunteering (significance level of .0035) and attending clubs (significance level of .0480). The F probability matrix suggests that we will be wrong less than 1.5 percent of the time if we assume that the rural and stay groups and urban and stay groups were different on activity volunteering. However, this probability increases to 88 percent if we assume that the urban and rural groups are

different on this activity. The variable attending clubs distinguishes between the groups in a similar manner. The fact that the urban and rural groups are the most similar groups is not at all consistent with the hypotheses which were proposed. It should be noted that the analysis accounts for only 11 percent of the total variation among the variables. This is evident from the ability of these variables to be used to reclassify the cases; although, 73.8 percent of the cases were correctly reclassified; none of the urban and less than a third of the rural cases were correctly reclassified.

If it can be shown that the differences which were hypothesized do exist, then the results of this analysis simply suggest that the residents who engaged in urban related activities do not anticipate being constrained by the increased distances between their preferred location further from town, and the urban location in which these activities occur. This has further implications regarding our assumption that persons engaged in urban-related activities would prefer a urban location. Simply not being interested in rural-related activities may be the more important variable.

In view of these results we shall consider the differences of means between the urban and stay group, and between the rural and stay group.

Although, the urban preference groups means are higher on most of the urban activities than the other groups, most of the differences were not shown to be significant. The only urban activities in which there is a significant difference are attending movies, and volunteering. With regard to the rural versus stay groups, there is a significant difference on shopping, attending movies, volunteering, and hiking, caring for animals and vegetable gardening; activities in which the rural group means are significantly higher.

These results do suggest that there is evidence that the rural preference group do participate more in rural-related activities than the stay group, and that the urban preference group do participate more than the stay group in urban related activities and less in rural related activities. It may be that the degree of interest in activities will be a better predictor of this relationship.

Interests in Activities

The results are more comprehensive, when interest in activities is used as the discriminating variable set. Four discriminating variables were indicated to be significant.

TABLE IV.6

MEAN FREQUENCY OF PARTICIPATION BY RESIDENTIAL PREFERENCE

Activities	Residential Preference Groups				
	Urban Means	Level of Significance Urban-Stay	Stay Means	Level of Significance Rural-Stay	Rural Means
Church	1.93		2.00		2.04
Movie	2.26	.1	1.91	.05	2.18
Play	1.64		1.66		1.90
Club	2.35		2.26	.05	1.95
Volunteer	2.50	.05	1.63	.05	2.45
Shopping	3.36		3.49	.05	4.27
Pub	2.86		2.98		2.77
Attending Sports	1.78		2.04		2.14
Playing Sports	2.42		1.93		2.47
Hunting	1.50		2.00	.05	2.38
Riding	1.35		1.59	.05	1.47
Hiking	2.28		2.00	.05	2.73
Caring for Animals	3.93		4.20	.05	5.25
Vegetable Gardening	4.06		4.38	.05	5.27
Flower Gardening	4.66		5.11		5.33
Maintenance	3.80	.05	4.65		4.22
Relaxing Outdoors	4.86		4.92		5.26

