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AN ANALYSIS OF THE LEISURE FACILITY PREFERENCES OF THE URBAN ELDERLY

By

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A THESIS SUBMITTED TO THE FACULTY OF GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS

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ABSTRACT

The general objective of this thesis is to examine the differences in the leisure facility preferences of the urban elderly who live in two specific residential environments. These are: (i) an age-integrated environment, and (ii) an age-segregated environment. The specific objectives of the study are: (i) to identify the evaluative criteria used by the elderly to assess leisure facilities, and (ii) to determine and compare evaluations of leisure facilities by elderly residents of age-integrated and age-segregated housing. Using repertory grid methodology and bipolar adjectival rating scales, data are collected from samples of the elderly in Selkirk, Manitoba. Four main categories of rating scales are identified and form the basis for the presentation and analysis of results. The analysis discloses that the age-integrated and age-segregated elderly exhibit strong similarities respecting facility preferences. The small number of significant differences that occur between the samples are attributed largely to differences in mobility, age, health, and degree of familiarity with the leisure facilities. Suggestions for future research and recommendations concerning leisure services in Selkirk are offered.

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CHAPTER I

INTRODUCTION

1.1 Objectives

The general objective of this thesis is to examine the differences in the leisure facility preferences of the urban elderly who reside in two specific residential environments. Past work generally indicates that the residential environment plays a significant role in shaping the leisure behaviour of the elderly (Bultena and Wood, 1970; Carp, 1967, 1978; Kleemeier, 1961; Morgan and Godbey, 1978; Schooler, 1969; Sherman, 1974). The thesis intends to examine this relationship by comparing the leisure facility preferences of the urban elderly living within: (i) an age-integrated residential environment, and (ii) an age-segregated residential environment. The specific objectives are:

1. to identify the evaluative criteria used by the elderly to assess leisure facilities.
2. to determine and compare evaluations of leisure facilities by elderly residents of age-integrated and age-segregated housing.

1.2 Structure of the Thesis

The remainder of Chapter One presents relevant operational definitions and an outline of the background to the study. Chapter Two of the thesis involves a review of the related literature. The spatial aspects of leisure behaviour are discussed first. This is followed by an examination of geographical research concerning the spatial aspects of the behaviour of the elderly. The chapter closes with a review of studies that have specifically focused upon the leisure behaviour of the elderly.

Chapter Three offers a discussion of the research design. It opens with a discussion of the methodology to be employed in the thesis. This is followed by a description of the sampling and data collection procedures. As a result of employing these procedures, the evaluative criteria used by the elderly to assess leisure facilities are identified. In Chapter Four, the data analysis is presented. The first part presents a descriptive analysis of the data. The second part offers statistical inferential tests to evaluate the differences between the age-integrated and age-segregated elderly with regard to their assessments of leisure facilities.

Chapter Five of the thesis offers an overview of the results of the analysis. It also considers and assesses the implications of the findings for avenues of future research.

1.3 Operational Definitions

It is important to explain the basic concepts to be employed in the thesis. The "elderly population" is often defined as those people who are 65 years of age (Canadian retirement age) and over (Golant, 1975; Herbert and Peace, 1980; McAvoy, 1979; Statistics Canada, 1979). To maintain consistency in this area of research, the present thesis will therefore employ the same definition. Additionally, this study will concern itself with the male and female elderly who are not institutionalized. The reason for this is to avoid consideration of institutional constraints or restrictions that might inhibit or bias the leisure behaviour of the elderly.

The terms "age-integrated" and "age-segregated" are used commonly throughout the literature to denote the two basic residential environments of the elderly (Golant, 1975; Lawton, et al., 1980; Morgan and Godbey, 1978; Schooler, 1969). The age-integrated environment includes conventional housing facilities such as single-family detached homes, single-family attached homes, and multiple family dwellings. The age-segregated environment includes housing facilities designed specifically for an elderly population e.g., retirement communities and retirement homes. Additionally, there are differences between the age-integrated and age-

segregated elderly in terms of their demographic and socio-economic characteristics (Gutnam, 1980). These differences may have some influence on the leisure facility preferences of the elderly.

The term "leisure" has been defined in many different ways (Neumeyer and Neumeyer, 1958). Most researchers have seemed to agree that leisure refers to a function of time and not necessarily activity. Kraus has given the following definition:

> leisure is that portion of an individual's time which is not devoted to work or work-connected responsibilities and which therefore may be regarded as discretionary or unobligated time.
>
> (Kraus, 1978:44)

Using this definition as a baseline, a "leisure facility" is a place in which the elderly spend their leisure time. A leisure facility may offer opportunities for passive activities such as simple conversation and socializing or for more active pursuits such as golf and curling.

1.4 Background to the Study

The elderly proportion of the Canadian population has recently shown a marked increase. In 1976, this age group accounted for 8.1 per cent of the nation's population (Statistics Canada, 1979:2). By 1981, the elderly had increased to 9.7 per cent of the total population (Statistics

Canada, 1982). If this demographic trend continues, the elderly will account for over 20 per cent of the population by 2031 (Statistics Canada, 1979:30). The potential impact of this demographic change upon the social structure of our society should be of keen interest to social geographers because the different needs and characteristics of the elderly will have significant spatial implications.

The leisure preferences/needs of the elderly have been identified as a research area of major concern (McAvoy, 1979; Lewko and Crandall, 1980). Researchers from a variety of disciplines, such as gerontology, sociology, and psychology, have indicated that participation in satisfying leisure activities is beneficial to the physical and mental well-being of the elderly. For example, Ray's (1979) study of the elderly in Maryland found that involvement in leisure activities favourably influenced their level of "life satisfaction", measured in terms of "health", "religious activity", "leisure activities", "intimate contacts", and "security". However, the findings of this work infer that the level of life satisfaction expressed by the elderly could be a result of the socializing that takes place due to their participation in leisure activities rather than the nature of the activity itself. Ray's results have generally been supported by the work of others. Graney

(1975) reported results "indicating that happiness is positively related to social participation in old age" (Graney, 1975:704). Walsh (1976) suggests that the provision of leisure services helps to reduce the social isolation experienced by the institutionalized elderly thus improving their attitudes toward life. Sherman (1974) and Nystrom (1974) also comment on the relationship of leisure and life satisfaction among the elderly. Sherman, for example, noted that participation in leisure activities had a "moderate" influence on the "outlook on life" held by the elderly. Nystrom's investigation of "activity patterns and leisure concepts among the elderly" is based on the assumption that activity involvement is important in maintaining satisfactory levels of "morale", "health", and "adjustment". The Canadian federal government also seems to support the generally held belief that leisure activities and social interaction are important to the elderly. The Special Senate Committee's report on retirement age policies (Government of Canada, 1979) noted that individuals who have developed interests in non-work-related activities and cultivated social contacts outside their work environment will probably make a much easier transition to retirement. The report thus infers that these individuals will experience better health and life satisfaction as a result of

their leisure involvement.

There exists much evidence that the age-segregated residential environment provides superior leisure opportunities which, in turn, promote a healthier, more satisfying lifestyle for the elderly. Bultena and Wood (1970) for example, in studying the leisure activities of elderly males living in planned retirement communities, found that the level of activities increased upon entry to the community. Carp(1967) and Sherman's (1974) analyses of the changes that took place in the leisure participation of the elderly who had recently moved from the age-integrated environment into an age-segregated complex suggested that the former had a possible negative influence. Similarly, Morgan and Godbey (1978) found that the frequency of participation in leisure activities increased among the elderly who had decided to move to an age-segregated environment. Schooler (1969) studied the impact of the residential environment upon selected social characteristics of the elderly. These included "the formation and maintainance of social relationships, physical health, and emotional well-being or morale" (Schooler, 1969:25). The results of his study also support the proposition that the age-segregated environment is better for the well being of the elderly.

The findings of these studies raise interesting questions for social planners in view of the residential patterns of the elderly. For instance, the residential patterns of the elderly are not atypical in that "they are about as likely as the rest of the population to reside in urban centres" (Shulman, 1980:29). Canadian census statistics (Statistics Canada, 1982) indicate that 76 per cent of Canada's population resides in urban areas. In comparison, the same statistics reveal that 78 per cent of Canada's elderly live in urban settlements. Canadian census statistics also reveal that most of the elderly reside in the age-integrated environment (Statistics Canada, 1979). In 1976, for example, only 8.7 per cent of the elderly lived in an age-segregated residential environment. Golant (1975) has suggested that the inclination of this age group to live within an age-integrated environment may be a growing trend. This may be due to the financial costs involved in moving into an age-segregated complex (Gutman, 1980). Assuming that the findings of research concerning the relationship of the leisure behaviour of the elderly and their housing are valid, it would appear that the elderly are showing a greater propensity towards living in residential environments that could be construed as being detrimental to both their

leisure opportunities and overall physical and mental well-being. A major purpose of the present thesis is to examine how the leisure satisfaction of elderly residents of age-segregated residential environments differs from the leisure satisfaction of the elderly living in age-integrated housing.

This study hopes to contribute to this particular research area in a twofold way. First, there is a significant lack of geographic information concerning the leisure behaviour of the elderly. According to McAvoy, "there is little research data available that describes how people in the over 65 age cohort use their discretionary free time or what type of leisure opportunities they prefer" (McAvoy, 1979:41). Thus, the present study will help to expand our geographic knowledge in this area. Second, few studies of the spatial aspects of the behaviour of the elderly, in terms of leisure activities, have been conducted in Manitoba. The provincial government has, in the past, assessed the "needs" of the elderly in Manitoba in terms of quantity, type, and location of leisure facilities in the Province (Department of Health and Social Development, 1975). Other researchers have evaluated the recreational/leisure programs and facilities provided for the elderly in Manitoba from the viewpoint of the program administrators (Beavis, 1973; Robertson, 1968). In contrast, the present study attempts to determine

how some aspects of leisure facilities are assessed by elderly persons living in contrasting residential environments. This will assist geographers, in general, and social planners, in particular, to develop a better understanding of the problems associated with providing leisure opportunities for older people.

1.5 Summary

The general objective of this thesis is to examine the differences in the leisure preferences of the urban elderly who reside in two specific residential environments. In particular, the study attempts to:

1. identify the evaluative criteria used by the elderly to assess leisure facilities.
2. determine and compare evaluations of leisure facilities by elderly residents of age-integrated and age-segregated housing.

The structure of the thesis is outlined and relevant concepts defined. The background to the study is then discussed and the intended contribution of the thesis to existing knowledge explained.

CHAPTER II

REVIEW OF THE LITERATURE

The spatial aspects of leisure behaviour have attracted the attention of many geographers. Similarly, many geographers have investigated the spatial aspects of the behaviour of the elderly. However, few geographic studies have been concerned with an examination of the spatial aspects of the behaviour of the elderly in terms of leisure activities. The purpose of this chapter is to review the work that has been conducted in each of these areas of research and explain their relevance to the present thesis.

2.1 Spatial Aspects of Leisure Behaviour

Geographers have traditionally examined leisure behaviour in terms of measuring the demand for various kinds of outdoor recreation facilities (Lavery, 1974). To achieve this objective, some have used a socio-economic approach. For example, Romsa (1973) examined the relationship between socio-economic groupings of users to particular categories of outdoor recreational activities. His findings indicated that people of similar socio-economic background often participate in the same types of recreational activities. Mitchell and Lovingwood (1976) investigated the "relation-

ships between park density and selected population, family, housing, and economic characteristics in urban areas" (Mitchell and Lovingwood, 1976:7). Their findings indicated that people of low socio-economic status make more use of urban parks and that the central areas of urban areas have better recreational facilities than suburban areas.

Other researchers have investigated the leisure behaviour of particular user groups in terms of the site characteristics of the facilities that they visit. Hecock (1970), for example, found that accessibility to beaches is an important characteristic in determining their attraction. Some researchers have attempted to assess demand or preferences for outdoor recreation activities on the basis of residential location. For example, Hendee (1969) and Knopp (1972) found that the recreational activity patterns of rural residents are significantly different from those of urban residents and are often a reflection of the immediate environment.

In a different context, Jackson and Schinkel (1981) found that significant differences exist between resident campers and tourist campers regarding their recreational preferences. The differences were explained largely in terms of the degree of familiarity the individual had with respect to the local environment. Another approach to

explaining leisure behaviour has been to examine the influence of distance. Lentnek, et al. (1969), for example, in an investigation of the spatial relationships between recreational boaters in Ohio and the water bodies they used, found that the activity-oriented boaters (i.e. sailing, water-skiing) had a tendency to travel short distances while boaters such as fishermen were more willing to travel long distances.

These studies, and others like them, have provided valuable knowledge regarding the spatial aspects of recreational/leisure behaviour. However, most of these studies employ an aggregate approach. Although aggregate studies are quite useful in explaining leisure behaviour in terms of large data groupings, such as census data, socio-economic groupings, and activity types, they often fail to account for the individuality of subjects within these groupings. Researchers, recognizing that leisure behaviour is perhaps the most discretionary human activity, and therefore greatly influenced by individual attitudes and values, have thus experimented with behavioural approaches (Mercer, 1971, 1974).

The behavioural approach is a disaggregate method of analysis which focuses upon mental processes that govern individual decision-making (Gold, 1980). In using this

approach, researchers use the assumption that man's overt activities in the environment (spatial behaviour) stems from the information that he receives about his environment through his experiences. The manner in which a person collects, organizes, and interprets this information (cognition) leads to the formulation of decisions that will determine responses to the recognized environment.

The behavioural approach traces its modern-day origins to the work of Lynch (1960) and Gould (1966). Lynch had residents of Boston formalize their cognitive images of their environment through drawings which he called "cognitive maps". Gould took this concept a step further when he requested students of various American colleges to draw "mental maps"[1] of the states of the U.S.A. in terms of their residential desirability. From these individual maps, Gould was able to construct "preference surfaces"[2] of the U.S.A. Recent studies in geography have introduced differ-

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1. The terms "cognitive maps" and "mental maps" are often used synonomously in the literature. For example, see Spencer (1973:2) and Golledge (1981:1338).

2. Since Gould's paper was published, some disagreement has arisen over the use of the term "mental maps" to describe preference surfaces. Golledge (1981:1338) comments that "only researchers ignorant of the mainstream of behavioural research in geography would continue to perpetuate the confusion of concepts of mental maps and preference surfaces."

ent methods of measuring the cognitive processes affecting spatial behaviour in a variety of geographic situations. These have included the study of the spatial behaviour of hospital patients (Earickson, 1970), consumer behaviour (Blommestein, et al., 1980; Downs, 1970; Harrison and Sarre, 1975; Hudson, 1974; Smith, 1974; Spencer, 1980; Timmermans, 1981), migration (Demko, 1974; Lloyd, 1976; Smith and Raths, 1980), and residential preferences (Johnston, 1973; Silzer, 1972). The spatial aspects of leisure/recreational behaviour have also been investigated using behavioural approaches.

For example, Aldskogius (1977) investigated the cognitive processes affecting the pattern of day trips to recreational facilities by residents of Uppsala, Sweden. His findings indicated that an individual's "familiarity space", measured in terms of the cognitive images one holds of his environment, can significantly influence the decisions made by the individual regarding recreational destinations, which Aldskogius refers to as one's activity space[3].

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3. Aldskogius defines the term "activity space" as the "aggregate spatial pattern of places and areas visited on recreational day trips by an individual or groups of individuals during some specified period of time". (Aldskogius, 1977:164). For further clarification of this term see Jakle, et al. (1976:92).

Murphy and Rosenblood (1976) investigated the relationship between the "spatial search process" conducted by tourists upon their arrival on Vancouver Island and such factors as "personal characteristics", "purpose of the trip", "degree of planning for the trip", and "location of accomodations". Their findings suggest that mental images of destinations formed before arrival have a strong influence on the search process and thus leisure behaviour. Intervening opportunities (e.g. shopping) also appear to have a significant influence upon the search process in that they contribute additional environmental information which can then cause adjustments in the leisure behaviour expressed by the individual.

Murphy's (1975) investigation of the factors influencing the decision-making processes of recreational boaters in Ohio demonstrates the way in which the behavioural approach can complement "classical" approaches. In this case, recreational behaviour was explained in terms of the relationships between number of visits to boating sites and the subject's "socio-economic status", "travel time to sites", "intervening opportunities", and "attractiveness of sites". The study indicated that the inclusion of a mental construct (i.e. attractiveness of site) helped to provide a much clearer understanding of the decision-

making processes used by the recreational boaters in the study area. The value of the behavioural approach for recreational research is also demonstrated in Peterson's (1974) comparative study of canoeists and resource managers in the Boundary Waters Canoe Area in Minnesota. His analysis of the ways in which the attitudes and perceptions of the subjects in each group affected their preferences disclosed clearly defined differences between them.

Some researchers have used photographs to identify and measure the cognitive images held by individuals. These are then used to help define their preferences regarding outdoor recreation sites. For example, Peterson and Neumann (1969) required subjects to examine photographs of beaches along Lake Michigan and rank-order the site characteristics they felt were important in providing a satisfying recreational experience. Their findings revealed that significant differences in the site preferences people have regarding beach use could be partly explained by differences in their age and education levels. In this case, older and better-educated people had a tendency to prefer beaches which exhibited more scenic and serene qualities while adolescents preferred beaches which allowed greater social contacts and provided amenities such as food and beverage outlets. On a larger scale, Carls (1974) used

photographs to identify and measure the preferences individuals had with respect to outdoor recreation landscapes throughout the United States. The findings of his analysis indicated that people show a strong preference for recreational landscapes that display little or no man-made activity.

The foregoing discussion discloses two important concerns with respect to the objectives of the present study. First, due to the individualistic nature of leisure/recreational activity, studies which employ a behavioural approach can provide an alternative and very valuable means of examining and thus explaining the spatial aspects of leisure behaviour. Second, research concerned with the spatial aspects of leisure behaviour has largely focused its attention on assessing the demand for outdoor recreation facilities by various user groups. In this regard, the leisure behaviour of the elderly appears to have warranted little attention.

2.2 Spatial Aspects of the Behaviour of the Elderly

Past geographical research concerned with the spatial aspects of the behaviour of the elderly may be organized into two general categories: (i) the inter-regional and intra-urban migration patterns of the elderly, and (ii) the influence of the urban environment upon general activity patterns of the elderly. Studies conducted in the first

category have generally relied upon aggregate data to develop a general understanding of elderly spatial behaviour. For example, Allon-Smith (1982) and Law and Warnes (1976) examined census data to investigate the inter-regional migration behaviour of the elderly in England and Wales. From the temporal changes that took place in the population structure of census areas, coastal areas and seaside resorts were identified as major destinations of elderly migrants. The increased migration of the elderly to these areas is explained largely in terms of their increased wealth and mobility together with their desire to locate in areas having an attractive climate and an aesthetically-pleasing environment.

A similar study was conducted in the United States of America by Wiseman (1979). In this case, an examination of the changes in census data at the county level of aggregation facilitated the identification of areas in the United States of America that exhibited growth rates in their proportions of the elderly. Wiseman concluded that the elderly, in general, were attracted to areas which had an attractive climate and/or offered good recreational facilities. He also attributed such migration to the increased affluence of the elderly. From a somewhat different perspective, Bohland and Treps (1982) explained the migration

behaviour of the elderly within the United States of America in terms of "selected county attributes". These included "unemployment rates", "median incomes", "percent of elderly below the poverty level", "average old age assistance benefits", and "average property taxes" (Bohland and Treps, 1982:153). The researchers found significant relationships between the economic conditions of a county and elderly migration. However, the relationships were not consistent between regions of the United States suggesting that there are other processes affecting the migration behaviour of the elderly.