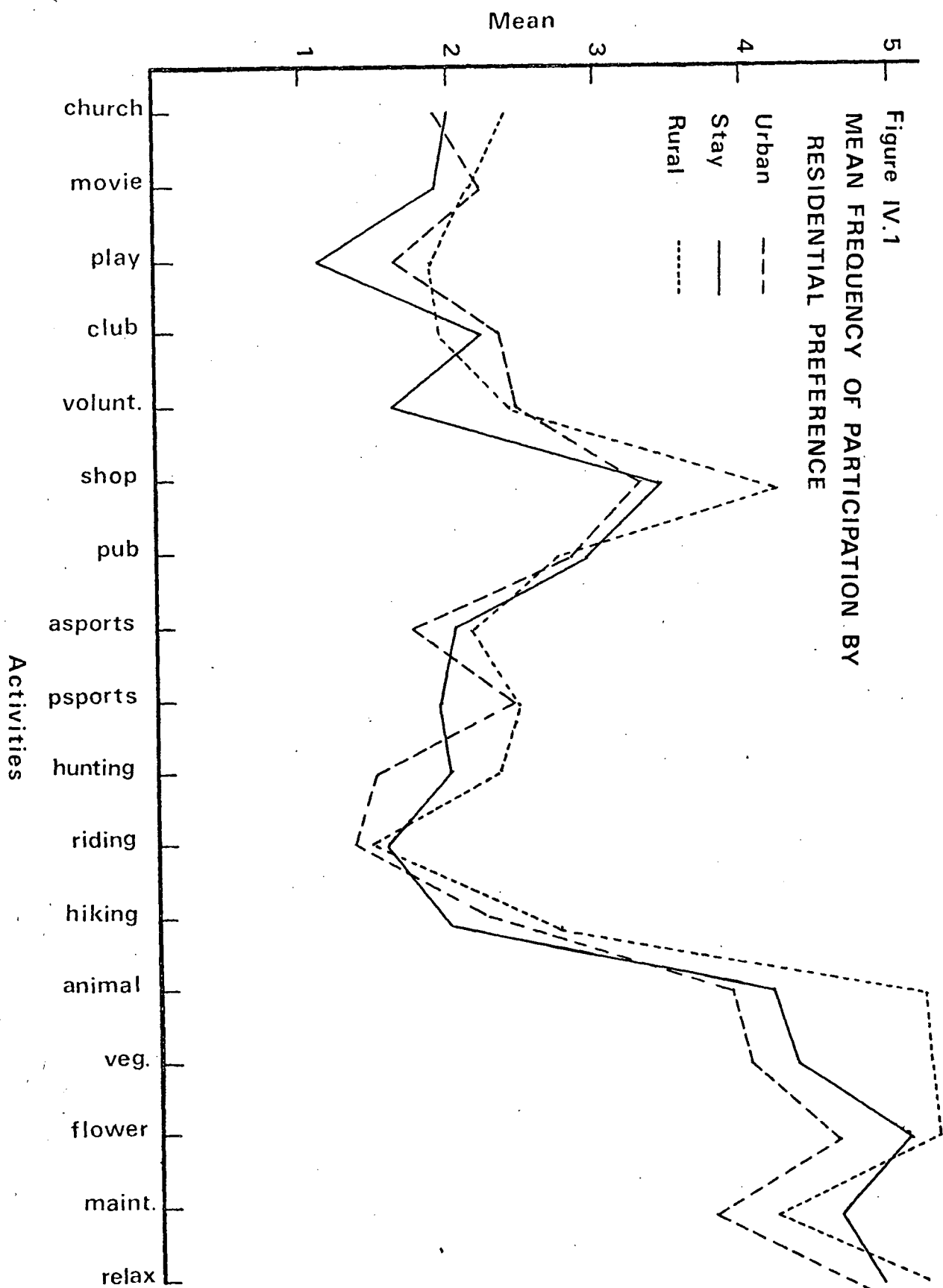


TABLE IV.7
DISCRIMINATING VARIABLES

Variables	F-Value	Significance Level
Riding	17.24	.0000
Play	6.99	.0014
Playing Sports	5.31	.0061
Flower Gardening	9.00	.0003

For each of these variables the F probability matrix indicates that we would be right 100 percent of the time, if we assumed that the urban and rural groups were different on the variable and wrong less than 1 percent of the time if we assumed that the urban group differed from the stay group or the rural group differed from the stay group. Using a Cooley and Lohnes classification of the cases, 76.47 percent of the cases were correctly classified; although, none of the residents preferring an urban location were correctly classified.

For the first variable riding, the pattern is consistent with the hypothesis, the rural group has a higher mean interest in riding than the stay group or the urban group. This pattern is maintained for the other variables. Thus none of the variables chosen as discriminators

indicate a significant difference between the urban and stay groups.

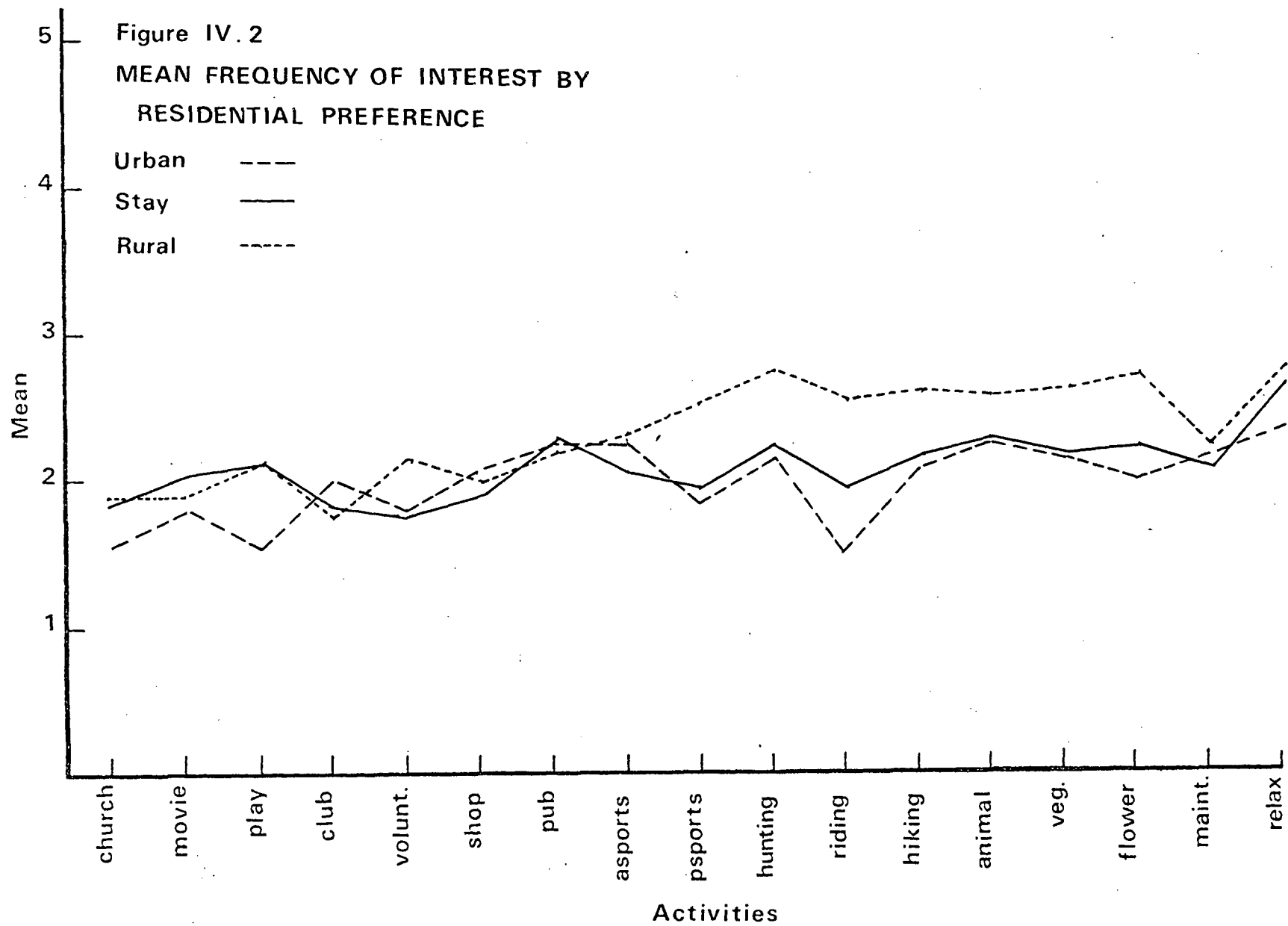
If the means are examined individually, the variables which are significantly different between the urban and stay groups are interest in plays and movies with the stay group having higher means and riding in which the urban group is lower. If the general tendency of the differences is examined it can be seen that the urban preference group have higher mean interests in clubs, volunteering, shopping and watching sports and means lower than the stay group in all the rural-related activities but maintenance. While this tendency does not permit us to accept the hypothesis it does suggest that a more detailed examination of these relationships might prove them to be significant.

An examination of the differences of the means of the rural and stay group on interests in activities supports our hypothesis. For all the activities which are rural-related except maintenance and relaxing the rural preference group has significantly higher means. It should be noted that except on pubing and attending movies the rural group has a higher mean score in all the other activities; but it is their interest in the rural-related activities which is the most significant and which in fact is related to their residential preference.