Other researchers have concentrated their efforts upon the examination of intra-urban migration and location patterns of the elderly. For instance, Golant (1975) used census data to examine "past locational trends" of the elderly in urban areas of the United States. This data formed the basis for predicting future residential patterns of the elderly. Similarly, Golant (1979) investigated the migration patterns of the elderly "between and within metropolitan and non-metropolitan areas of the United States" (Golant, 1979:37). While this study clearly identifies major migration patterns of the elderly, Golant noted that he encountered problems in explaining the patterns which emerged because of the lack of personal

information about the elderly. In particular, factors presented in the study to explain elderly out-migration from central city areas were judged "hypothetical" due to the scarcity of research concerning the cognitive processes that motivate elderly migrants (Ibid:53). Sclar's (1976) study of the residential location patterns of the elderly in Boston over a forty year period contributed greatly to the identification and description of the spatial patterns of the urban elderly. However, this researcher also had difficulty in clearly explaining the changes that occurred and suggested that more emphasis be placed upon research at the disaggregate level of inquiry. Smith and Hiltner (1975) expressed similar concerns in their investigation of the intra-urban location patterns of the elderly in Toledo, Ohio. In their case, generally weak relationships were found between selected characteristics of the urban environment and the intra-urban location of the elderly. Consequently, the researchers encountered problems in clearly explaining the residential location patterns of the elderly. Their reasons for the weak relationships replicate those of Golant (1979) and Sclar (1976) since they infer that the results obtained could be attributed to individual differences in the population:

> "the residential location decision of a retired corporate manager would undoubtedly differ from that of an unskilled labourer because of their dissimilar knowledge, economic resources and expectations."
>
> (Smith and Hiltner, 1975:477)

Much of the research concerned with the general activity patterns of the elderly focuses upon their daily travel/trip behaviour. Golant (1972), for example, investigated the spatial behaviour patterns of the elderly in Toronto through an examination of their observed daily intra-urban movements. His study identified consistent patterns in their trip destinations when related to transportation modes and the types of environment in which they live. This information allowed Golant to make certain inferences regarding the residential location patterns of the elderly in Toronto. He noted, however, that there still existed a large degree of personal variation within the sample that could not be explained at the "level of analysis" of his study. With similar objectives in mind, Hanson (1977) analyzed the trip characteristics of the elderly and non-elderly in Uppsala, Sweden. In this case, the characteristics measured included "trip destination", "frequency of trips", "arrival and departure times", "modes of transport", "activity at the destination", and "distance involved". His findings showed that, with the

exception of work-related trips, the activity patterns of the elderly were essentially the same as those of the non-elderly.

Carp (1980) examined the daily trip movements of the elderly in San Antonio and San Francisco to assess the influence of the environment upon their mobility patterns. Carp found that San Francisco, with its more closely-knit spatial structure and more flexible public transit system, appeared to foster higher levels of mobility among its elderly than did San Antonio. These results supported her hypothesis that the nature of the environment exerts a strong influence upon the mobility patterns of the elderly. In a different context, Herbert and Peace (1980) and Peace (1982) conducted an ecological study of the elderly in Swansea, England in order to evaluate their spatial patterns. In this case, daily trip activities of the elderly were related to variables that measured the social characteristics of the sample and the characteristics of the environment. Social variables included measures of "health", "morale", "social roles", "social contacts", and "demographic data". The physical environment was measured in terms of "housing conditions", "quality of services", and "degree of friendliness" in the neighbourhood. As in the previous studies discussed, mobility was found to be a major

factor in influencing the activity patterns of the elderly. Significant relationships were also found with respect to the physical environment and mobility patterns. However, some of the results were unexpected and could not be clearly explained. For example, Herbert and Peace found that some areas which scored rather low on the measures of the physical environment reported higher levels of mobility than more highly-rated areas. The researchers also found that health and morale had a significant influence on the activity patterns of the elderly. Cognitive mapping was used by Regnier (1974) to verify the "activity space" of the urban elderly in San Francisco in terms of their use of selected retail and service facilities within their environment. Regnier found a substantially high relationship between patterns of use and the cognitive maps produced by the elderly. However, he cautions the acceptance of these findings because of problems regarding the sample size and differences among the survey sites.

2.3 Leisure Behaviour of the Elderly

The previous discussion has demonstrated the involvement of geographers with research concerning the spatial aspects of leisure and spatial aspects of the behaviour of the elderly. It is significant that few geographical studies have been conducted with regard to the leisure

behaviour of the elderly. In fact, most significant work in this particular area of research has been conducted by specialists in such fields as gerontology, sociology, and recreation planning.

In an exploratory analysis of the leisure needs of the elderly in Minnesota, McAvoy (1979) found that the leisure activity patterns of the elderly were partly related to the residential location of the subject. For example, the study disclosed that while the urban elderly prefer urban-related activities, the rural elderly living in "resource-rich areas" prefer resource-related activities. In addition, the rural elderly living in "resource-poor areas" prefer indoor activities. Bultena and Wood (1970) studied the leisure activities of 322 elderly males living in four planned retirement communities in the south-western U.S.A. The subjects reported that their level of participation in leisure activities generally increased after they had moved to the retirement communities. These findings therefore suggest that the age-segregated environment is conducive to leisure involvement. In particular, the authors suggest that residential characteristics play a significant role in shaping leisure behaviour. For example, living within a large population of elderly peers allowed for "the development of specialized recreation programs for this age group"

(Bultena and Wood, 1970:3), something that may not normally be possible in the age-integrated environment.

Carp (1967) examined the changes that occurred in the quality of life of the elderly who had recently moved from age-integrated housing to age-segregated housing. In general, the findings indicate that the move was seen as an improvement by the subjects. In particular, their participation in satisfying leisure activities increased upon entry to the age-segregated environment. A similar study was conducted by Sherman (1974) in Los Angeles. Comparing the leisure activities of the elderly who resided in an age-segregated residential environment to the activities of a control sample who lived in an age-integrated residential environment, Sherman concluded that activity levels of the elderly increased upon moving to the age-segregated environment. A major reason given to help explain this change in leisure behaviour was the influence created by the provision of on-site recreational facilities in the age-segregated environment. This suggests that distance from or accessibility to leisure facilities might be an important residential concern of the elderly.

Morgan and Godbey (1978), in an analysis of the leisure activities of "retirement villagers" in Sacremento, California, concluded that upon entry to an age-segregated

environment, the number of activities conducted by the elderly decreased but the frequency of participation increased. Contrary to other studies, the researchers did not suggest that the age-segregated environment was an improvement over the age-integrated environment. The greater frequency of participation in activities exhibited by the age-segregated elderly was explained in terms of the greater opportunities that existed in the age-segregated environment. The findings thus imply that, in terms of leisure involvement, the age-segregated environment is an improvement for the subjects in this study.

2.4 The Place of the Study in the Literature

Previous work clearly indicates the lack of geographic literature regarding the spatial aspects of the leisure behaviour of the elderly. Certainly, the geographic research concerned with the general activity patterns of the elderly infers that leisure activities require examination.

However, the literature does not appear to pay specific attention to the elderly and their leisure behaviour. In fact, the literature review indicates that most research concerned with an examination of the environmental influence upon elderly leisure behaviour has been conducted by social scientists in the fields of gerontology (Carp, 1967; Sherman, 1974), sociology (Bultena and Wood, 1970), and

recreation planning (McAvoy, 1979; Morgan and Godbey, 1978). The findings of these studies clearly relate to many spatial aspects of the leisure behaviour of the elderly and are therefore relevant to geographers. A major purpose of the present study is to help fill the gap that appears to exist in the geographic literature respecting the elderly and their leisure behaviour.

The literature review has also demonstrated some weaknesses regarding aggregate studies of spatial behaviour. Aggregate studies often mask individual decision-making which, in the case of leisure behaviour, is an important characteristic of leisure activity. Moreover, many of the studies of the leisure behaviour of the elderly base their findings on the analysis of aggregate participation rates. This can lead to misleading conclusions respecting leisure behaviour because participation rates are often a measure of what is available and not what the individual prefers to do (Morgan and Godbey, 1978:189). The present study will employ a behavioural approach, thus focusing upon the mental processes that influence individual decision-making with respect to the behaviour of the elderly. This approach, therefore, is seen as an alternative and perhaps better way of examining the leisure behaviour of the elderly. This thesis will limit its attention to one particular aspect of

the leisure behaviour of the elderly, that being an investigation of their preferences for leisure facilities.

2.5 Summary

Geographical research concerning the spatial aspects of leisure behaviour and spatial aspects of the behaviour of the elderly is reviewed with respect to the objectives of the present study. The review indicates that geographers have been remiss in the attention given the leisure behaviour of the elderly since most studies of this nature have been conducted in non-geographical fields of research. The present study will attempt to help fill the geographical void that exists in the literature regarding the spatial aspects of the behaviour of the elderly in terms of leisure activities, and will hopefully contribute useful information on this subject.

CHAPTER III

RESEARCH DESIGN

This chapter first presents a discussion of personal construct theory and repertory grid methodology. Repertory grid methodology is the research instrument that forms the basis for the evaluation of the leisure facility preferences of the elderly. A description of the study area and the outline of the data collection procedures are then offered.

3.1 Personal Construct Theory and Repertory Grid Methodology

The research conducted by Gould (1966), concerning the elicitation of "mental" or "cognitive" maps of preferred residential areas, provided much of the impetus for subsequent behavioural research in geography. A variety of techniques are useful for determining and structuring one's cognition of the spatial environment (Appleyard, 1970; Gould and White, 1974; Spencer, 1973). Two research instruments that have been widely used in the study of spatial cognition are the semantic differential and repertory grid methodology. Despite some similarities, there are significant differences between the techniques.

The semantic differential consists of bipolar adjectival rating scales whose "poles" or verbal labels are supplied by the researchers. It has been used in geography to measure images of a variety of environments including the suburban environment (Johnston, 1973), the retail environment (Downs, 1970; Smith and Dolman, 1981), environmental hazards (Golant and Burton, 1970), the rural environment (Palmer, et al., 1977), and the local urban environment (Lowenthal and Riel, 1972). The semantic differential has also been used to examine migration decision-making (Lieber, 1978). Although this technique is useful for the quantitative analysis of the individual's perceptions of the environment, a notable weakness is that the verbal labels of the rating scales are supplied by the experimenter. This introduces the risk of bias on the part of the researcher and therefore may result in an invalid conceptualization of the individual's perceptions (Lundeen, 1972:13).

The repertory grid technique of personal construct theory is one measuring instrument that avoids much of the researcher bias inherent in the semantic differential. Developed by George Kelly (1955) for use in clinical psychological research, it has since been modified to meet the needs of other disciplines that have interests in investi-

gating human behaviour. Personal construct theory is formulated on the basis of one major postulate and extended in eleven corollaries (Kelly, 1955:46). The main premise of the theory is that every individual is his/her own scientist and will structure the surrounding world by developing images based upon his/her experiences. These images are subconsciously operationalized by the individual in the form of bipolar or dichotomous constructs, identified by Kelly as personal constructs. For example, in discriminating between a specific set of elements of the environment, an individual may use the word "clean" as opposed to "dirty". These two words form the verbal labels of a personal construct based upon this particular set of environmental elements. The bipolarity of the constructs is similar to the nature of the semantic differential. However, the verbal labels are elicited from the individual rather than being supplied by researchers.

There are a variety of methods by which personal constructs can be elicited from the individual and analyzed (Bannister and Mair, 1968; Fransella and Bannister, 1977). Elicitation and analysis of personal constructs involves the use of Kelly's repertory grid. The repertory grid is the formal manner by which constructs are obtained and placed within a matrix which also includes the environmental

attributes (elements) being measured. The elicited constructs usually define the rows of the matrix, while the elements define the columns. The relationships between the constructs and elements can then be represented on the matrix with a variety of scoring methods. The resulting "grid" can then be subjected to a variety of statistical tests to evaluate the images held by the individual. To elicit the constructs, repertory grid methodology usually requires that the environmental elements be arranged into triads (i.e. groups of three). A triad of these elements is then presented to a subject and he/she is asked to state one important way in which two of the elements are alike and therefore different from the third element. The answer to this question will form the emergent pole of the bipolar construct. The subject is then asked how the two similar elements are different from the third element. The answer to this question forms the contrast or implicit pole of the construct.

Although the method of triads is the conventional approach for the elicitation of constructs, some studies have encountered problems in its use. The discrimination among three elements, in the manner prescribed by Kelly, has been found too difficult a task for certain age groups. For instance, Allison (1972) found triadic elicitation too

difficult for children and therefore experimented by administering dyads (i.e. pairs of elements). This method has been used successfully by other researchers (Gill, 1982; Ryle and Lunghi, 1970). The procedure simply requires the subject to identify an important way in which two elements are different from each other in order to form the emergent pole of the construct.

Each element of the dyad or triad may be assigned to one of the two poles of the elicited constructs. Some researchers, however, have criticized this system of grid formation as being too restrictive in that it "neglects both the degree to which an element possesses an attribute, and the possibility that it possess neither one pole nor the other" (Harrison and Sarre, 1971:369). Consequently, variations on the repertory grid technique have been developed to allow a finer degree of scoring on the constructs. Such methods use five-, seven-, or eleven-point rating scales to score the elements on the elicited constructs.

Variations on the repertory grid methodology have also been developed regarding the elicitation of elements and constructs. Kelly's original form of the repertory grid technique requested subjects to supply both elements and constructs. However, some studies have employed elements supplied by the experimenter (Hudson, 1974; Lieber, 1978;

Lundeen, 1972; Smith and Raths, 1980). Others have combined freely-elicited constructs with supplied constructs and elements (Harrison and Sarre,1975). This modification of traditional repertory grid methodology permits the grid data to be more easily aggregated for statistical analysis. A "price" must be paid for this analytical convenience, however, and researchers recognize that this departure from the original grid methodology "involves sacrificing some of the person-sensitivity of the Repertory Test" (Harrison and Sarre, 1971:370).

As a means of explaining spatial behaviour, repertory grid methodology is a valuable measuring instrument in that it allows the individual to identify the attributes (or constructs) considered to be important in his/her conceptualization of the environment. Furthermore, the individual can measure the relevant elements of his/her conceptualized environment on these constructs in terms of rating scales. Thus, repertory grid methodology would appear to reduce much of the problem of bias associated with researcher-designed measuring scales.

3.1.1 Geographical Applications

Personal construct theory and its associated repertory grid technique have been used to explain and measure spatial images and preferences in a variety of geographic situations.

For instance, Silzer (1972) used the repertory grid technique to examine the differences in preferences that 50 subjects formed concerning residential areas within the city of Toronto. A similar study was conducted by Tuite (1974) in the city of Hamilton, Ontario. In a completely different context, Townsend (1976) employed the technique to assess the images of the agricultural environment held by a population of colonial farmers in Columbia, South America.

Hudson (1974) used repertory grid methodology to investigate "images of the retailing environment" among 92 student respondents in the city of Bristol, England (Hudson, 1974:470). He concluded "that the Repertory Grid Method represents perhaps the most sophisticated method available to us for studying individuals' images of reality" (Ibid: 491). In a somewhat similar study, Harrison and Sarre (1975) employed repertory grid methodology in a study of the images of areas of Bath and shopping outlets of Bristol, England. Their study was replicated to a certain extent by Tranter and Parkes (1979) who used repertory grid methodology to evaluate the images of Newcastle, Australia held by university students. Their research differed from other work in that they investigated images of certain elements of the urban landscape at different times of the day, thus

adding a temporal dimension to cognitive research.

Some researchers have combined repertory grid methodology with other techniques. For example, Lieber (1978) conducted a study of the migration behaviour of graduating students at the University of Iowa and employed both the repertory grid technique and semantic differential to measure images of various locations in the United States. Lundeen (1972) also combined the semantic differential with repertory grid methodology in his study of the images of urban recreational facilities held by a group of housewives in a Canadian city. Palmer (1978) used repertory grid methodology in conjunction with multidimensional scaling to evaluate the images of countryside locations in England used for recreational purposes.

Smith and Raths (1980) used repertory grid methodology to conduct "an exploratory investigation of behavioural responses to life in a northern Canadian resource community" (Smith and Raths, 1980:17). The researchers modified the repertory grid technique to suit the objectives of the study. In this case, two samples of the community population were used. The first sample was employed to elicit constructs based on the study area and 16 other pre-determined western Canadian settlements. A standardized set of these constructs was then converted into seven-point rating scales and

administered to a second sample in order to evaluate the study community. The results formed a rating grid which was then subjected to a principal components analysis to identify common images of the community. The use of two samples was a distinct departure from standard repertory grid technique. However, Smith and Raths argue that this modification is acceptable as long as "the second sample belongs to the same population from which the constructs were originally obtained" (Smith and Raths, 1980:9).

Repertory grid methodology has thus been demonstrated as a suitable and flexible technique for measuring the spatial cognition of individuals in a variety of situations. It is the intention of this thesis to employ the technique to elicit and measure the images of the leisure environment formed by an elderly population in an urban community. The study will use a variety of leisure facilities to identify the leisure environment. Additionally, the study will replicate the methodology of Smith and Raths (1980) to the extent that the leisure facilities (elements) will be predetermined and two samples of the elderly will be employed. The first sample will be used to elicit constructs based on these elements. The elicited constructs will then be used to form a standardized set of rating scales which will be administered to a second sample of the elderly within the

same population. The subjects will place a mark on the point of the scale which best expresses their feelings towards the facility (element) with regard to each rating scale. Later, the researcher will assign numerical values to each point on the scales. This procedure will permit the results of the rating scales to be more easily aggregated for statistical analysis. However, the procedure will differ from that of Smith and Raths (1980) in that dyad elicitation of constructs will be used rather than triads. This is because some studies have suggested that the problem-solving ability of the elderly is lower than that of younger people (Botwinick, 1978:257). Since it has also been demonstrated that dyads are easier to work with in the field than triads, their employment in the present study should facilitate the task of eliciting constructs.

3.2 Study Area

The samples for this study were drawn from Selkirk, Manitoba, situated approximately 29 kilometres north of the city of Winnipeg, the provincial capital and largest settlement (Figure 1 and 2). Largely an industrial community, Selkirk has a population of 10,476 people (1980 Community Reports). Of the total population recorded in 1979, 11.4 per cent (1980 Community Reports) was classified as elderly (65 years +) indicating that the community contains more

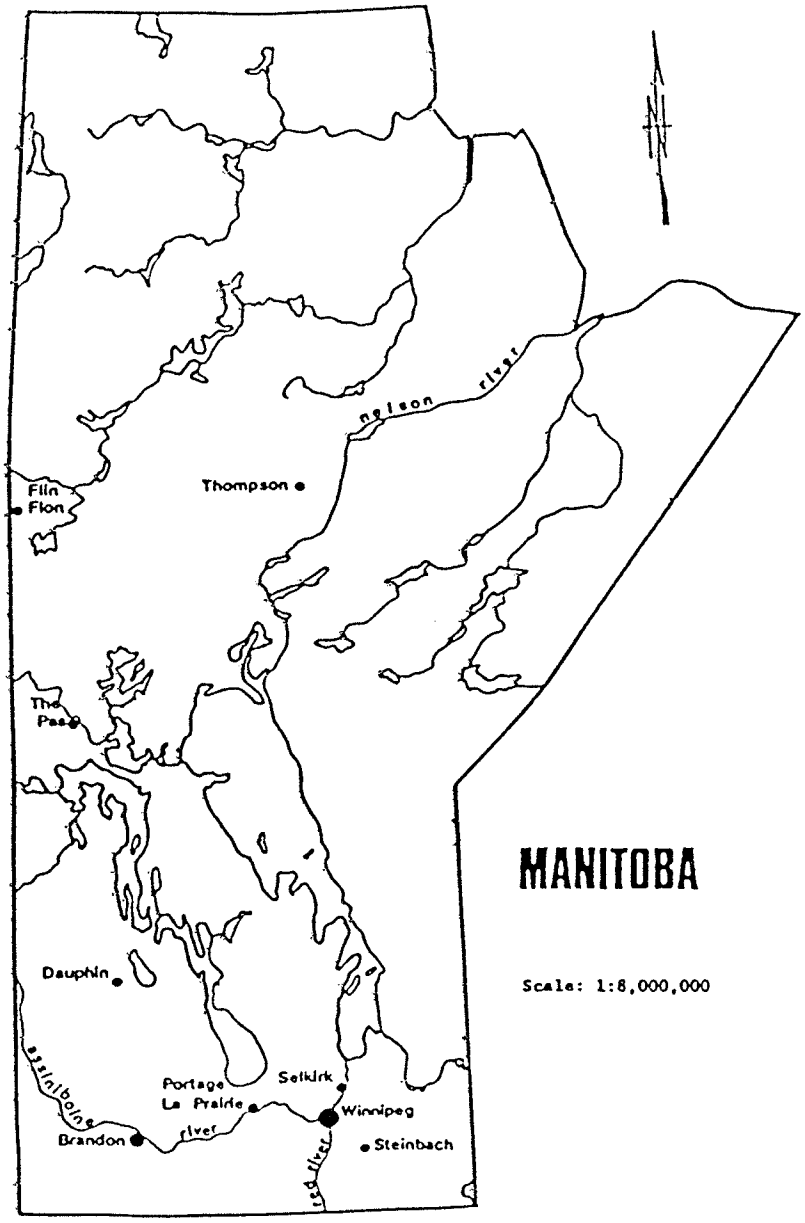

FIGURE 1 PROVINCIAL SETTING

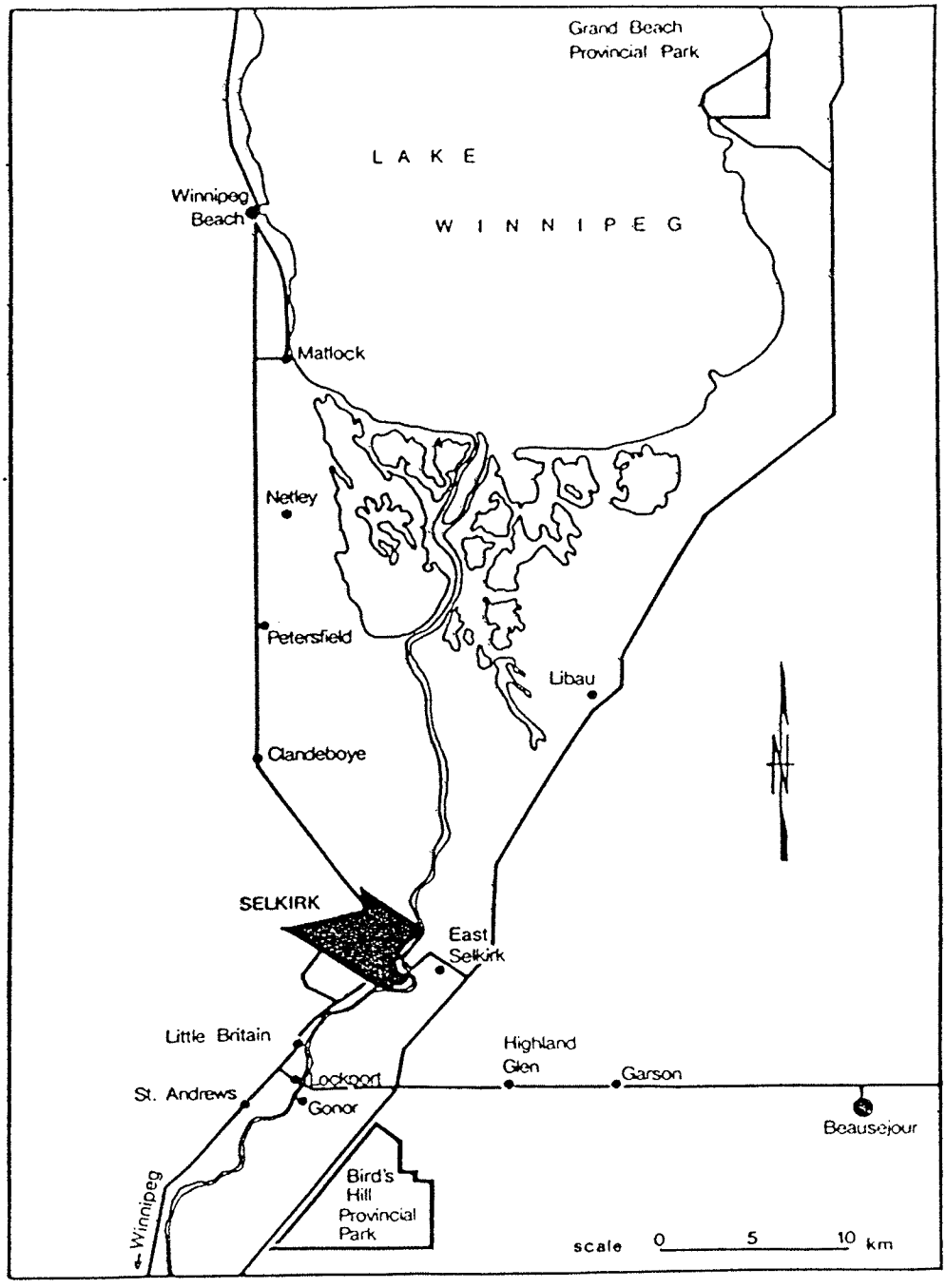

FIGURE 2 REGIONAL SETTING

than the average number of elderly people.[1] Located in the town are three nursing homes and three age-segregated apartment complexes (Figure 3). At the time this study was completed, a fourth age-segregated complex was nearing completion. Much like other communities of its size, Selkirk offers a variety of recreational and social services. In particular, Selkirk contains the following facilities: artificial ice arena, artificial ice curling rink, 18 hole golf course, senior citizen's centre, indoor and outdoor swimming pools, indoor and outdoor running tracks, parks, libraries, theatre, all major churches, a marine museum, and numerous shopping establishments. Moreover, the town is unique in Manitoba since it provides an hourly bus service to Winnipeg.

3.3 Sample Design

Separate samples of the elderly within the study were employed for the (i) elicitation of personal constructs, and (ii) administration of the rating scales. The sample used for the elicitation of personal constructs (i.e., preliminary sample) involved a total of 40 elderly subjects (20 from

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1. In 1976, 8.1 per cent of Canada's total population was classified as elderly. By 1981, this figure had increased to 9.7 per cent (Statistics Canada, 1979; 1982).

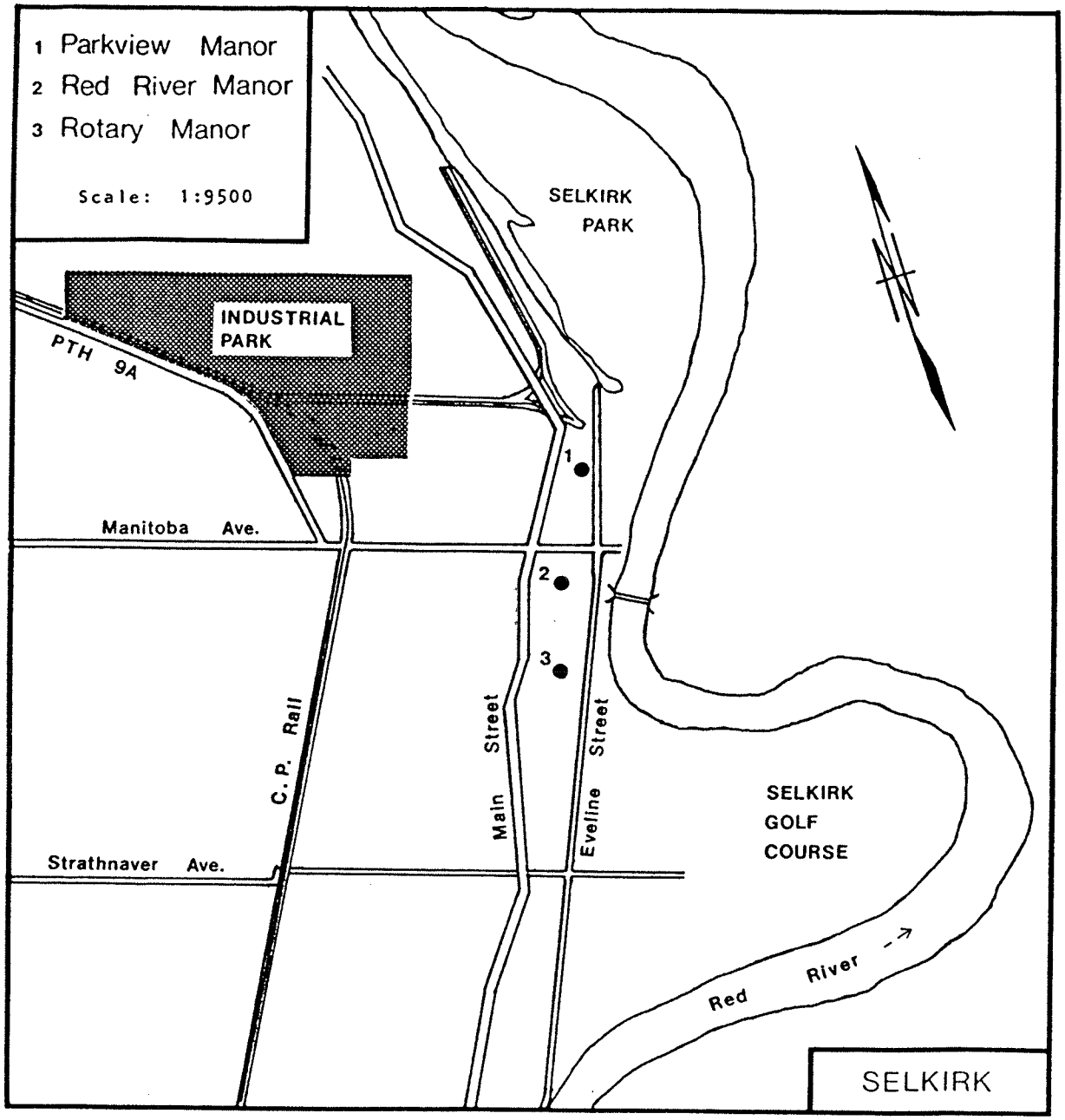

FIGURE 3 LOCAL SETTING: MANOR HOMES

each residential situation). The sample used for the administration of the rating scales (i.e., the final sample) involved 60 elderly subjects (30 from each residential situation). Figure 4 outlines the sub-division of these two separate samples.

The age-integrated samples were drawn from the elderly located throughout the town. The age-segregated samples were drawn from the elderly residing in the three age-segregated complexes in Selkirk (Figure 3). These were the Parkview Manor (Plate 1), the Red River Manor (Plate 2), and the Rotary Manor (Plate 3). The three complexes contain a total of 154 apartment units.

The respondents from both the age-integrated and age-segregated environments were randomly selected from a list of addresses provided by the Manitoba Health Services Commission. This list included all residents of Selkirk who were 65 years of age and over and registered with the M.H.S.C. To meet the requirements of random sampling (Ebdon, 1977) and maintain client confidentiality of the M.H.S.C., subject selection and identification was accomplished in two steps. First, the addresses provided by the Commission were sequentially numbered. These numbers formed the basis for a random sampling design. Second, after the numbers were randomly drawn from the list, they were returned to

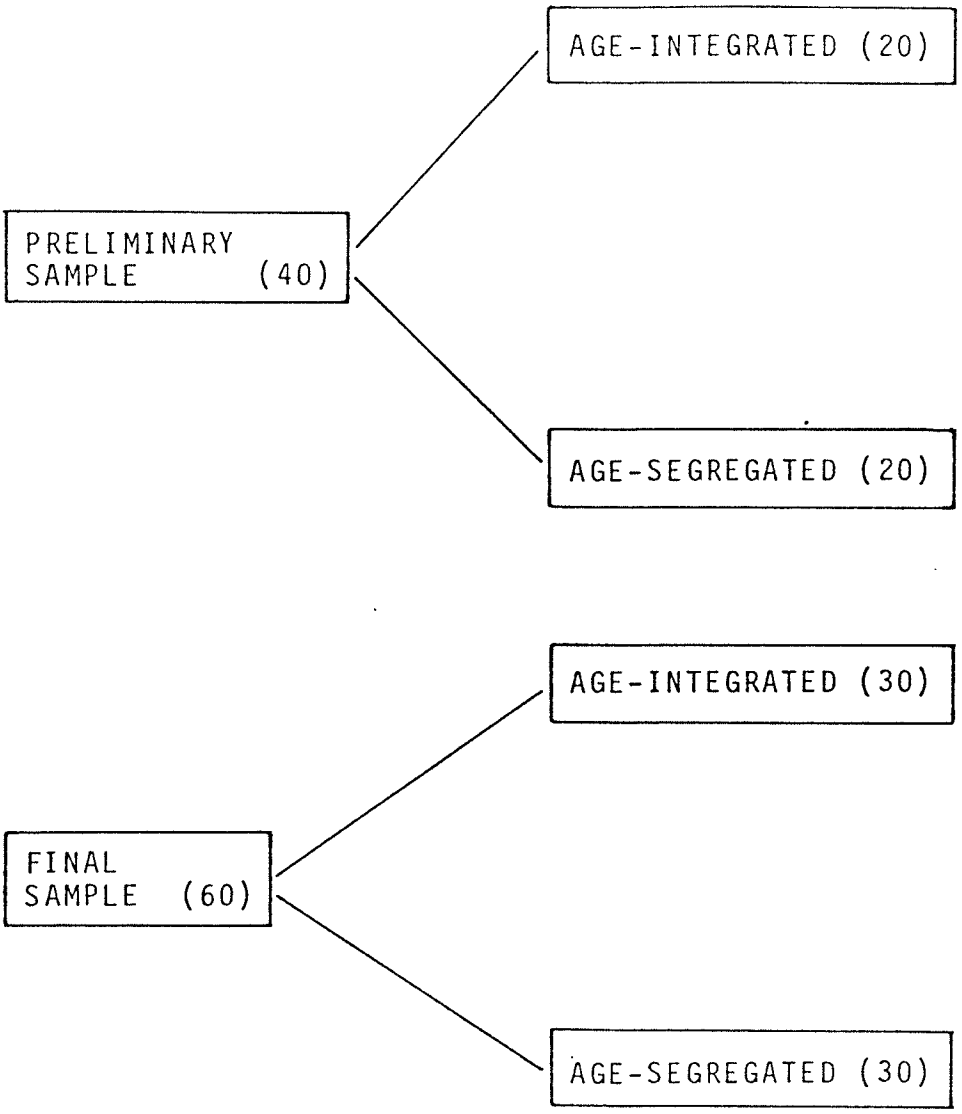

FIGURE 4 SAMPLE DESIGN

PLATE 1 PARKVIEW MANOR

PLATE 2 RED RIVER MANOR

PLATE 3 ROTARY MANOR

the Commission which then sent back the corresponding names for the addresses. Only then could the potential subjects be identified. In order to achieve a balanced representation from the three manor homes, the number of subjects drawn randomly from each home was determined by the percentage of total age-segregated residential units accounted for by the facility. Hence, each age-segregated sample could more accurately be described as a proportional stratified random sample. Once a subject was identified using this procedure, he or she was contacted by telephone to determine if he/she would participate in the study. If a subject refused or was not available, an attempt was made to contact the next subject on the list. If the list of respondents was exhausted before the required number of interviews was obtained, the M.H.S.C. was solicited for additional names. For this study, solicitation of additional names was required once in the preliminary survey. It was not required in the final survey because the researcher, anticipating a large refusal rate, initially solicited a much larger listing of subjects than was actually required.

3.4 The Questionnaire/Interview Survey

The survey was divided into two parts: (i) the preliminary survey, and (ii) final survey. The preliminary survey involved the task of collecting personal constructs

relating to leisure facilities from the elderly. The final survey requested the elderly to evaluate leisure facilities on seven-point rating scales formed from the personal constructs elicited during the preliminary survey.

Personal knowledge of the study area and consultation with local civic officials resulted in the identification of 16 leisure facilities considered to be important to the elderly. These facilities included: Selkirk Arena, Selkirk and District Curling Club, Garry Theatre, Selkirk Golf and Country Club, Selkirk Town Plaza (Mall), Royal Canadian Legion, Army, Navy & Air Force Veteran's Club, (A.N.A.F.), Church[2], Selkirk Park, Memorial Park, Indoor Swimming Pool, Robert Smith Library, High School Library, Gordon Howard Senior Centre, home of a favourite relative and home of a favourite friend. The facilities having fixed locations are shown in Figure 5. These 16 facilities formed the elements of the study and were subsequently grouped into dyads. In total, 120 different dyads of elements were identified by recording all possible combinations of elements in a matrix (Appendix I). To include all dyads in the preliminary survey, 12 different dyads were presented to each subject in order

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2. No specific church was identifed as it was recognized that there would likely be some variation among the respondents regarding their religious affiliation. Therefore, when interviewed, the respondents were asked to consider "their" church.

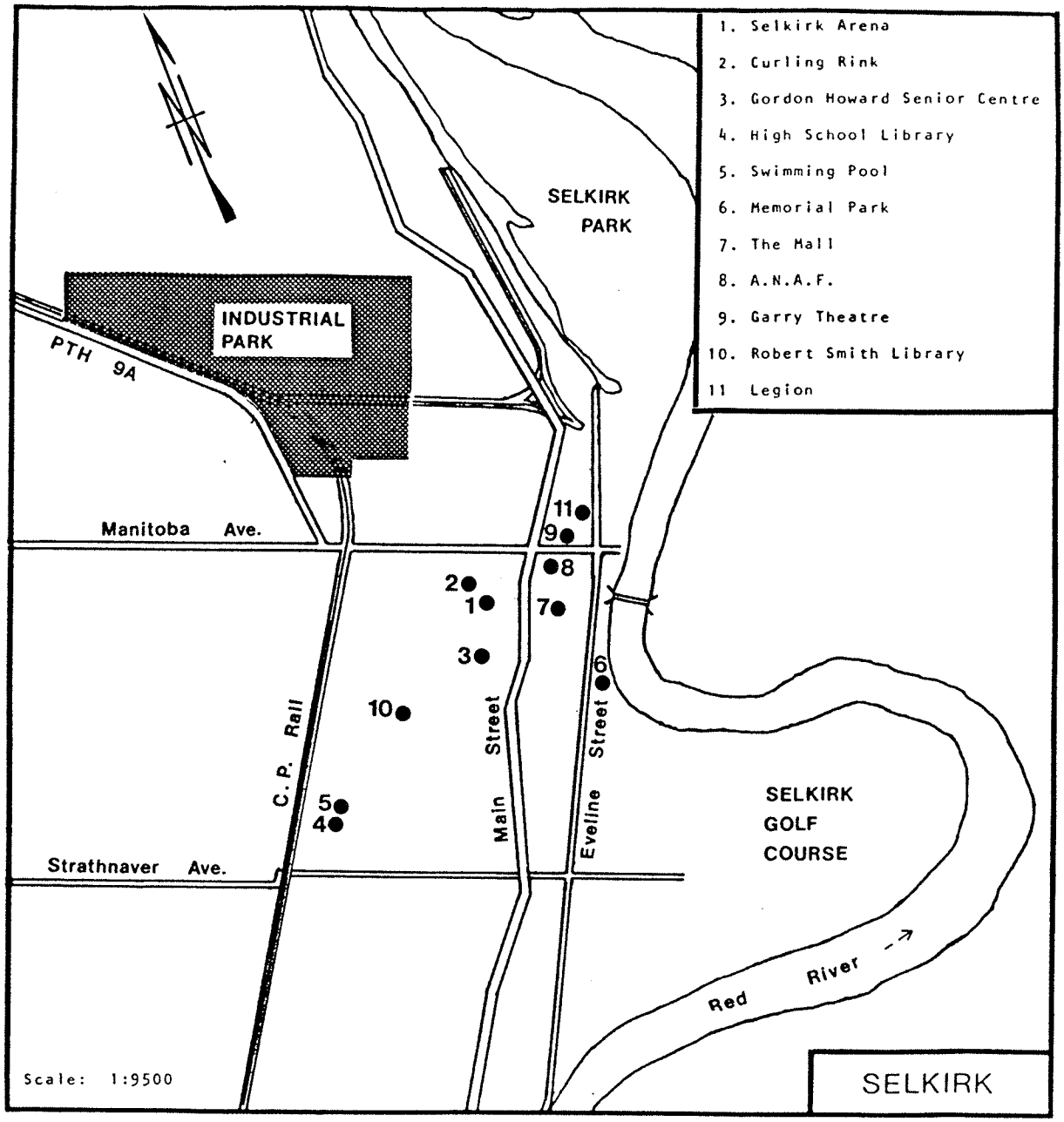

FIGURE 5 LOCAL SETTING: LEISURE FACILITIES WITH FIXED LOCATIONS

to elicit the constructs. The dyads used by each subject were determined by constructing a subject-dyad grid (Appendix II). This procedure allowed each dyad to be administered twice in each sub-sample of the preliminary survey. Once the elements of a dyad were identified, they were printed on file cards for use in the interview.

3.4.1 Preliminary Survey

The purpose of this survey was to elicit personal constructs from 20 elderly subjects in each residential environment relating to the 16 pre-determined leisure facilities. When contacted by telephone, the subject was informed of the identity of the researcher and the purpose of the project. Then the subject was asked for his/her participation. If the subject decided to cooperate, a time and date were arranged for the interview which was conducted at the subject's residence. If the respondent wished to know how his/her name was obtained, a letter of explanation was provided at the interview (Appendix III). A 25 per cent refusal rate occurred among the first 40 subjects randomly selected. An additional 15 names were drawn from the address list in order to complete the preliminary survey.