TABLE IV.8

MEAN FREQUENCY OF INTEREST IN ACTIVITIES BY RESIDENTIAL PREFERENCE

Activities	Residential Preference Groups				
	Urban Means	Level of Significance Urban-Stay	Stay Means	Level of Significance Rural-Stay	Rural Means
Church	1.58		1.88		1.90
Movie	1.83	.05	2.07	.05	1.90
Play	1.54	.05	2.16		2.16
Club	2.00		1.89		1.76
Volunteer	1.80		1.78	.05	2.14
Shopping	2.07		1.92		2.00
Pub	2.23		2.25		2.20
Attending					
Sports	2.25		2.02	.05	2.30
Playing					
Sports	1.87		1.94	.05	2.54
Hunting	2.18		2.23	.05	2.73
Riding	1.50	.05	1.98	.05	2.54
Hiking	2.08		2.20	.05	2.60
Caring for					
Animals	2.27		2.29	.05	2.57
Vegetable					
Gardening	2.15		2.17	.05	2.63
Flower					
Gardening	2.00		2.24	.05	2.72
Maintenance	2.13		2.08		2.19
Relaxing					
Outdoors	2.38		2.66		2.77



The results of this analysis suggest that for those who have the strongest interest in rural-related activities the fringe area of Maple Ridge is not facilitating those activities to the extent which they would like it and therefore, they would prefer a more rural environment. This is emphasized by the relationship between preferred lot size and preferred residential location. The relationship which was significant at the .05 level indicated that a greater proportion of those preferring an urban location thought their lots were too large, whereas a greater proportion of those preferring a rural location thought that their lots were too small.

Satisfaction with Specific Attributes of the Environment

In this section, we consider whether satisfaction with specific elements of the environment can be related to the activities in which the residents participate. In order to do this factor scores were obtained from a factor analysis of the interest which residents had in performing the activities.³ These factor scores enable us to identify how each person measured on a reduced number of factors (in this case five factors were used). These factor scores were then correlated with the twelve variables on which measures of satisfaction were obtained.

Most of the correlations which resulted from this analysis were very low and not significant. However, the several highest correlations deserve some comment.

The fifth factor which loaded highest on church attendance and negatively on shopping was correlated to a slight extent (the correlation coefficient was .28) with the desire to live further from their neighbours. This corresponds to the previous observation that residents who had the highest mean score on interest in church attendance were those who preferred a rural location while those having the highest mean on shopping preferred an urban location.

Interest in riding and other activities related to the rural area versus low interest in clubs was correlated (correlation coefficient of .13) to satisfaction with neighbours to a small extent.

Finally, the factor which described a low interest in club membership and a positive interest in caring for animals was correlated with satisfaction with schools and services (correlation coefficients of .119 and .117 respectively). Again these correlations are very low but suggest that there is a certain degree of relationship between satisfaction and participation, in the direction which was hypothesized.

The variables of satisfaction which had the highest correlations were cross tabulated by the residential

preference variables. The results of this analysis indicated that those who were satisfied with the open space were the urban and stay groups, while those who were dissatisfied with the amount of open space to the greatest extent were those who preferred a rural location (significant at the .02 level). Dissatisfaction with neighbours was shown to be related to a preference for an urban location (at the .02 level of significance). One characteristic of the environment which it was thought would be related to activities was satisfaction with services; however, no significant relationship was found. There was however a tendency for those preferring a urban location to be the most dissatisfied with the services provided while those preferring a rural location were the most satisfied.

Thus while these results are not conclusive they do suggest that a relationship between interest in activities facilitated by the environment and satisfaction with the environment does exist for some of the variables; especially for satisfaction with neighbours and the amount of open space that is available.

Summary

Three areas of relationships were considered in this chapter, and the assumptions and specific hypotheses which were formulated regarding each were analysed. Each will be considered in turn in this summary.

Activities

A factor analysis of the seventeen activity variables for which frequency measures were obtained resulted in three factors which described the activity groupings which it had been assumed would exist, based on the degree to which the activities were related to the rural site, the area including both urban and rural activities or the urban environment.