The interview consisted of two parts and was designed to be completed within a time period of 30 or 45 minutes.

In the first part of the interview, the subject was asked to provide certain demographic, socio-economic, and leisure data pertinent to the research. This information was recorded by the interviewer (Appendix III). In the second part, the subject was told, "I am interested in finding out how you personally feel about the places identified on these cards. I will present them to you in pairs. For each pair, I would like you to tell me one important way in which the two places are different from the other." The subject's answer to this question formed the emergent pole of the construct. If a meaningful answer was successfully elicited from the subject, the interviewer then asked, "what word would you use that you consider to be the opposite of your answer?" The subject's response to this question formed the contrast pole of the construct. The procedure resulted in the elicitation of a personal construct which was recorded by the interviewer (Appendix III). If the subject supplied a superficial or ambiguous answer to the first question, the interviewer probed for more meaningful responses. This was done following the procedure recommended by Fransella and Bannister (1977:20). For example, if the subject responded, "This one is better than that one," the interviewer then asked, "Can you tell me one important way that makes it better than the other one?" This procedure was not always successful and some dyads failed to obtain constructs.

The total set of elicited constructs and response frequencies are given in Table 1. Two constructs disclosed very high response frequencies. These were "valuable/worthless" (42) and "socializing/personal" (38). Other constructs reporting high response frequencies included "familiar/strange" (28), "active participation/passive participation" (25), and "quiet/noisy" (18). Moderately high response frequencies were expressed by the constructs "ability/inability" (15), "expensive/cheap" (15), "variety/little choice" (15), "age restrictions/no age restrictions" (12), and "distant/close" (12). From the "master" list of constructs, a reduced set consisting of 25 constructs was determined. These included constructs which had response frequencies greater than 10 from both preliminary samples. Also, any constructs which were considered to have essentially the same meaning were grouped together using verbal labels fashioned by the researcher and then included in the reduced set. For example, the constructs "valuable/worthless", "meaningful/insignificant", and "useful/useless" were grouped under the verbal labels "not important/very important". This reduction procedure has been used in other studies (Lieber, 1978; Lundeen, 1972). Although it was recognized that personal bias could be introduced

TABLE 1 CONSTRUCT FREQUENCIES

CONSTRUCT	FREQUENCY	CONSTRUCT	FREQUENCY
Educational/Non-educational	4		
Entertaining/Non-entertaining	5	Relaxation/Chore	11
Familiar/Strange	28	Favourite/non-favourite	1
Ability/Inability	15	Spacious/Crowded	3
Expensive/Cheap	15	Competitive/Recreational	1
Quiet/Noisy	18	Material Gain/Spiritual Gain	7
Age Restricted/no Age Restrictions	12	Satisfying/Unrewarding	2
Socializing/Personal	38	Physical Need/Spiritual Fulfillment	4
Important/Insignificant	8	Tasteful/Tasteless	2
Valuable/Worthless	42	Youth/Elderly	2
Useful/Useless	20	Specific Recreation/General Recreation	1
Accessible/Not accessible	11	Love/Friendship	1
Educational/Frivolous	4	Companion Needed/No Companion Needed	2
Variety/Little Choice	15	Activities/No Activities	1
Entertaining/Boring	6	Beneficial/No benefit	6
Essential/Frivolous	8	Outdoors/Indoors	4
Close/Distant	12	Inconvenient/Convenient	2
Active Participation/Passive Participant	25	Good/Bad	2
Personal/Impersonal	6	Religious Value/No Religious Value	3
Educational/Entertaining	5	Relaxing/Hectic	2
Unimportant/Serious	3	Formal/Informal	3
Interesting/Indifference	6	High Quality Entertainment/Low Quality Entertainment	2
Youthful/Mature	2	Well organized/Irregular	1
Elderly Participation/Youth Participation	1	Clean/Dirty	2
Meaningful/Insignificant	21	Solemn/Happy	1
Educational/Recreation	5	Sociable/Impersonal	2
Necessity/Recreational	9	Bustling/Peaceful	1
Always Available/Limited Availability	3	Comfortable/Incomfortable	1
Recreational/Non-Recreational	4		
Like/Dislike	3		
Attractive/Unattractive	4		
Mental/Physical	4		

(Lundeen, 1972:29), the reduction of the total construct set was necessary in order to make the data collection of the final survey manageable. The reduced set of constructs (Table 2) thus identifies the evaluative criteria used by the elderly to assess leisure facilities. The eight most frequently visited facilities[3] were identified from the data collected in the first part of the interview. These were: Selkirk Town Plaza (Mall), Home of Favourite Relative, Home of Favourite Friend, Church, Gordon Howard Senior Centre, Selkirk Park, Legion, and the Curling Rink. Only these facilities were used in the final survey as it was considered that asking subjects to assess 16 elements in the final survey would be much too onerous a task.

3.4.2 Final Survey

The purpose of the final survey was to have 30 subjects from each of the residential environments provide their assessments of major leisure facilities in the study area. This was achieved by requiring them to assess each of the selected eight facilities on 25 bipolar adjectival rating scales formed from the 25 personal constructs identified in the preliminary survey. As in the preliminary

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3. The most frequently visited facilities were determined by summing the coded visitation rates for each facility given by the respondents in the preliminary survey.

TABLE 2 CONSTRUCTS FORMING THE EVALUATIVE CRITERIA

1.	not important/very important
2.	group oriented/individual oriented
3.	unfamiliar/very familiar
4.	a place to watch activities/a place to participate in activities
5.	noisy/quiet
6.	cheap/expensive
7.	distant/close
8.	uninteresting/entertaining
9.	limited choice of activities/variety of activities
10.	for young people/for elderly people
11.	for a specific age group/no age restrictions
12.	limited availability/always available
13.	physical activity/mental activity
14.	not friendly/very friendly
15.	informal place/formal place
16.	confining/spacious
17.	inconvenient/very convenient
18.	dirty/clean
19.	hectic/relaxing
20.	dreary place/cheerful place
21.	uncomfortable/very comfortable
22.	aggravating/peaceful
23.	companion needed/no companion needed
24.	obligated to go/not obligated to go
25.	unable to participate/ability to participate

survey, subjects were contacted by telephone and interviews were arranged. The response rate for this survey differed from that of the preliminary survey. Of the initial list of 60 subjects selected, approximately 46 per cent (28 people) refused to participate. In total 98 subjects had to be contacted in order to complete the required 60 interviews for the final survey. The first part of the interview was used to elicit demographic, socio-economic, and leisure data from the subject (Appendix IV). In the second part of the interview, the subject was presented with a package of eight sheets of the questionnaire. Each sheet was labelled with one of the leisure facilities and listed 25 seven-point bipolar adjectival rating scales formed from the reduced set of personal constructs. The seven-point rating scales were arranged vertically on each sheet of the questionnaire (Appendix IV).

Each subject was given a thorough explanation on how to complete the scales. Where necessary, the interviewer worked through the first page with the subject to ensure that he/she understood the procedure. Once this was achieved, the interviewer said "I will leave this with you to complete. Please do not feel that you have to complete it in one sitting. I will return in ten days to pick up the completed questionnaire." The data thus collected by the questionnaire

formed the basis for the analysis.

Once all[4] the questionnaires were collected, the scales were re-ordered so that the pole which creates a negative image, for example, "dirty", appeared on the left and the pole which creates a positive image, for example, "clean", appeared on the right. The ordering of the scales in this fashion was not always possible because some of the scales had verbal labels which could not be construed as negative or positive. Numerical values were then assigned to each point on the scales. The point on the extreme left (the strongest negative position) received a value of 1. The point on the extreme right, or most positive position, received a value of 7. Thus, the value 4 indicated a neutral opinion. The scores thus obtained from these scales were used to calculate the mean and standard deviation of each rating scale in each facility in both sub-samples of the final survey. This information is presented in tabular form (Appendix V). Aggregating the data in this manner facilitated the use of the test

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4. Two questionnaires from the age-integrated sample and five questionnaires from the age-segregated sample were discarded because the respondents failed to correctly complete the rating scales. Therefore, the analysis is based on data drawn from 53 questionnaires.

of means to compare the evaluations reported by the age-integrated and age-segregated elderly.

In order to make the analysis and interpretation of the results more meaningful, the rating scales were intuitively grouped into four categories by the researcher (Table 3). These were: Accessibility, Social Environment, Utility, and Functional Diversity. The category, "Accessibility" includes four rating scales that define the assessments of the elderly regarding difficulties they experience in undertaking visits to the facilities. "Social Environment" includes eleven rating scales defining the elderly's evaluations regarding the social characteristics of the leisure facilities. The personal value or importance that the elderly attach to a facility is conceptualized by six rating scales listed under "Utility". The final category, "Functional Diversity", includes four rating scales which define the images held by the elderly regarding the uses of the leisure facilities. The differences between the age-integrated and age-segregated elderly are subsequently discussed in terms of these categories.

3.5 Summary

Personal construct theory and repertory grid methodology are discussed and their application to geographic problems involving the measurement of spatial cognition is

TABLE 3 RATING SCALE CATEGORIES

Categories	Rating Scales
I. Accessibility	distant / close limited availability / always available inconvenient / very convenient companion needed / no companion needed
II. Social Environment	noisy / quiet not friendly / very friendly informal / very formal confining / spacious dirty / clean hectic / relaxing dreary place / cheerful place aggravating / peaceful uncomfortable / very comfortable for a specific age / no age restrictions for young people / for elderly people
III. Utility	not important / very important unfamiliar / very familiar uninteresting / entertaining obligated to go / not obligated to go unable to participate / ability to participate expensive / cheap
IV. Functional Diversity	group oriented / individual oriented a place to watch activities / a place to participate in activities limited choice of activities / a variety of activities physical activity / mental activity

demonstrated. The thesis employs repertory grid methodology to measure the evaluation of leisure facilities by the elderly in age-integrated and age-segregated residential environments. This is accomplished by drawing two separate samples of the elderly living in Selkirk, a small urban community in the Province of Manitoba. A preliminary sample is used to elicit constructs on 16 pre-determined elements (leisure facilities) chosen to represent the leisure environments of the elderly. A second sample (final survey) evaluates the eight most frequently visited leisure facilities by members of the preliminary sample on a standardized set of 25 constructs expressed as seven-point bipolar adjectival rating scales. The results of the rating scales are subsequently subjected to statistical analysis. The twenty-five rating scales are conveniently grouped into four categories by the researcher. These categories generally reflect the nature of the evaluative criteria used by the elderly to assess leisure facilities. The differences in the leisure facility preferences of the age-integrated and age-segregated elderly are subsequently discussed in terms of these categories.

CHAPTER IV

THE ANALYSIS

The data analysis is presented in two parts. The first part of the chapter offers a descriptive analysis of selected demographic, socio-economic, and leisure characteristics of the age-integrated and age-segregated samples employed in the final survey. The second part of the chapter discusses the results of an inferential statistical test of the scores on the rating scales of the two samples.

4.1 Characteristics of the Age-Integrated and Age-Segregated Samples

The data collected in part one of the final survey are aggregated into histograms (Figures 6 - 12). These data consist of the following sample characteristics: age, sex, marital status, length of residence, vehicle ownership, health, and the number of visits in one year to the 16 selected leisure facilities. For each of these characteristics, the data are separately aggregated for the age-integrated and age-segregated elderly.

Figure 6 discloses that the age-integrated elderly, with a mean age of 72.4 years, are generally younger than the age-segregated elderly, who register a mean age of 75.4

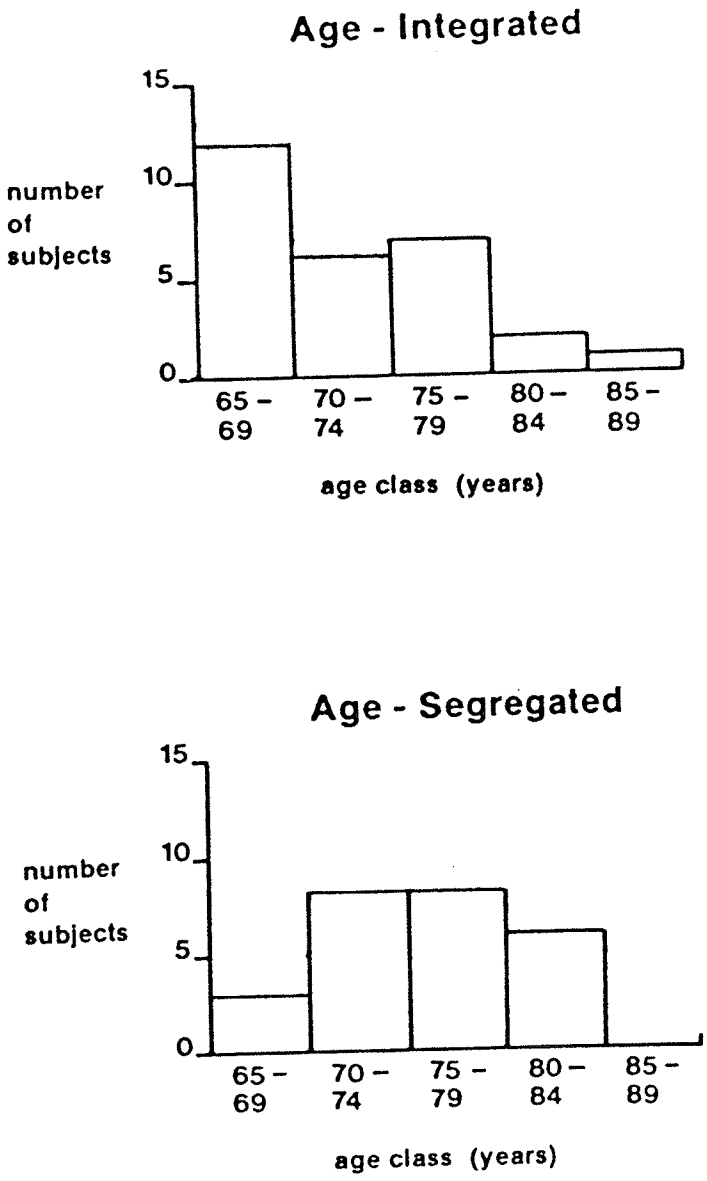
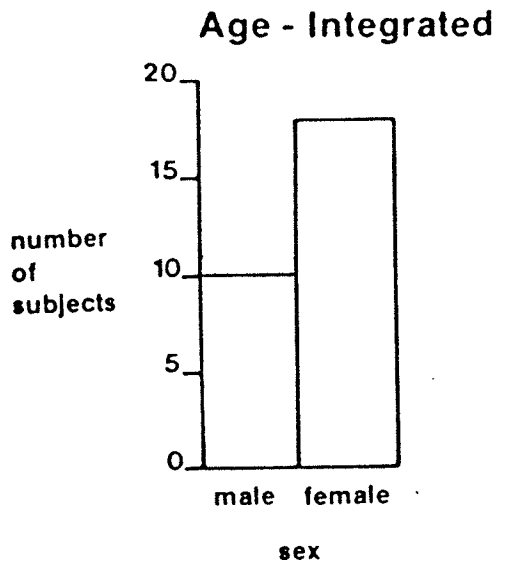


FIGURE 6 AGE COMPOSITION

years. However, when the percentage of the elderly contained within each age class is calculated, more precise information concerning the age difference between the sub-samples is revealed. For example, 89.3 per cent of the age-integrated elderly are less than 80 years of age, while 42.8 per cent are within the 65 - 69 year age class. In comparison, 76.0 per cent of the age-segregated elderly are less than 80 years of age and only 12.0 per cent of this group are members of the 65 - 69 year age class.

Both sub-samples are characterized by similar sex ratios (Figure 7). The age-integrated sample consists of 10 males (35.7 per cent of the total subjects) and 18 females (64.3 per cent of the total subjects) while the age-segregated sample consists of 10 males (40.0 per cent of the total subjects) and 15 females (60.0 per cent of the total subjects). These ratios would appear to be consistent with the generally held view that women tend to live longer than their male counterparts. On the other hand, this result could be attributed to other factors such as the sampling procedure. The marital status data (Figure 8) indicate a greater number of single-person households among the age-segregated elderly. Sixty per cent of the age-segregated elderly are widowed and an additional 16.0 per cent are single. On the other hand, 46.4 per cent of the age-integrated elderly are



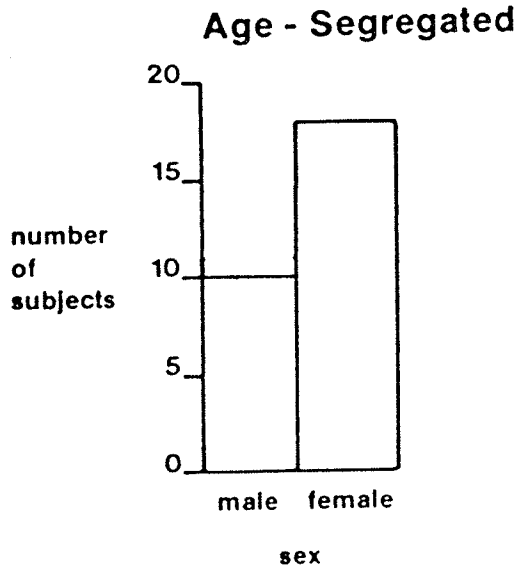
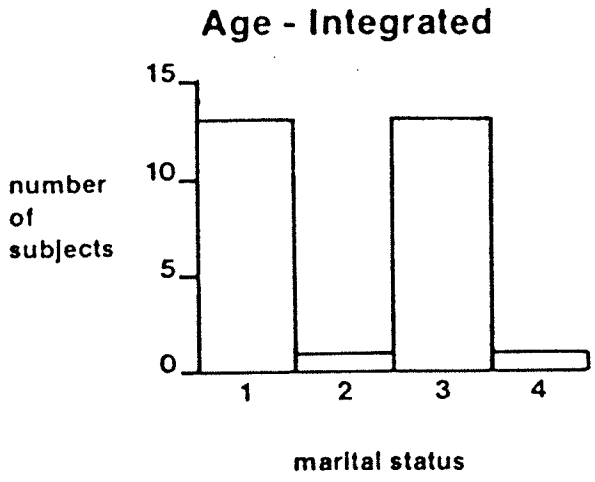


FIGURE 7 SEX COMPOSITION



1. married
2. single
3. widowed
4. divorced

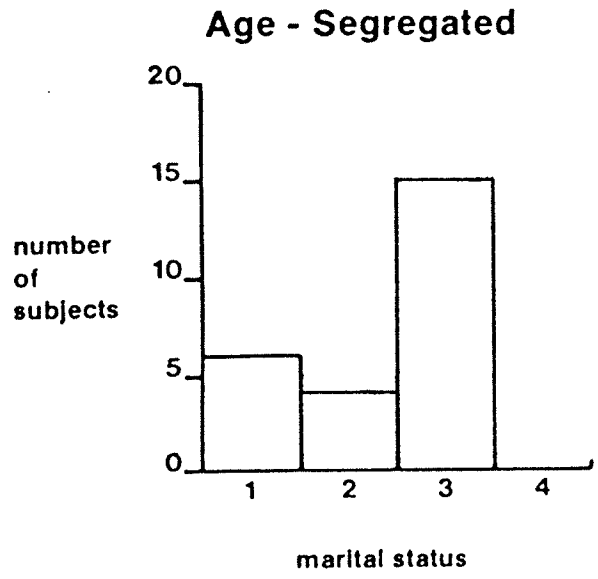
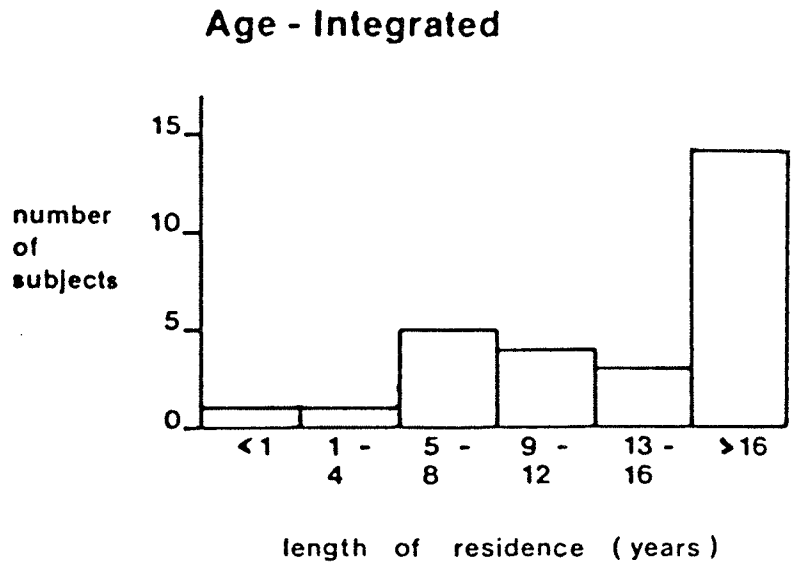


FIGURE 8 MARITAL STATUS

widowed and only 3.6 per cent are single. Married subjects in the age-integrated sample (46.4 per cent of the total subjects) almost double those in the age-segregated sample (24.0 per cent of the total subjects). The marital status statistics are not surprising since one might expect to find a greater number of widowed and single elderly in the age-segregated facilities because these provide the opportunity for social contacts with peers, thus helping to reduce feelings of loneliness.

It is interesting to note that the sample characteristics regarding age, sex, and marital status, are congruent with the findings of previous research. For example, the Manitoba government report, Aging in Manitoba (1971) and Gutman's (1980) study indicate that age-segregated housing is characterized by higher proportions of females than males and that retirement homes have a greater number of single or widowed people. In addition, the same studies indicate that the residents of retirement homes tend to be older than the elderly residing in the age-integrated environment.

To a certain extent, the histograms concerning length of residence at the current address (Figure 9) reflect the ages of the three manor homes. Most of the age-segregated elderly (64.0 per cent of the total subjects) report a term at their current address of 4 years or less. None indicate



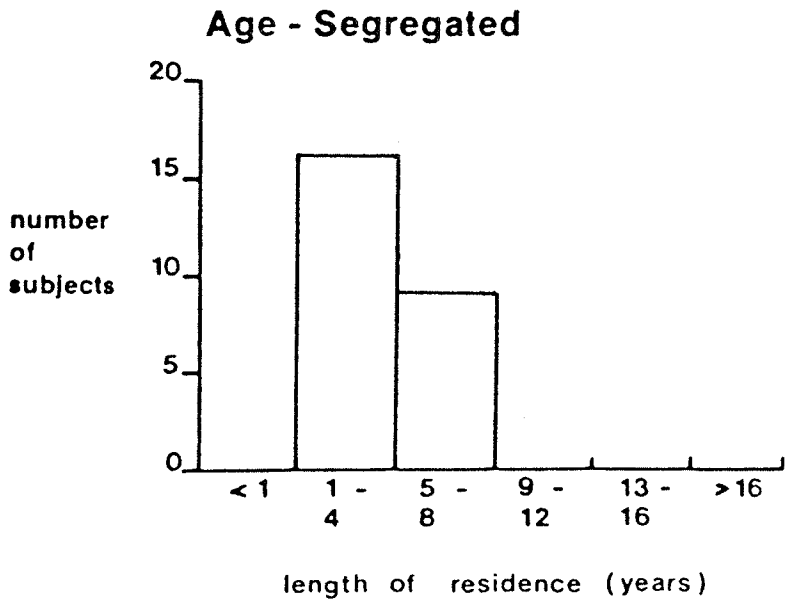
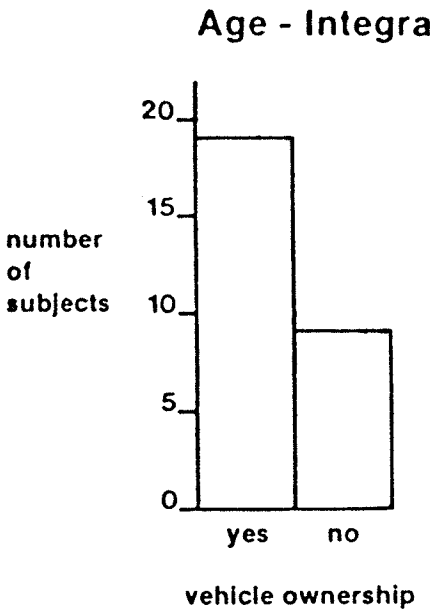


FIGURE 9 LENGTH OF RESIDENCE

a length of residence of longer than 8 years. These results can be largely attributed to the age of the facility in which the subjects reside. The two larger facilities, Parkview Manor and Red River Manor, from which most of the age-segregated subjects are drawn, have been in operation less than 8 years, thus imposing a limit upon the maximum length of residence. With respect to the age-integrated elderly, a relatively wide variation in the length of residence is disclosed. In addition, 50 per cent of the age-integrated elderly have lived at their present location for more than 16 years.

The data on vehicle ownership (Figure 10) indicate a substantial difference between the two sub-samples. Approximately 68 per cent of the age-integrated elderly report that they own a vehicle. Conversely, 76.0 per cent of the age-segregated elderly indicate that they do not possess a vehicle. The reasons for this large difference are not clear. However, one might expect driving ability to decrease with age. Since the age-segregated elderly report generally higher ages than the age-integrated elderly (Figure 6), this might explain the lower frequency of vehicle ownership among the age-segregated elderly. The need of a vehicle for maintaining social contacts might also explain the higher frequency of ownership among the age-integrated elderly since they reside



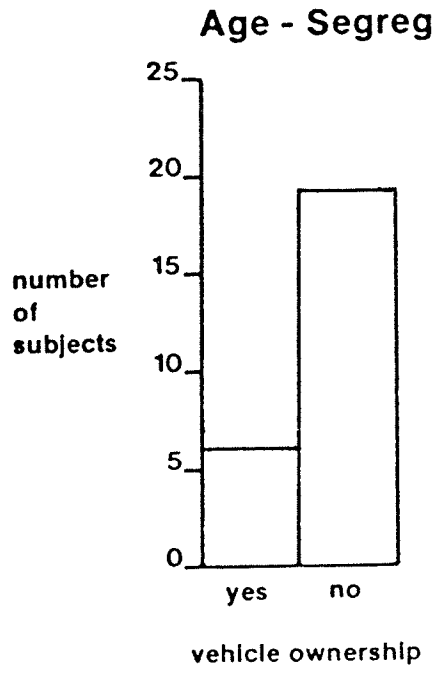


FIGURE 10 VEHICLE OWNERSHIP

in a more isolated environment.

The age-integrated elderly generally have a more positive opinion of their health (Figure 11). For instance, 67.9 per cent report good health and 32.1 per cent report fair health. None report poor health. On the other hand, only 32.0 per cent of the age-segregated elderly report good health. Since physical health deteriorates with age, these results might again be partly explained in light of the age composition of the two samples. Gutman's (1980) investigation of the elderly in British Columbia reported similar findings. In her study, 74.7 per cent of the "living at home" elderly (age-integrated) reported good or excellent health while only 55 per cent of the elderly living in retirement home settings considered their health to be satisfactory.

The number of visits[1] in one year to the 16 selected leisure facilities in the study area (Figure 12) exhibit similar patterns for both sub-samples. However, while both sub-samples report visits to 14 facilities, the age-segregated elderly generally disclose slightly higher

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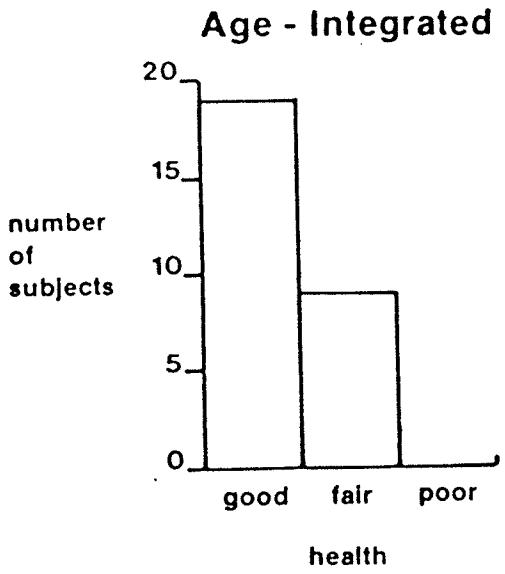
1. The number of visits made to a facility was assigned a number code in the questionnaire (Appendix IV). The figures used in the discussion are the sums of the coded entries for each facility. Although these figures do not indicate the "true" number of visits made to the facility, they are useful for comparison purposes.



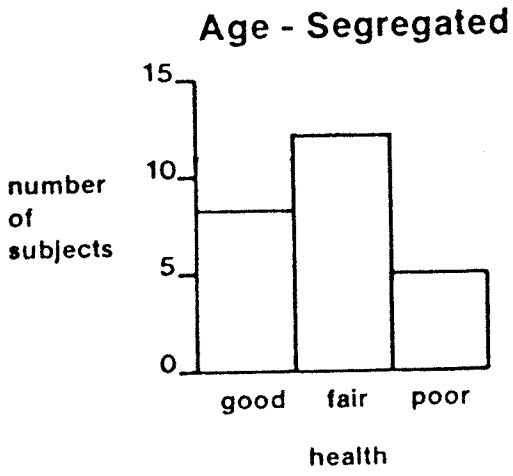
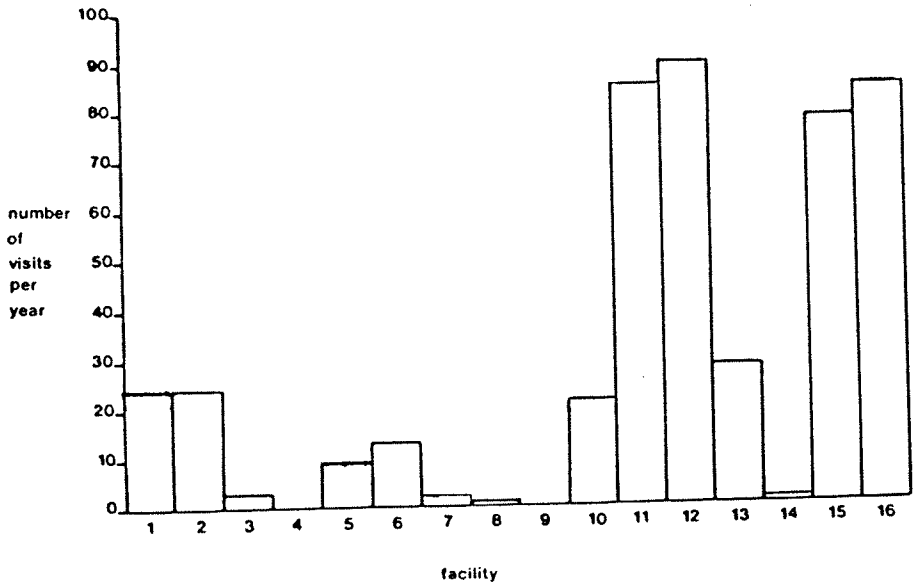


FIGURE 11 HEALTH ASSESSMENT

Age - Integrated



1 Arena
2 Curling Rink
3 Golf Course
4 Swimming Pool
5 Legion
6 A N A F
7 Theatre
8 Robert Smith Library
9 High School Library
10 Gordon Howard Centre
11 Church
12 Mall
13 Selkirk Park
14 Memorial Park
15 Home of favorite friend
16 Home of favorite relative

Age - Segregated

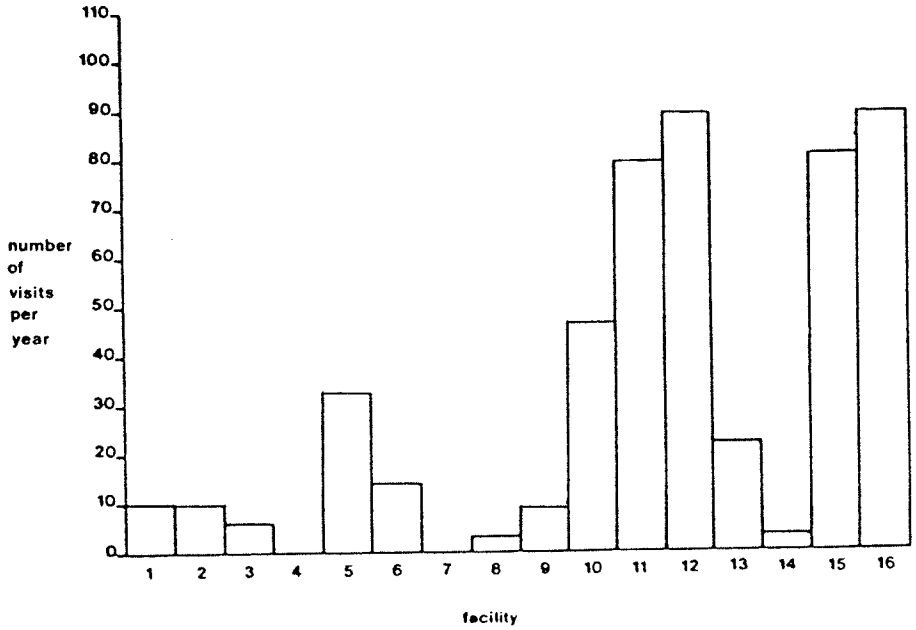


FIGURE 12 VISITS TO FACILITIES

visitation rates. This result conforms to the findings of other studies which indicate higher participation rates by the age-segregated elderly (Morgan and Godbey, 1978; Sherman, 1974). The most frequently visited facility by both sub-samples is the Mall, followed closely by the homes of favourite relatives, Church, and the homes of favourite friends. Substantial differences between the two sub-samples occur with respect to the Legion, 32 visits are reported by the age-segregated elderly while the age-integrated elderly report 9 visits. Forty-six visits to the Gordon Howard Senior Centre are reported by the age-segregated elderly while only 21 visits are reported by the age-integrated elderly. One can only speculate upon the reasons for this wide difference between the sub-samples on these facilities. It could be that the age-segregated elderly, living in an environment that allows greater social contact, receive more information regarding social events that occur at these facilities. The difference in attendance at these facilities may also be partly explained by the marital status characteristics and age composition of the two sub-samples. The age-integrated elderly, characterized by a larger proportion of married people, may not be as strongly attracted to the events and activities offered at the Legion as might be the age-segregated elderly, who are

characterized by a large proportion of single and widowed individuals. Regarding the Gordon Howard Senior Centre, the younger age-integrated elderly may not perceive themselves as being "senior citizens" and therefore may avoid this facility for fear of being labelled "elderly". The denial of "being old" is apparently quite common among the elderly (Linn and Hunter, 1979).

The demographic, socio-economic, and leisure data collected in the preliminary survey are also aggregated and presented in histograms (Appendix VI). It is notable that the histograms of the preliminary survey are generally similar to those of the final survey thus inferring that the respondents in both surveys are members of the same population. This is a significant finding, in terms of using repertory grid methodology (Smith and Raths, 1980).

4.2 Analysis of the Rating Scales

For each facility, the mean scores of the rating scales of the age-integrated and age-segregated samples are illustrated on graphs (Figures 13 - 20). The rating scales on the graphs have been ordered so that, as far as possible, the verbal label on the right-side expresses a favourable assessment of the leisure facility. Therefore, the higher a mean score, then the more favourable is the assessment.

Generally, the graphs indicate that the sub-samples register broadly similar patterns of responses on the rating scales. In most cases, the facilities are rated favourably