Secondly, a correlation between the respondents' interest in and frequency of participation in the activities was obtained. The correlation coefficients which resulted from this analysis indicated the relatively low correlation which existed between these two measures, as well as suggesting that no one reason could be used to explain this result. Accessibility was not shown to be a constraining factor at least for those activities which were available in the nearest urban area. Activities for which the correlation were the highest were those activities in which few residents participated or those activities facilitated by the rural environment; caring for animals and vegetable gardening.

Physical Environment

In this section, the size of lot and distance to neighbours was examined for their relationship with the activities which they facilitated. In the case of the first, large lots, over 10 acres was significantly related to the keeping of horses; whereas lots from five to ten acres were more often associated with cows, the keeping of chickens and hogs. Gardening and the keeping of other animals was associated with smaller lots. Increased distance to neighbours did not constrain visiting as it was hypothesized it would; however, it was associated with a larger proportion of persons who indicated they rarely or never visited their neighbours.

Satisfaction

Discriminant analysis and Z statistics were used to examine the relationship between satisfaction with the environment, as expressed by residential preference and participation and interest in activities.

The results of this analysis were inconclusive; although, the urban preference group participated in or were interested in urban related activities to a greater extent than the group who preferred to stay where they were. As far as the rural preference group was concerned the hypothesis was however verified.

A correlation of the factors describing interests in various activities with satisfaction variables did not indicate any strong relationships, although several correlations were described which fit the pattern which had been observed previously, between residential preference and participation in certain activities.

FOOTNOTES

CHAPTER 4

¹UBC FAN Factor Analysis by Jason Halm, October 1971. This program provides for the use of either principal components factor analysis or classical factor analysis. The difference between the two models is that in the second we are replacing the 1's in the diagonal of the correlation matrix by estimates of the communalities. The implication of doing this is that we are recognizing the fact that there is unique variance of the variables not involved with any other variables, and therefore we are analysing only the portion of the variance which each variable has in common with the other variables. This seems to be the most logical and realistic method to use in this analysis when our purpose is to describe the variance which exists among the variables.

In order to achieve simple structure and the clearest picture of the patterns, an oblique rotation of the reference axis with a gamma value of .5 was preformed. This type of rotation yields the best definition of correlated and un-correlated factors necessary to delineate clusters of variables.

²An important limitation of this data is that a full range of the leisure activities in which an individual might participate was not included in the analysis. As Van de Geer (1971, p. 145) states -

" . . . if we add more observed variables; portions of what is now called error might then appear to be tied to common factors that at first remained hidden because the data was too restrictive to reveal their role. . . ."

³In order to obtain factor scores which would give the best explanation of the variance between the variables common factor analysis was used. This resulted in five factors which accounted for 56 percent of the total variance.

CHAPTER 5

SUMMARY AND CONCLUSIONS

In conclusion, the general implications of the observations made in the preceding chapters will be summarized. In considering the directions for future study in this area, the limitations and difficulties of this study will be examined. And, finally, the planning implications of the results of this study will be presented.

General Implications

The results of testing the ten hypotheses presented in Chapter 1 have already been summarized and therefore, will not be reviewed in detail. In this section, however an attempt will be made to consider the results of Chapters 3 and 4 together, by reviewing the answers to the questions presented in the introduction to Chapter 1.

The first question asked was--"How do the characteristics of the residents affect the frequency of their participation in various leisure activities?" The results of the hypothesis proposed to test this question indicated that those with incomes over \$8,000 participated more frequently than those whose incomes were lower, in most activities

except flower gardening and relaxing. Life cycle as measured by the husbands age was also shown to be a factor which influenced the frequency of participation in various activities. With regards to residential experience it was shown that new residents participated as frequently or more frequently in rural-related activities, as well as in most urban-related activities. What differences there were between the groups could be attributed to the significant differences in age between the long-term rural residents and the new urban resident.