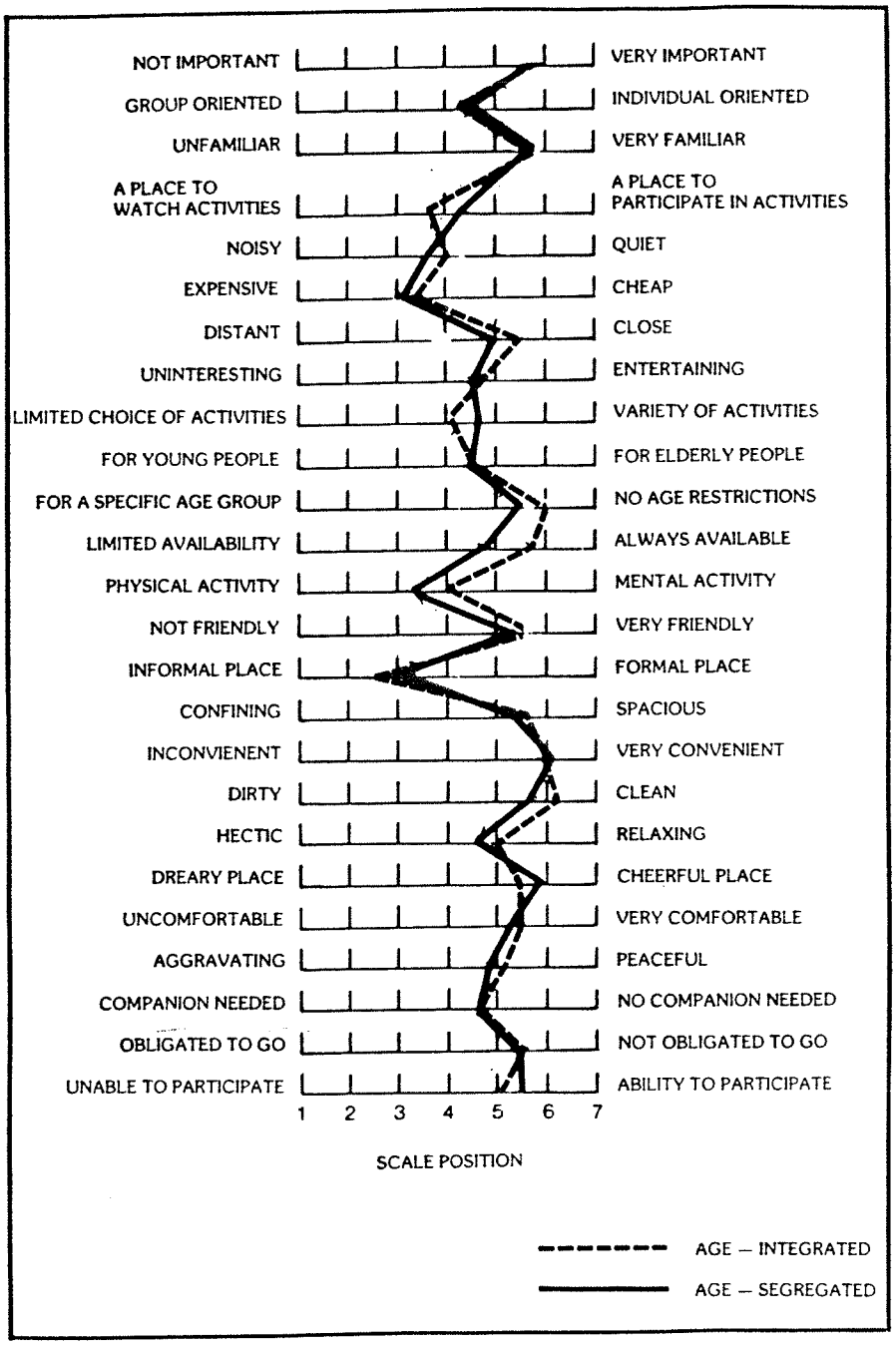


FIGURE 13 MEAN SCORES ON THE RATING SCALES: THE MALL

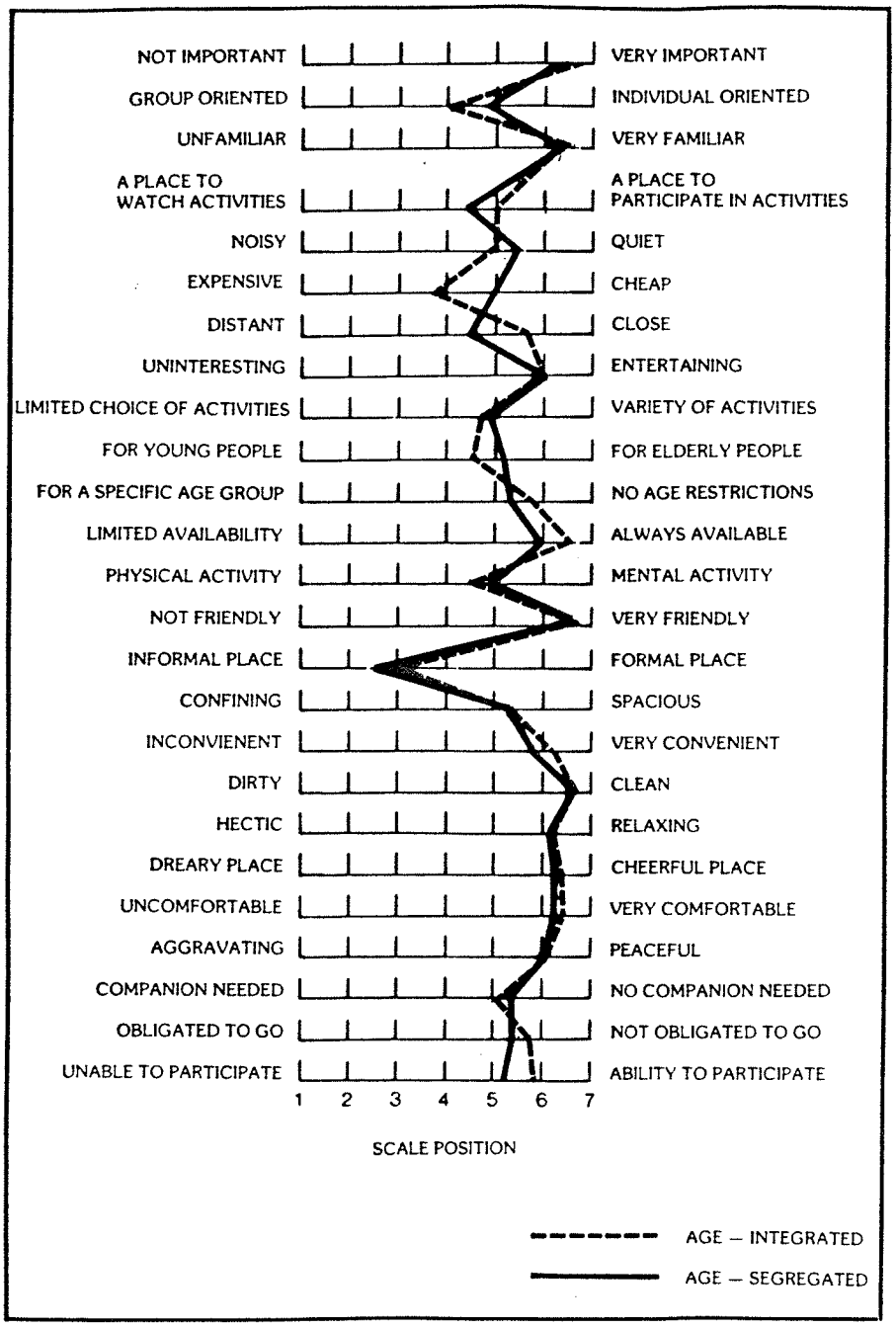


FIGURE 14 MEAN SCORES ON THE RATING SCALES: HOME OF FAVOURITE RELATIVE

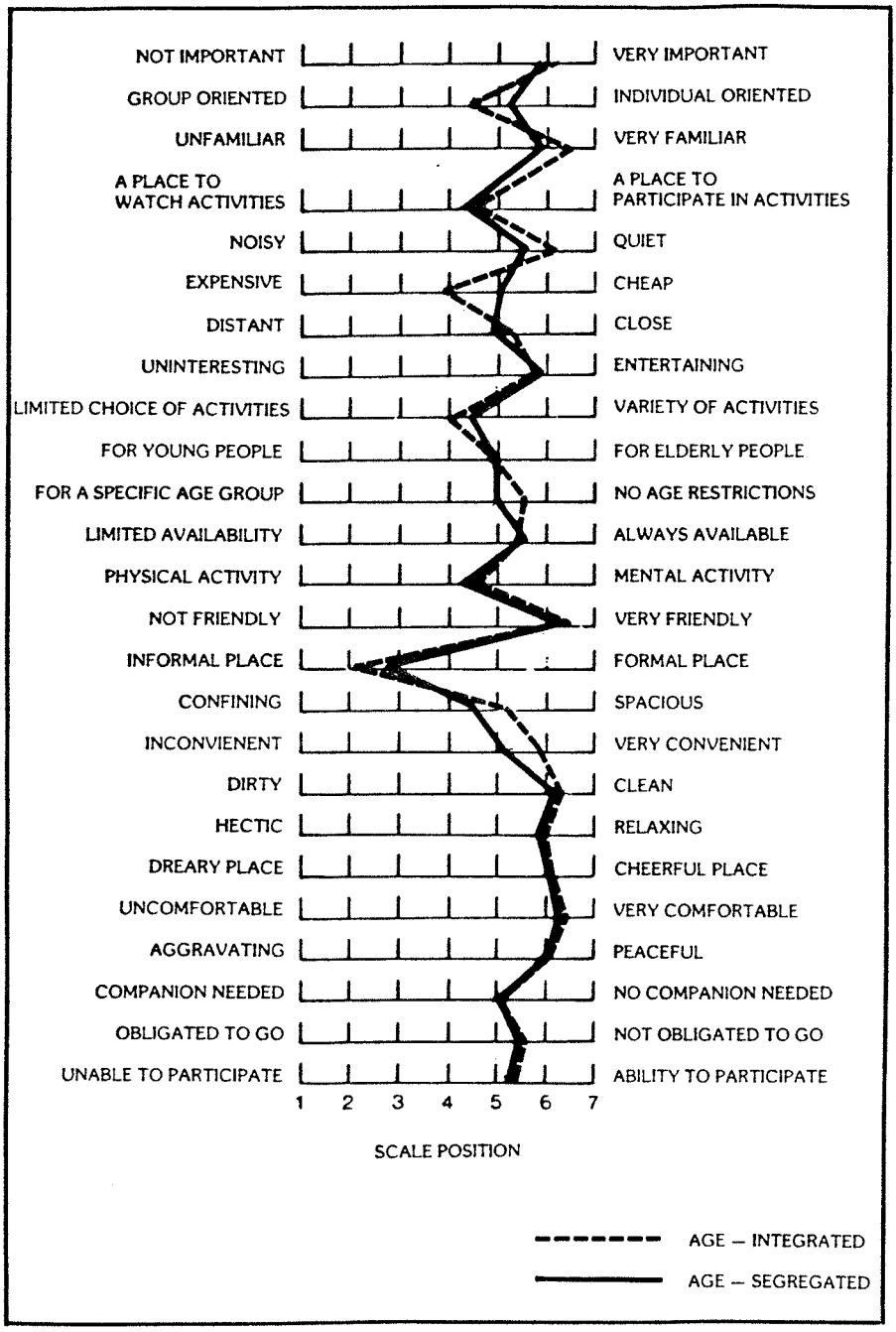


FIGURE 15 MEAN SCORES ON THE RATING SCALES: HOME OF FAVOURITE FRIEND

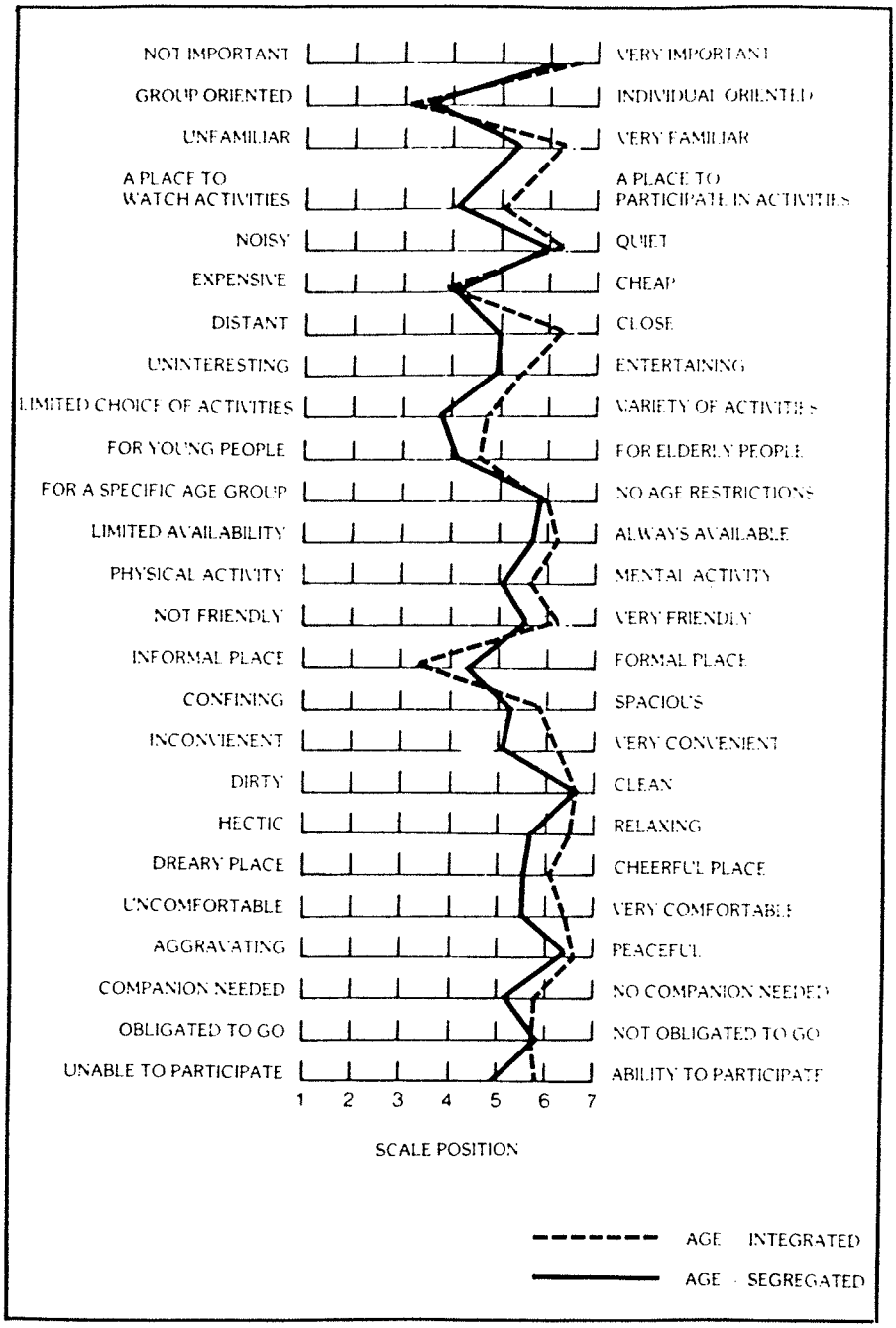


FIGURE 16 MEAN SCORES ON THE RATING SCALES: CHURCH

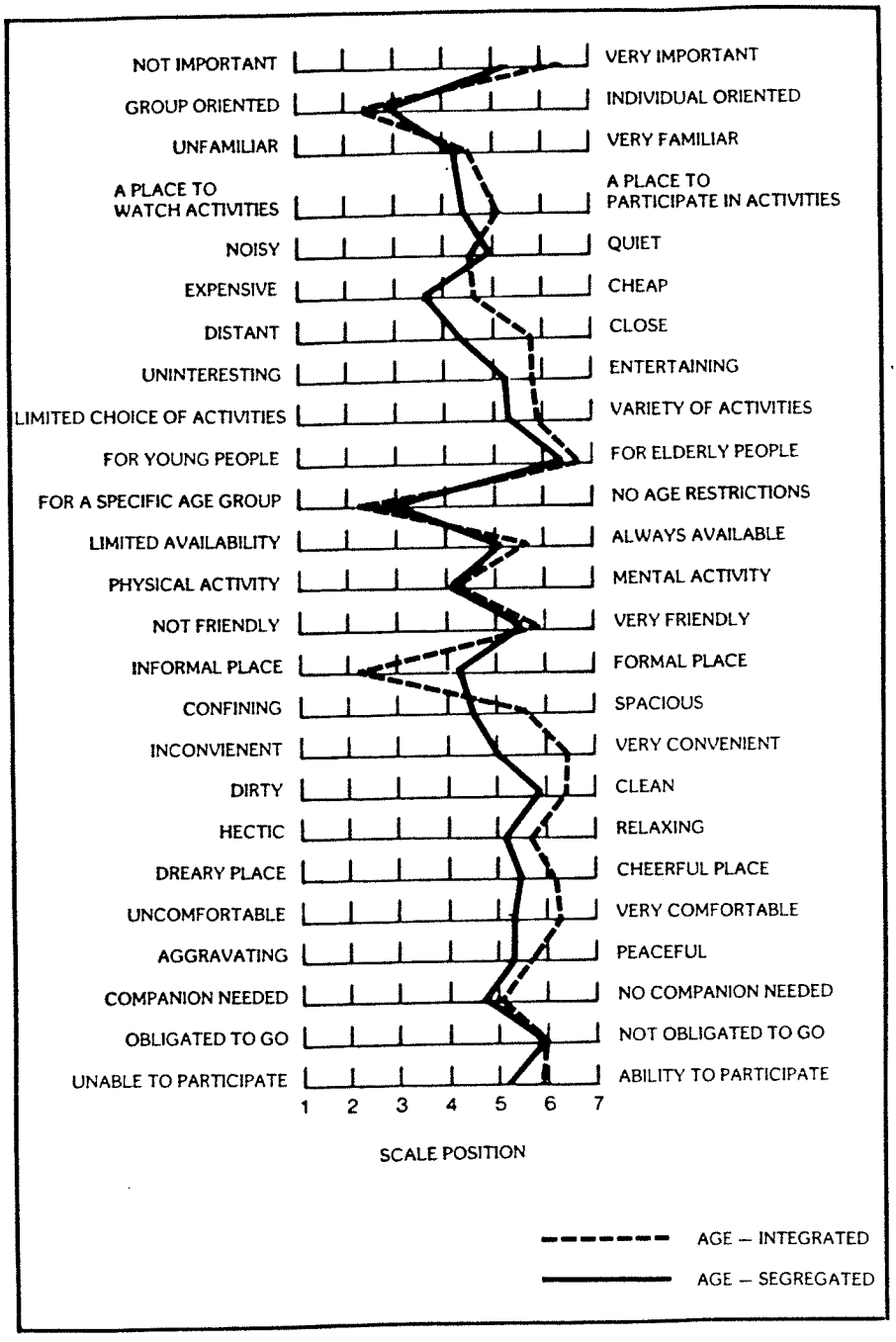


FIGURE 17 MEAN SCORES ON THE RATING SCALES: GORDON HOWARD SENIOR CENTRE

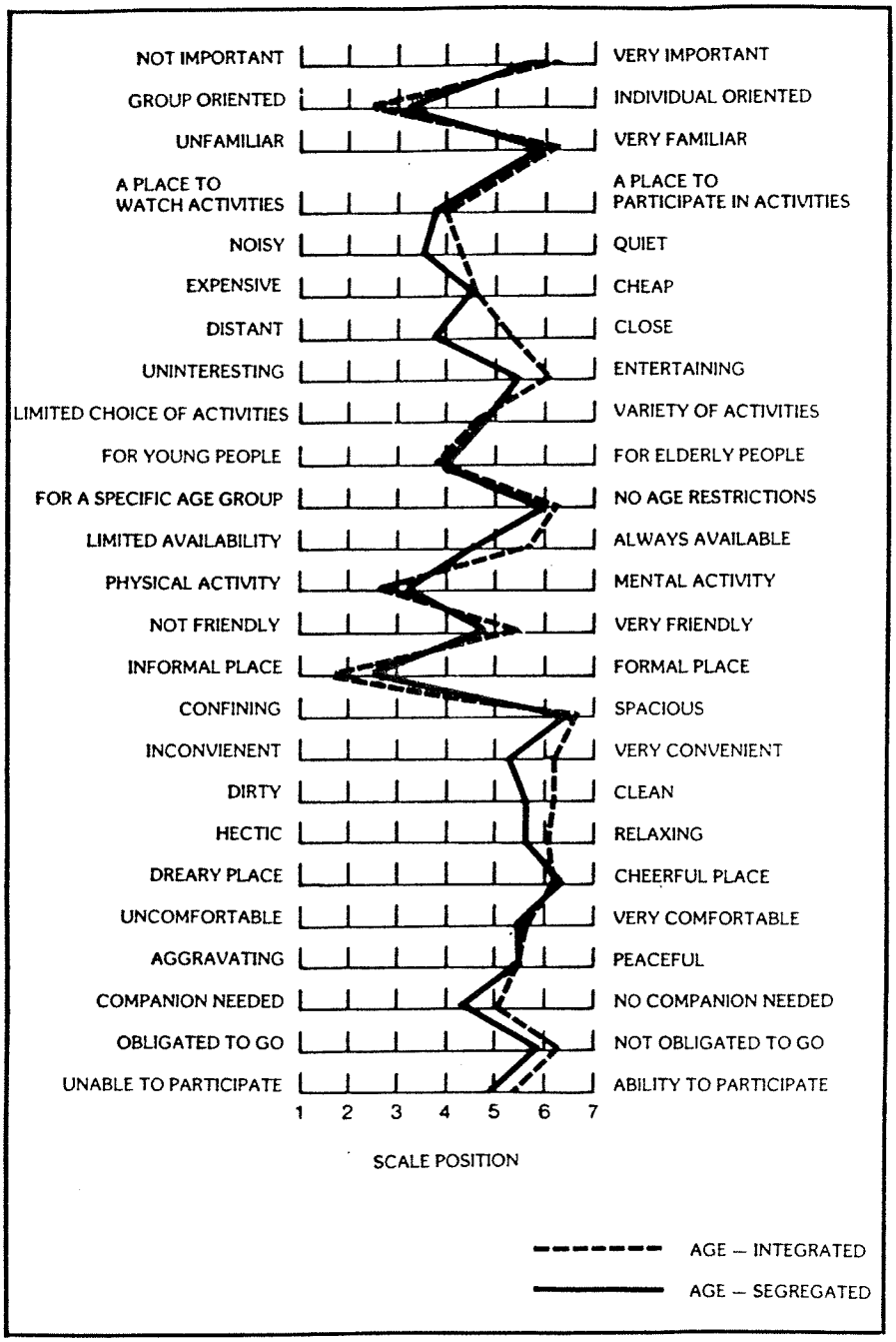


FIGURE 18 MEAN SCORES ON THE RATING SCALES: SELKIRK PARK

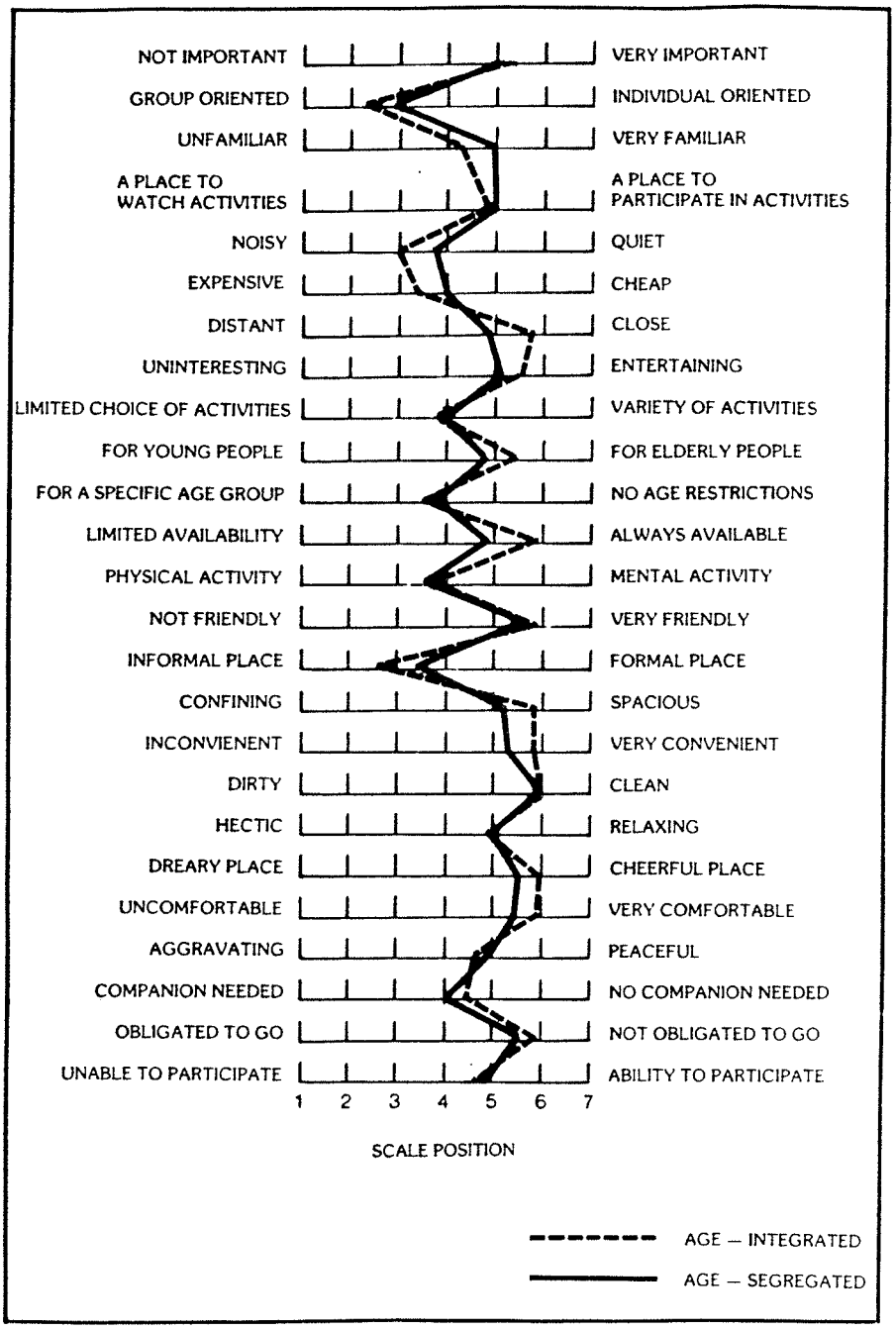


FIGURE 19 MEAN SCORES ON THE RATING SCALES: CANADIAN LEGION

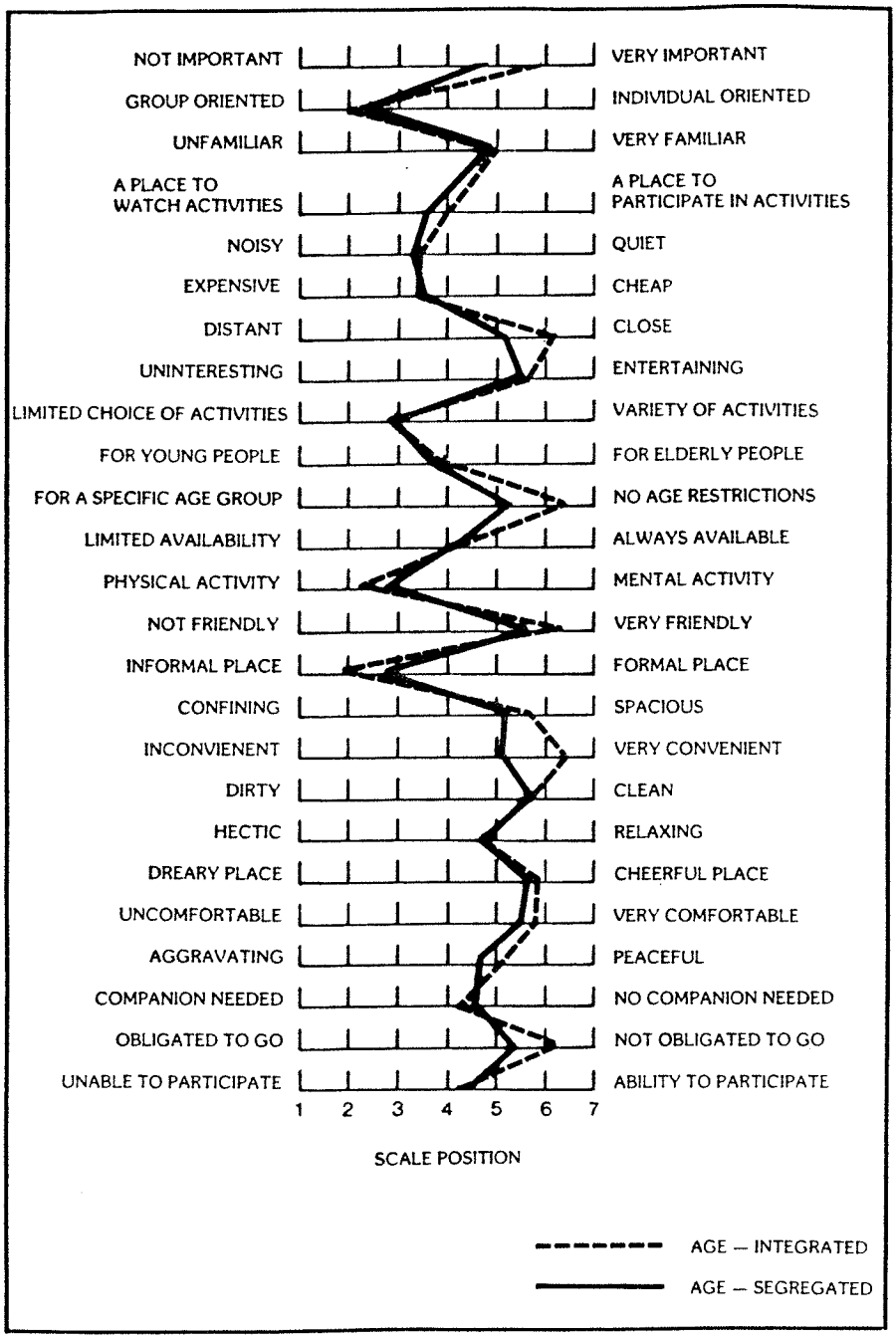


FIGURE 20 MEAN SCORES ON THE RATING SCALES: CURLING RINK

by both sub-samples as most of the mean scores plotted on the graphs have a value greater than 4. There are, however, exceptions to this pattern. For example, the rating scale "group oriented/individual oriented" reveals mean values less than 4 on five facilities (i.e. Church, Gordon Howard Senior Centre, Selkirk Park, Canadian Legion, Curling Rink). In addition, the rating scale "physical activity/mental activity" registers a mean value less than 4 on three facilities (i.e. Selkirk Park, Canadian Legion, Curling Rink) and the rating scale "for a specific age/no age restrictions" records very low mean values on the Gordon Howard Senior Centre and the Canadian Legion. The rating scale "informal place/formal place" discloses mean values less than 4 on six facilities, these being the Mall, Home of a Favourite Relative, Home of a Favourite Friend, Selkirk Park, Canadian Legion, and Curling Rink. Moreover, the age-integrated elderly report a mean value less than 4 on the Church and Gordon Howard Senior Centre. These rating scales, however, have verbal labels which cannot be construed as negative or positive. Therefore, the lower mean values registered on the scales may not necessarily indicate less favourable assessments of the facilities. The rating scale "expensive/cheap" also yields mean values less than 4 on three facilities (i.e. Mall, Canadian Legion,

Curling Rink). This rating scale appears to have particular significance for the age-integrated elderly because, in addition to the above facilities, the age-integrated elderly also report lower mean values than the age-segregated elderly on the Home of a Favourite Relative and Home of a Favourite Friend. It may be that the age-integrated elderly have less disposable income because of the higher costs associated with their residential environment and higher frequency of vehicle ownership. Overall, the graphs indicate that the age-integrated elderly disclose slightly higher mean scores on the rating scales, thus generally indicating more favourable assessments of the leisure facilities.

For each facility, a test of significance of differences between pairs of mean scores of each sub-sample on the rating scales is conducted. The Student's t-test for small-testing is employed for this purpose because it allows researchers to test for the significance of the difference between the means calculated from two independent random samples[1] (Freund, 1973: 275-282). The results of the t-test

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1. In order for the small sample t-test to be valid, the samples used in the testing must come from populations which have equal variances. To satisfy this condition a test of the equality of the variances of the rating scales is conducted by computing an F-statistic. This test is based on the magnitude of the ratio between two sample standard deviations and is represented by the F-ratio (Freund, 1973: 296). If the calculated F-statistic does not fall within a specified range of values for this statistical test, it can be assumed that there is insufficient evidence to state that the sample variances are equal thus indicating that the results of the t-test may not be valid.

are shown in Table 4. For the eight leisure facilities, 15 significant differences (α = 0.05) and 13 highly significant differences (α = 0.01) occur among the 25 rating scales. However, the results of the test for the equality of variances of the rating scale scores of the two sub-samples disclose that 13 of the t-test results are statistically questionable[1] (Appendix VII). Therefore, caution must be used in their interpretation. Since it was possible to obtain 200 significant differences (25 rating scales and 8 facilities), the relatively low number of significant differences obtained is indicative of the similarities in the assessments given the leisure facilities by the two sub-samples. Thus, the generally similar pattern of responses disclosed on the graphs (Figures 13 - 20), and the small number of significant differences registered between the means of the rating scale scores, suggest that there are very few differences between the age-integrated and age-segregated elderly with regard to the assessments of leisure facilities. The rating scales that disclose significant and highly significant differences are grouped under the four main categories (Table 5). The results are presented and interpreted in terms of each of these categories.

TABLE 4 RESULTS OF THE STUDENT'S t-TEST

RATING SCALE	THE MALL	HOME OF FAVORITE RELATIVE	HOME OF FAVORITE FRIEND	CHURCH	GORDON HOWARD CENTRE	SELKIRK PARK	CANADIAN LEGION	CURLING RINK
1. NOT IMPORTANT / VERY IMPORTANT					-2.79**			-2.09*
2. GROUP ORIENTED / INDIVIDUAL ORIENTED				-2.09*				
3. UNFAMILIAR / VERY FAMILIAR								
4. A PLACE TO WATCH ACTIVITIES / A PLACE TO PARTICIPATE IN ACTIVITIES	2.00*							
5. NOISY / QUIET					-2.04*			
6. EXPENSIVE / CHEAP		2.35*	-2.45*					
7. DISTANT / CLOSE				-3.16**	-3.02**	-2.89**		-3.26**
8. UNINTERESTING / ENTERTAINING								
9. LIMITED CHOICE OF ACTIVITIES / VARIETY OF ACTIVITIES								
10. FOR YOUNG PEOPLE / FOR ELDERLY PEOPLE								-2.85**
11. FOR A SPECIFIC AGE / NO AGE RESTRICTIONS								
12. LIMITED AVAILABILITY / ALWAYS AVAILABLE		-2.02*				-2.15*	-2.12*	
13. PHYSICAL ACTIVITY / MENTAL ACTIVITY	-2.85**							
14. NOT FRIENDLY / VERY FRIENDLY								-2.52*
15. INFORMAL PLACE / FORMAL PLACE					3.97**			
16. CONFINING / SPACIOUS					-2.35*			
17. INCONVENIENT / VERY CONVENIENT				-2.76**	-3.99**	-2.54*		-3.87**
18. DIRTY / CLEAN								
19. HECTIC / RELAXING				-2.64**				
20. DREARY PLACE / CHEERFUL PLACE					-2.28*			
21. UNCOMFORTABLE / VERY COMFORTABLE				-2.18*	-2.90**			
22. AGGRAVATING / PEACEFUL								
23. COMPANION NEEDED / NO COMPANION NEEDED								
24. OBLIGATED TO GO / NOT OBLIGATED TO GO								-2.18*
25. UNABLE TO PARTICIPATE/ ABILITY TO PARTICIPATE								

* indicates significance at the 0.05 level
** indicates significance at the 0.01 level

TABLE 5 RATING SCALES REGISTERING SIGNIFICANT DIFFERENCES BETWEEN THE AGE-INTEGRATED AND AGE-SEGREGATED ELDERLY

Rating Scale Categories	Rating Scales Disclosing Significant Differences
I. Accessibility	distant / close limited availability / always available inconvenient / very convenient
II. Social Environment	not friendly / very friendly informal / very formal confining / spacious hectic / relaxing dreary place / cheerful place uncomfortable / very comfortable for a specific age / no age restrictions
III. Utility	not important / very important unfamiliar / very familiar obligated to go / not obligated to go expensive / cheap
IV. Functional Diversity	a place to watch activities / a place to participate in activities physical activity / mental activity

4.2.1 Accessibility

The category "Accessibility" appears to contain the most important evaluative criteria used by the elderly to discriminate among leisure facilities. Eleven pairs of mean values in this category are significantly different, of which seven are highly significant (Table 6). It is notable that the age-segregated elderly register lower mean values on each rating scale in this category. Since the age-segregated elderly also exhibit a lower frequency of vehicle ownership than the age-integrated elderly (Figure 10), these results could be due, in part, to the differences in mobility among the two sub-samples. In this case, the age-segregated elderly, having to depend upon others for transportation to and from the facilities, could perceive the facilities to be more distant because of the extra time and effort required to procure transportation. The rating scale "distant/close" discloses highly significant differences on four facilities (i.e. Church, Gordon Howard Senior Centre, Selkirk Park, Curling Rink) and appears to be the most important discriminator used by the elderly in this category. The same facilities register three highly significant differences and one significant difference on the scale "inconvenient/very convenient". Finally, the rating scale "limited availability/

TABLE 6 SIGNIFICANT DIFFERENCES ON THE RATING SCALES: ACCESSIBILITY

Rating Scale	Facility	Mean Score		t-statistic
		Age-Integrated	Age-Segregated	
distant / close	Church	6.3	5.0	-3.16**
	Gordon Howard Centre	5.8	4.3	-3.02**
	Selkirk Park	5.3	3.7	-2.89**
	Curling Rink	6.2	5.1	-3.26**
inconvenient / very convenient	Church	6.2	5.1	-2.76**
	Gordon Howard Centre	6.4	5.0	-3.99**