The second question which was considered was--"To what extent does the environment constrain or facilitate activities?" This question was approached in two ways; first, specific attributes of the fringe were examined, lot size and distance to neighbours, in order to see what effects, variations in these would have. When interests were correlated with participation, some fairly low correlations resulted, especially for the activities in which the greatest proportion of the sample participated. This result suggested the absence of constraining effect which was the result of activities being done in the urban area, as well as suggesting the relatively low degree of interest there is in the leisure activities which are done regularly by many people. Respondents were not asked the degree of interest which they had in activities that they did not participate in, thus the extent of all the

constraining variables was not considered. These results suggest that a more detailed examination of the degree to which various constraints are important in contributing to these low correlations would be of interest.

Finally in order to consider the implications of this question more fully, it was approached indirectly by considering the third question--"To what extent does participation in activities facilitated or constrained by the environment affect the residents' satisfaction with the environment?" Although, the results of this examination were somewhat inconclusive it was shown that the urban preference group participated more frequently in urban activities of attending club meetings, volunteering, shopping and attending movies and had a higher interest in these activities. The association between the rural preference group in rural-related activities was shown to be significant.

The relationship between the residents' characteristics and preferred residential location was examined to see if these might help to explain the fact that the results were inconclusive. The results of this analysis showed that length of residence, socio-economic variables and past residential experience were not significantly related to residential preference. However, when employment status was considered, retirement was shown to be significantly related to urban preference. It appears that it is not so much interest in pursuing activities that are urban-

related which is significant here but the lack of interest in activities specifically facilitated by the fringe.

Although, these results are not conclusive, the idea that experiential congruence is a factor in residential location should not be overlooked in consideration of fringe areas has been shown. People located in the fringe do engage in activities which are facilitated by the area; 73.6 percent of the residents have a vegetable garden, or keep animals or do both. Horses, cows, chickens are kept by 18.1, 24.3, and 25 percent of the residents respectively.

In the past, the fringe has been considered in various ways. The approach taken here suggests that there are fringe areas within the metropolitan region which should be recognized as unique residential areas in that the persons who are there are engaged in leisure activities which describe a particular life style.

Further Research

Before considering specific recommendations for further research, the limitations of this study will be noted.

The nature of the data collected on the frequency with which activities were performed, conformed to the typical activity curve in which a high proportion of the respondents either did or did not do the activity, the

use of this non-normal data was further complicated by having ordinal measures of variables. Because of these characteristics of the data, the analysis concentrated on examining the differences of means between groups of the sample, omitting the effects which more exact descriptions of the groups might have had and ignoring the variations of the groups around the means except to the extent that they were included in the analysis of the significance.

However, the results have indicated some significant relationships and where these were not proven, associations have been suggested. Thus the use of the activity time budgets are suggested as the most appropriate next step in examining these relationships and others suggested by this analysis. It may be that with the increasing interest in such tools of analysis, that this type of data will be collected routinely in the near future by government agencies. If this type of data is available several directions could be suggested for its use.

1. A detailed examination of the importance of the constraints of income, time, employment status, distance on the correlations between interests in and frequency of performance of activities.
2. A consideration of the correlation between a full range of activities related to the environment and satisfaction with particular attributes of that environment.

3. Comparative studies between the leisure activities of persons living in the fringe as compared to other areas in order to determine to what extent they differ and to what extent the fringe areas have experienced suburbanization; and a consideration of activities to see to what extent physical attributes of the fringe are important in facilitating them.

Planning Implications

The implications of these results are important to planning at two levels. With regards firstly to the design of specific environments, a number of results are significant. It may be said that distance was not shown to be a constraining factor restricting participation in urban located leisure activities, except possibly for the elderly. Increased distance to neighbours was not shown to significantly restrict visiting except for those who visited infrequently anyway. The lot sizes associated with the keeping of particular animals and gardening were examined and this information may be valuable in establishing minimum lot sizes on a functional rather than purely service-oriented basis.

Taking a larger perspective and examining the fringe area in a regional context, these results become more important in the planning approach which is taken to such

areas. We have not considered problems of speculation, servicing, disappearing farmland with regards to fringe areas, nor was it our intention to do so. These problems must be dealt with before the approach which we are suggesting will be of any value. As Gertler (1972, p. 44) points out in his consideration of urban growth--

. . . as long as shadow areas exist, the debate about urban form is of academic interest only. If cities extend irresistibly towards the enveloping shadow areas, then the continuation of the present agglomerating tendencies is assured. The search for alternatives is confined to the realm of theory.

Assuming then, that we can control the limitless urban growth, the value of this study lies in understanding residential location so that functional areas can be provided, as compared to endless suburbia. Examination of the activities in which residents of the fringe engage, as well as an understanding of who those persons are in terms of age, income, life cycle, enable us to be better prepared to make decisions regarding future land uses of areas such as these.

The results of this study indicate that keeping livestock, vegetable gardening are indeed leisure activities. Thus we are encouraged to ask -- Can we provide areas for these activities more economically, by creating gardens on the outskirts of cities, or by other such means; or is there more to the life in the fringe that could not be

duplicated in this way? Once again the answer to this question must await a more comprehensive study of the life style of the fringe. However, the purpose of this study has been fulfilled in identifying the extent to which residents' activities can be characterized by their relationship to the environment and in suggesting their importance in determining residential location preference.

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A P P E N D I C E S

A P P E N D I X A

A P P E N D I X B

QUESTIONNAIRE

RURAL FRINGE STUDY

Please put a check in the appropriate squares ☐ and fill in the blanks_____.

How long have you lived in this house ?

_____ Years

Do you own or rent ?

☐

Own

☐

Rent

Where was your previous residence ?

☐
☐
☐
☐

in a large city (over 100,000)

in a suburban area

in a small city or town

in a rural area

If houses were equally available through-out the Lower Mainland where would you prefer to live ?

☐
☐
☐
☐

in Vancouver

in a suburban area

in a small town or city

where you are now

Do you think you will move in the next five years ?

☐

Yes

☐

No

Which of these animals, if any do you keep ?

☐
☐
☐

Horses

Cows

Chickens

Other, please specify,

What size is your lot ?

_____ feet by _____ feet or _____ acres

Is your lot size suited to your needs ?

☐
☐
☐

Too large

Just Right

Too small

How do each of the following contribute to your feelings of satisfaction or dissatisfaction with this area ?

VERY SATISFIED SATISFIED DISSATISFIED VERY DISSATISFIED NOT IMPORTANT

Taxes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cost of House & Lot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
House Size	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Open Space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clean Air	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quietness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality of Schools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality of Services ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Neighbours	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Distance to Stores	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Distance to Schools ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Here is a list of leisure activities done outside the home. On the left side of the page put a circle around the number that tells how often you do the activity IN SEASON. In the columns on the right side of the page; first, circle the number that tells how well you like the activity; in the second column circle the number that tells where you most often do the activity. Please do not skip any activity. (If you never do the activity, leave the columns on the right blank.)

HOW OFTEN DO YOU
DO THESE ACTIVITIES ?

HOW WELL DO
YOU LIKE THEM ?

WHERE DO YOU DO
DO THEM ?

1. More than once a week
2. Once a week
3. 2 or 3 times a month
4. Once a month
5. Less often
6. Never

1. Like very much
2. Like
3. Indifferent or dislike

1. Home
2. Vancouver
3. Maple Ridge
4. At home
5. Elsewhere

1 2 3 4 5 6	a. church related activity	1 2 3	1 2 3 4 5
1 2 3 4 5 6	b. going to movies	1 2 3	1 2 3 4 5
1 2 3 4 5 6	c. going to plays, concerts	1 2 3	1 2 3 4 5
1 2 3 4 5 6	d. club or organization meetings	1 2 3	1 2 3 4 5
1 2 3 4 5 6	e. volunteer work	1 2 3	1 2 3 4 5
1 2 3 4 5 6	f. shopping other than for groceries	1 2 3	1 2 3 4 5
1 2 3 4 5 6	g. going to restaurants, pubs etc.,	1 2 3	1 2 3 4 5
1 2 3 4 5 6	h. attending sports events	1 2 3	1 2 3 4 5
1 2 3 4 5 6	i. playing sports	1 2 3	1 2 3 4 5
1 2 3 4 5 6	j. hunting or fishing	1 2 3	1 2 3 4 5
1 2 3 4 5 6	k. horseback riding	1 2 3	1 2 3 4 5
1 2 3 4 5 6	l. hiking	1 2 3	1 2 3 4 5
1 2 3 4 5 6	m. caring for animals	1 2 3	1 2 3 4 5
1 2 3 4 5 6	n. vegetable gardening	1 2 3	1 2 3 4 5
1 2 3 4 5 6	o. maintenance of lawn or flower garden .	1 2 3	1 2 3 4 5
1 2 3 4 5 6	p. maintenance of house or car	1 2 3	1 2 3 4 5
1 2 3 4 5 6	q. reading or relaxing outdoors	1 2 3	1 2 3 4 5