	Selkirk Park	6.3	5.3	-2.54*
	Curling Rink	6.4	5.1	-3.87**
limited availability / always available	Home of Favourite Relative	6.5	5.9	-2.02*
	Selkirk Park	5.7	4.5	-2.15*
	Canadian Legion	5.9	4.9	-2.12*

* indicates significance at the 0.05 level
** indicates significance at the 0.01 level

always available" produces significant differences between the sub-samples with respect to the Home of a Favourite Relative, Selkirk Park, and the Canadian Legion.

Overall, it is suggested that vehicle ownership plays a significant role in the evaluation of the leisure facilities on the rating scales in this category. Since this category generates the greatest number of significant differences between the two sub-samples, it may represent the most important evaluative criteria used by the elderly to distinguish between leisure facilities. On the other hand, relatively large standard deviations are disclosed on three rating scales which suggests that there may be substantial variation within the sub-samples concerning their assessments of the relevant leisure facilities. This may weaken the usefulness of these scales as discriminators between leisure facilities. In particular, large standard deviations are reported by the age-integrated and age-segregated elderly concerning their assessments of Selkirk Park on the scales "distant/close" ($s = 1.89$, $s = 1.79$, respectively) and "limited availability/always available" ($s = 1.74$, $s = 2.04$, respectively). The age-segregated elderly also disclose a relatively large standard deviation on the scale "distant/close" ($s = 1.94$) regarding their assessment of the Gordon Howard Senior Centre. There-

fore, the implied importance of the category "Accessibility" may be somewhat exaggerated. With the exception of the results on Selkirk Park, it is notable that the age-integrated and age-segregated elderly both record mean values greater than 4 on the rating scales, indicating favourable assessments of the facilities. On the scale "distant/close", Selkirk Park discloses a low mean value by the age-segregated elderly ($\bar{x}$ = 3.7), in comparison to the rather high mean score ($\bar{x}$ = 5.3) recorded by the age-integrated elderly. Since attendance at this facility by both sub-samples is essentially the same (Figure 12), it is difficult to account for this discrepancy. The low mean value registered by the age-segregated elderly might be related to their lower level of vehicle ownership. On the other hand, the results on this scale could be explained by the relatively large standard deviations mentioned above.

4.2.2 Social Environment

This category appears to be second in importance to "Accessibility" in terms of the criteria used by the elderly to discriminate between leisure facilities. Seven rating scales divulge eight significant differences between the samples; four of these are highly significant (Table 7). Two pairs of mean values are significantly different on the

TABLE 7 SIGNIFICANT DIFFERENCES ON THE RATING SCALES: SOCIAL ENVIRONMENT

Rating Scale	Facility	Mean Score		t-statistic
		Age-Integrated	Age-Segregated	
not friendly / very friendly	Curling Rink	6.3	5.6	-2.52*
informal / very formal	Gordon Howard Centre	2.2	4.2	3.97**
confining / spacious	Gordon Howard Centre	5.6	4.5	-2.35*
hectic / relaxing	Church	6.5	5.7	-2.64**
dreary place / cheerful place	Gordon Howard Centre	6.2	5.5	-2.28*
uncomfortable / very comfortable	Church Gordon Howard Centre	6.4 6.3	5.5 5.3	-2.18* -2.90**
for a specific age / no age restrictions	Curling Rink	6.4	5.3	-2.85**

* indicates significance at the 0.05 level
** indicates significance at the 0.01 level

"uncomfortable/very comfortable" scale. For the two facilities concerned (i.e. Church and Gordon Howard Senior Centre), the age-segregated elderly disclose less favourable assessments than the age-integrated elderly. There are alternative plausible explanations for this result. For example, the age-segregated elderly are generally older than the age-integrated elderly (Figure 6) and therefore may be more prone to feeling physical discomfort. Having to sit on the relatively hard wooden pews characteristic of most churches might evoke stronger images of discomfort.

With respect to the Gordon Howard Senior Centre, the less favourable ratings registered by the age-segregated elderly on three of the scales, "uncomfortable/very comfortable", "confining/spacious", and "dreary place/ cheerful place", might be related to the higher frequency of visits that they make to this facility (Figure 12). Being at the Gordon Howard Senior Centre more often than the age-integrated elderly, the age-segregated elderly would probably have more experience with events or situations at this facility that might cause discomfort. They may also be comparing the leisure facilities offered at the Gordon Howard Senior Centre with the activities that are available within their own residential setting. Parkview

Manor and Red River Manor, for example, have "in-house" recreational areas. Therefore, the age-segregated elderly may associate stronger images of comfort with the leisure programs offered in their own residential environment. On the other hand, the age-integrated sample may form more positive images of the Gordon Howard Senior Centre as a result of media influence. This facility regularly submits very positive and supportive reports of its programs and activities to the local newspapers. These reports may direct the age-integrated elderly, who are less frequent visitors to the facility and therefore less familiar with its operation, into forming relatively positive impressions of the Centre in terms of the attributes defined by the above scales.

The age-segregated elderly disclose a significantly less favourable assessment of the Church on the "hectic/relaxing" scale. This result could be related to the mobility characteristics of this sub-sample since having to arrange for transportation to and from the church could make the church experience less satisfying for them.

The Curling Rink registers the only significant differences between the sub-samples on the scales "not friendly/very friendly" and "for a specific age/no age restrictions". Again, with respect to the former scale, the

age-segregated elderly provide a less favourable assessment. Since the Curling Rink also attracts a large number of the non-elderly, there may be hesitancy, on the part of the older age-segregated elderly, to associate with this "younger generation". Furthermore, although the sport of curling can be enjoyed by most age groups, it does require a certain amount of physical exertion and the ability to move about on an icy surface. It may be that, due to their generally higher age and less positive opinion of their health (Figure 11), the age-segregated elderly feel that they cannot adequately participate in the sport. This may cause them to feel that they are less welcome at this facility. The age-integrated elderly, who are younger (especially in the 65 - 69 year age class), have a higher appraisal of their health, and who are more familiar with this facility (Figure 12), may not perceive such a "generation gap" to exist and therefore perceive the Curling Rink to be more friendly. The results on the rating scale "for a specific age/no age restrictions" may be similarly explained. The age-segregated elderly appear to hold the image that the Curling Rink is more suited for certain age groups than the age-integrated elderly. As mentioned above, the age and health characteristics of the age-segregated elderly may adversely influence their assess-

ment of this facility and thus may explain the lower mean value ($\bar{x}$ = 5.3) registered by this sub-sample on this scale. In contrast, the age-integrated elderly, who are generally younger and report better health, disclose a very high mean value ($\bar{x}$ = 6.4).

The rating scale "informal/very formal" yields one highly significant difference between the sub-samples. The verbal labels of this rating scale also do not necessarily imply positive or negative images. Therefore, the very low mean score ($\bar{x}$ = 2.2) disclosed by the age-integrated elderly may not mean that they hold a less favourable image of the facility involved (Gordon Howard Senior Centre). These results could again be attributed to the difference in visitation rates between the sub-samples. For example, the Gordon Howard Senior Centre offers a great variety of well-organized activities and also regularly arranges a wide range of planned outings and/or excursions to various places and events both inside and outside Selkirk. The age-segregated elderly, visiting the Gordon Howard Senior Centre more often and therefore being exposed to this great variety of structured activity, may consequently develop images of greater formality respecting the operation of this facility.

In general, the scales concerning the social environment of leisure facilities are moderately important in discriminating between the leisure facility preferences of the elderly. The less favourable assessments disclosed by the age-segregated elderly on the scales in this category appear to be partly related to the age and health characteristics of the sub-samples as well as the frequency of visits to the facilities.