If your nearest neighbour was standing in his yard, could you hear him if he called to you from his door step ?

☐

Yes

☐

No

Would you prefer to be closer or further from your neighbours, or are you just right ?

☐
☐
☐

Closer

Just Right

Further

About how often do you visit with your neighbours ?

☐
☐
☐
☐

At least once a week

2 or 3 times a month

Once a month

Less often or never

Could you please indicate in which of the following income groups your total family income falls ?

☐
☐
☐
☐
☐
☐

Under \$4,000

\$4,000 to \$7,999

\$8,000 to \$11,999

\$12,000 to \$15,999

\$16,000 to \$19,999

Over \$20,000

Has this questionnaire been completed by:

☐

Husband

☐

Wife

Do you have any further comments about your satisfaction or dissatisfaction with living in this area ?

Please indicate the ages of the members of your family living at home ?

Husband _____

Wife _____

Children _____

What is the highest level of education reached by:

Husband _____

Wife _____

Is the husband of the family:

☐
☐
☐

Employed

Retired

Other

If employed, how long does it take the husband to get to work?

_____ Minutes

What is or was the occupation of the husband ?

Does the wife of the family work outside the home ?

☐
☐
☐

Full time

Part time

Neither

THANK YOU VERY MUCH FOR YOUR COOPERATION !!

A P P E N D I X C

GLOSSARY OF TERMS

APPENDIX C

GLOSSARY OF TERMS

Church	- Church Related Activities
Movie	- Going to the Movies
Play	- Going to Plays or Concerts
Club	- Club or Organization Meetings
Volunteer	- Volunteer Work
Shop	- Shopping other than for Groceries
Pub	- Going to Restaurants or Pubs etc.
Asports	- Attending Sports Events
Psports	- Playing Sports
Hunting	- Hunting or Fishing
Riding	- Horseback Riding
Hiking	- Hiking
Animal	- Caring for Animals
Vegetable	- Vegetable Gardening
Flower	- Maintenance of Lawn or Flower Garden
Maintenance	- Maintenance of House or Car
Relax	- Reading or Relaxing Outdoors

A P P E N D I X D

PERCENTAGE AND MEAN FREQUENCY OF PARTICIPATION
IN THE ACTIVITIES

APPENDIX D

PERCENTAGE AND MEAN FREQUENCY OF PARTICIPATION IN THE ACTIVITIES

Activities	Mean	Never	Less than Once a Month	Once a Month	2 or 3 Times a Month	Once a Week	More than Once a Week	Total
		1	2	3	4	5	6	
Church	1.9	62	14	2	3	7	7	100
Movie	1.9	27	50	16	2	1	1	100
Play	1.6	44	45	4	-	1	1	100
Club	2.1	45	46	14	14	4	1	100
Volunteer	1.7	58	20	4	5	5	1	100
Shop	3.5	7	11	24	27	18	9	100
Pub	2.8	13	32	22	16	10	3	100
Asports	1.9	47	27	11	2	4	4	100
Psports	1.9	63	11	3	4	9	5	100
Hunting	1.9	43	30	10	5	2	3	100
Riding	1.4	75	11	7	1	2	5	100
Hiking	2.0	43	27	9	6	4	5	100
Animals	4.2	27	6	1	-	1	61	100
Vegetable	4.4	15	10	2	4	12	52	100
Flower	4.9	2	4	4	8	25	52	100
Maintenance	4.4	3	10	15	10	22	36	100
Relax	4.8	4	7	4	9	13	57	100