While it is important to discuss the significant differences between the sub-samples in the social environment category, however, it is equally important to comment upon the nature of the similarities in the responses. With the exception of the scale "informal/very formal", both sub-samples register highly favourable assessments of the facilities as indicated by the range of the mean scores (4.5 - 6.5). The age-segregated elderly, of course, express slightly lower mean values than the age-integrated elderly. Nevertheless, the two sub-samples are essentially quite similar in their assessments of these leisure facilities.

4.2.3 Utility

In comparison to the two previously mentioned categories, "Utility" does not appear to be as important for distinguishing between the sub-samples in terms of their assessments of leisure facilities. Four rating scales

disclose seven significant differences between the sub-samples, of which one is highly significant (Table 8). The scale "not important/very important" appears to be the most important discriminator for it registers one significant and one highly significant difference between the sub-samples. For the facilities upon which the differences are produced (i.e. Gordon Howard Senior Centre and Curling Rink), the age-segregated elderly disclose less favourable assessments than the age-integrated elderly. This result might be partly explained on the basis of previous results. For example, it was mentioned above that the age-segregated elderly have the benefit of leisure programs within their own residences. This characteristic of their environment could therefore adversely influence their assessment of the importance of the Gordon Howard Senior Centre. Conversely, the age-integrated elderly, who do not have such benefits, and who might be influenced by the media reports of the Centre, might consider this facility to be quite important as a source of leisure. It is noteworthy, however, that the standard deviation reported by the age-segregated sample on this scale is significantly larger ($s = 1.53$) than the standard deviation disclosed by the age-integrated sample ($s = 0.99$). This suggests that there may be a relatively large variation among the responses on

TABLE 8 SIGNIFICANT DIFFERENCES ON THE RATING SCALES: UTILITY

Rating Scale	Facility	Mean Score		t-statistic
		Age-Integrated	Age-Segregated	
not important / very important	Gordon Howard Centre	6.4	5.4	-2.79**
	Curling Rink	5.9	4.8	-2.09*
unfamiliar / very familiar	Church	6.4	5.4	-2.09*
obligated to go / not obligated to go	Curling Rink	6.2	5.3	-2.18*
expensive / cheap	Home of Favourite Relative	3.8	5.0	2.35*
	Home of Favourite Friend	3.9	5.0	-2.45*
	Gordon Howard Centre	4.6	3.6	-2.04*

* indicates significance at the 0.05 level

** indicates significance at the 0.01 level

this rating scale within the age-segregated sample which may therefore help explain their less favourable assessments of this facility despite their higher attendance rates. Regarding the Curling Rink, the large standard deviation (s = 2.04) registered by the age-segregated elderly on this scale may weaken its usefulness as a discriminator between the sub-samples.

The church registers the only significant difference between the samples on the scale "unfamiliar/very familiar", with the age-segregated elderly reporting a lower mean value than the age-integrated elderly. Nevertheless, it is difficult to explain why the age-segregated elderly feel slightly less familiar ($\bar{x}$ = 5.4) with this facility than do the age-integrated elderly ($\bar{x}$ - 6.4) since both sub-samples reported similar visitation rates (Figure 12). However, this discrepancy may be related to the nature of the standard deviations disclosed by the sub-samples on this scale. The age-segregated elderly report a significantly larger standard deviation (s = 1.97) than do the age-integrated elderly (s = 0.97), therefore, the responses of the age-segregated elderly may be somewhat unreliable.

The rating scale "obligated to go/not obligated to go" registers one significant difference between the samples (i.e. concerning the Curling Rink). In this case, the

verbal label "obligated to go" was considered to express a more negative assessment of the leisure facility because it may imply that the individual is not necessarily going to the facility to satisfy his/her own leisure needs. On the other hand, if a person feels no obligation to visit a facility, their visit to it may imply a genuine desire to attend thus fulfilling a leisure need. The fact that the age-segregated elderly feel more obligated to visit the Curling Rink ($\bar{x}$ = 5.3) than do the age-integrated elderly ($\bar{x}$ = 6.2) thus indicates that they may not always be going for their own benefit. Instead, they may be visiting this facility in order to satisfy the desires of others (e.g. friends, relatives). On the other hand, the age-integrated elderly, who may exhibit a higher degree of participation in curling because of their younger age characteristics and higher attendance at the Curling Rink (Figure 12), presumably feel less "obligation" to attend.

With respect to the rating scale "expensive/cheap", the results are particularly difficult to interpret due largely to the inexperience of the researcher. When the construct "expensive/cheap" was elicited in the preliminary survey it never occurred to the researcher that there could be different reasons for its emergence. For example, the respondents may have been thinking of transportation costs

(e.g. taxi fare, bus fare, gasoline costs). On the other hand, they may have been considering the cost of admission to a particular facility and/or costs of participation (e.g. theatre admission, curling fees, food and drink). The ambiguity that surrounds this construct weakens its usefulness in the study. Therefore the results on the rating scale "expensive/cheap" and the following interpretations should be viewed with caution.

Three facilities (i.e. Home of a Favourite Relative, Home of a Favourite Friend, Gordon Howard Senior Centre) yield significant differences on the "expensive/cheap" rating scale. The age-integrated elderly, for instance, perceive the homes of relatives and friends to be more expensive to visit than do the age-segregated elderly. This result seems to indicate that transportation costs may not be the dominant factor since the age-integrated elderly generally have their own vehicle to use (Figure 9), while the age-segregated elderly who generally have to rely upon others. In hindsight, the researcher could have solicited information from the subjects regarding the distance travelled to these facilities since it is possible that the age-segregated elderly have friends and relatives who are not as distant as those of the age-integrated elderly. In most cases, for instance, visiting relatives and/or

friends may involve the use of commercial carriers (e.g. aircraft, railway) which would entail considerable expense. The results on this scale might also be due to the social character of these two facilities. For instance, visiting a relative or friend may involve expenses other than transportation (e.g. gifts). However, these "supplementary" costs may therefore adversely influence the assessments of these facilities by both sub-samples.

The results on the "expensive/cheap" scale disclosed by the sub-samples with respect to the Gordon Howard Senior Centre are not unexpected. The age-segregated elderly report higher costs involved in attending the Centre and also visit this facility more often than the age-integrated elderly (Figure 12). Therefore the former would likely be more aware of the costs in participating in the activities that this facility offers.

In sum, the fewer significant differences between means in the category "Utility" suggests that it, in comparison with "Accessibility" and "Social Environment", is less important to the elderly for distinguishing between leisure facilities.

Of the four rating scales that register significant differences in this category, it is notable that only one (i.e. "expensive/cheap") has mean values of less than 4.

This further emphasizes the relative similarity among the age-integrated and age-segregated elderly in their assessments of the leisure facilities. Although the age-segregated elderly reveal slightly lower mean values on the scales, the values reported by both sub-samples generally indicate favourable assessments of the facilities. However, for the "expensive/cheap" scale, the results are somewhat ambiguous due to the lack of information concerning the nature of the costs involved in attending the facilities.

4.2.4 Functional Diversity

This category seems to be of little importance to the elderly in discriminating among leisure facilities since only two rating scales disclose significant differences between the sub-samples (Table 9). Specifically, the results reveal that the age-segregated elderly assess the Mall as a place requiring more physical activity and/or physical participation. The age-integrated elderly, on the other hand, appear to have a more passive image of this facility. These results could be partly due to the age and health characteristics of the sub-samples and to the nature of the Mall. For instance, it is not entirely surprising that the older age-segregated elderly associate going to the Mall with higher levels of physical activity than the younger age-integrated elderly since a substantial amount

TABLE 9 SIGNIFICANT DIFFERENCES ON THE RATING SCALES: FUNCTIONAL DIVERSITY

Rating Scale	Facility	Mean Score		t-statistic
		Age-Integrated	Age-Segregated	
a place to watch activities / a place to participate in activities	The Mall	3.8	4.4	2.00*
physical activity / mental activity	The Mall	4.0	3.3	-2.85**

* indicates significance at the 0.05 level
** indicates significance at the 0.01 level

of walking is involved. The results might also be attributed to subject error during the interview procedure. The Mall is a major shopping facility in the study area but it also serves as a moderately important place for people to socialize. This is especially so during the winter months because it offers the only indoor shopping area in Selkirk. When the subjects in the final survey were given the rating scale questionnaire to complete, it was stressed that the objective of the study, with respect to the Mall, was to determine their assessments of it as a leisure facility. Therefore, they were reminded to disassociate consumer activity from their evaluations of the Mall. However, it is possible that some subjects failed to do this and, in fact, may have assessed the Mall in terms of the effort associated with consumer activity (e.g. carrying shopping bags, standing in queues, etc.). The results, therefore, may be somewhat misleading and should be viewed with caution.

The category "Functional Diversity" appears to be of little importance to the elderly as a means of discriminating between leisure facilities not only in terms of the small number of significantly different mean values disclosed on the rating scales, but also in terms of the characteristics of the raw mean scores. In both sub-samples, the mean scores on the rating scales indicate relatively

"neutral" opinions. This suggests that the rating scales "a place to watch activities/a place to participate in activities" and "physical activity/mental activity" have limited value as discriminators among the leisure facilities. The age-integrated and age-segregated elderly, therefore, appear to be quite similar in their assessments of the Mall on the two rating scales in this category.

4.2.5 Leisure Facilities Disclosing Large Numbers of Significant Differences

The foregoing discussion has concentrated upon establishing plausible reasons for the significant differences that occur between the sub-samples on their responses on the rating scales. However, it has also demonstrated that the age-integrated and age-segregated elderly register similar scores on most of the rating scales. Another noteworthy finding involves the large number of significantly different pairs of mean values registered by three of the leisure facilities. Nineteen (out of 28) significant differences disclosed in the analysis are produced by the Gordon Howard Senior Centre, Curling Rink, and the Church. The Gordon Howard Senior Centre records eight significant differences between the sub-samples on the scales "distant/close", "inconvenient/very convenient", "not important/very important", "expensive/cheap", "informal/very formal",

"confining/spacious", "dreary place/cheerful place", and "uncomfortable/very comfortable". The age-segregated elderly report less favourable assessments and it appears that these results may be partly explained by the presence of social programs that are offered in the manor homes. This suggests that the residential environment may play a significant role. The Curling Rink records six significant differences on the scales "distant/close", "inconvenient/very convenient", "not friendly/very friendly", "for a specific age/no age restriction", "not important/very important", and "obligated to go/not obligated to go". While differences in mobility between the sub-samples may explain the generally less favourable assessments registered by the age-segregated elderly on the first two scales, it is argued that differences in age and health appear to be the major discriminators in explaining the responses on the last four scales. Similar reasons may also account for the generally less favourable assessments given the Church by the age-segregated elderly. For this facility, significant differences are disclosed on five rating scales: "unfamiliar/very familiar", "distant/close", "inconvenient/very convenient", "hectic/relaxing", and "uncomfortable/very comfortable".

It is perhaps significant that these facilities offer clearly defined activities in comparison to the vaguely

defined leisure functions of the other facilities. Additionally, these facilities appear to have a relatively strong group-oriented "image" among the elderly (Figures 16, 17, 20). This may have made it possible for the elderly to form more assured assessments of these facilities on the rating scales and therefore may help explain the large number of significant differences.

4.3 Summary

The chapter first presents a discussion of the sample characteristics. This is followed by a description of the responses given on the rating scales. Twenty-eight significant differences occur between the sub-samples and these are discussed in terms of four categories of the rating scales. Finally, the characteristics of the leisure facilities which generate the significant differences are considered.

CHAPTER V

SUMMARY AND CONCLUSIONS

The objective of this thesis has been to examine the differences in the leisure facility preferences of the urban elderly who reside in: (i) an age-integrated residential environment, and (ii) an age-segregated residential environment. Specifically, the thesis attempts to:

1. identify the evaluative criteria used by the elderly to assess leisure facilities.
2. determine and compare evaluations of leisure facilities by elderly residents of age-integrated and age-segregated housing.

Chapter One of the thesis discusses the background to the study. Chapter Two presents a review of the literature and also places the present study within the discipline of geography. In Chapter Three, the research design is discussed. Particular emphasis is placed on explaining the use of personal construct theory and repertory grid methodology. This chapter also presents a description of the study area and an explanation of the data collection procedures. Chapter Four offers descriptive and inferential statistical analyses of the data. The purpose of the present chapter is to summarize the findings of the study, offer suggestions

for future research, and propose recommendations concerning leisure services for the elderly in the study area.

5.1 Research Design

The present study employs repertory grid methodology, a technique based upon Kelly's (1955) personal construct theory. The data for the study are collected from two samples of the elderly population residing in Selkirk, Manitoba in 1982. A preliminary sample is used to elicit personal constructs that the age-integrated and age-segregated elderly hold of 16 selected leisure facilities in the study area. Relevant demographic, socio-economic, and leisure data are also collected. Twenty subjects are drawn from each residential environment to comprise a total of forty subjects in the preliminary sample.

From the total set of constructs elicited in the preliminary survey, a reduced set of twenty-five common constructs is identified. These twenty-five constructs are converted to seven-point bipolar adjectival rating scales which are used by a final sample to evaluate the eight most frequently visited leisure facilities by the elderly. In the final sample, 30 individuals from each residential environment are surveyed. The rating scales are conveniently arranged into four categories: Accessibility, Social

Environment, Utility, and Functional Diversity. The subjects in the sample are also asked to provide relevant demographic, socio-economic, and leisure data.

The results of the rating scales were aggregated and mean scores on each rating scale for each facility were then calculated for both residential environments. The small sample t-test was then used to calculate the statistical difference between the mean scores registered by the two sub-samples on each facility.

5.2 The Findings

A major finding of the present study is that strong similarities are exhibited between the age-integrated and age-segregated elderly concerning their assessments of leisure facilities. Only 28 significant differences were found between the means registered by the two sub-samples on the eight leisure facilities used in the final survey. Since it was possible to obtain 200 statistically significant differences, this relatively small number is indicative of the broadly similar leisure facility preferences of the elderly in the study area. Moreover, in terms of the mean scores registered on the rating scales, both sub-samples generally disclose favourable assessments of the leisure facilities. It is noteworthy, however, that the age-segregated elderly generally register less

favourable assessments of the facilities on the scales than do the age-integrated elderly.

The findings indicate that the mean scores on the rating scales in the category "Accessibility" produce the greatest number of significant differences between the sub-samples. The responses on these rating scales (Table 6) indicate that the age-segregated elderly hold less favourable images of the facilities in this category. These results appear to be related to the lower frequency of vehicle ownership (and therefore lower level of mobility) among the age-segregated elderly, indicating that they might experience more difficulty in procuring transportation to and from the facilities. The more restricted mobility patterns of the age-segregated elderly also may have an influence on the less favourable assessments they give the leisure facilities on other categories (e.g. social environment). This finding conforms with the results of other studies in which the importance of mobility in explaining the activity patterns of the elderly is emphasized (Carp, 1980; Herbert and Peace, 1980).

The findings concerning accessibility have significant implications for the study area in terms of the transportation modes available to the elderly. Selkirk has no public intra-urban transit system, other than a linear

route along the town's Main Street (Figure 3). Shortly after the completion of the present study, the town introduced a "handi-bus" vehicle which, for a nominal charge, transports the elderly from their residence to desired locations. It would be a useful exercise, in the future, to assess the impact of this vehicle upon the leisure behaviour of the elderly in the study area.

Age and health are suggested to be important factors in distinguishing among the leisure facility preferences of the elderly. Many of the less favourable assessments given the leisure facilities (i.e. Church, Curling Rink, Mall) by the age-segregated elderly may be explained by their generally higher age levels and poorer health. Their probable greater sensitivity to physical discomfort contributes to the less favourable images held with regard to the social environment and utility of the leisure facilities. A notable weakness of the present study, in terms of these results, is the absence of more detailed and diversified personal data (e.g. income, specific health problems).

The degree of familiarity that the elderly have of the Gordon Howard Senior Centre, measured in terms of visitation rates, appear to have an important influence upon their evaluation of this facility on many of the

scales. The age-segregated elderly exhibit generally higher attendance, but disclose less favourable images of this leisure facility. It is proposed that the age-segregated elderly, in visiting this facility more often than the age-integrated elderly, would perhaps be more conscious of situations at the centre that may cause unsatisfactory leisure experiences. This may help to explain the apparent contradiction that appears to exist between the higher visitation rates and less favourable assessments disclosed by this elderly group. It is also argued that the age-segregated elderly may be comparing the leisure programs offered at the Gordon Howard Senior Centre with the leisure programs available within the manor homes. This suggests that the residential environment may have a significant influence on the assessments given this facility.

A notable finding of the analysis concerns the disproportionate share of significant differences registered by the Gordon Howard Senior Centre, Curling Rink, and the Church. These facilities account for 19 of the 28 significant differences produced by the sub-samples. The three facilities have clearly defined functions and also are perceived by the elderly as being group-oriented. It is argued that these characteristics may have made it possible for the elderly to form more assured assessments of these

facilities on the rating scales thus attributing to the large number of significant differences.

5.3 Suggestions for Future Research

In view of the findings, three main suggestions are offered concerning future research. The results of the present study appear to contradict the findings of previous investigations in several respects. In particular, there are indications of strong similarities between the leisure facility preferences of the age-integrated and age-segregated elderly in the study area even though the age-segregated elderly generally disclose less favourable assessments of the leisure facilities. Previous work, undertaken in large metropolitan centres of the United States (Carp, 1967; Morgan and Godbey, 1978; Sherman, 1974) and in specialized retirement communities in the same country (Bultena and Wood, 1970), suggests that notable differences exist between the leisure behaviour of the age-integrated and age-segregated elderly. Furthermore, these studies have inferred that the age-segregated elderly express a higher degree of satisfaction concerning leisure opportunities. It is perhaps significant that the present study was undertaken in a relatively small urban community. This suggests that the population size and spatial extent of the study area may be important

factors in influencing the leisure behaviour of the elderly.

With respect to the current study, the relatively small size of the community may particularly influence the leisure facility preferences of the age-integrated elderly. For instance, it may be that the age-integrated elderly of small communities are less hesitant about driving to and from the various leisure facilities in the area because the traffic volume and driving distance would likely be low. Therefore, they should experience greater access to leisure facilities, resulting in a high degree of satisfaction when they go to them. In comparison, a large urban centre would likely present formidable driving problems for the age-integrated elderly with regard to traffic volume, traffic density, and driving distance. Thus, the age-integrated elderly living in a large city may be more reluctant to drive to and from leisure facilities that are available to them. Therefore, they may experience poor access to these facilities which might result in a lower degree of satisfaction with them. This proposition is supported by a recent study of elderly needs in Winnipeg (Nor'West Co-op Health and Social Services Centre, Inc., 1983). This study found that the age-integrated elderly rated their accessibility to resources in their area as

relatively low in relation to age-segregated residents. It would, therefore, be useful to conduct research, similar to the present study, in a large urban centre such as Winnipeg, in order to determine whether there exists evidence to support this contention.

The second suggestion for future research concerns the general absence of comparable research that is specifically Canadian in its content. As mentioned above, most previous work in this particular research area has taken place in specific areas of the United States. The generally contradictory findings of these American studies may also suggest then, that the leisure behaviour of the elderly could be partly influenced by characteristics of the regional and/or cultural landscape. Although it is a generally held belief that American and Canadian society are broadly similar, there exists evidence of significant differences between the "cultural landscapes" of the two nations (Birdsall and Florin, 1981; de Blij, 1978). With regard to research concerning the leisure behaviour of the elderly, reliance upon the findings of studies conducted specifically in the United States may lead to misleading conclusions regarding the leisure behaviour of Canadian elderly. Therefore, more research concerning the leisure behaviour of Canada's elderly is strongly warranted.

The third suggestion for future research concerns the nature of the data base used in the present study. It is suggested that perhaps more substantive conclusions could have been formed regarding the findings of the present study if the data concerning the demographic and socio-economic characteristics of the elderly had been more detailed and diversified. For instance, it would be useful for researchers to collect information regarding income levels of the elderly because this may help to better explain how costs affect facility preferences. Future investigations may want to consider the use of a more detailed age categorization since this may play an important role in discriminating between leisure facilities. Some researchers (e.g. Shulman, 1980) make a distinction between the " 'young-old' (under 75) and the 'old-old' (over 75)" (Shulman, 1980:27). This type of categorization may help in providing clearer explanations with respect to the influence of age upon leisure facility preferences. Researchers may also want to consider data concerning the occupational history of the elderly since this factor has been found to have an influence upon the elderly's perception of leisure (Roadburg, 1981). More careful attention should be given to the role that the health of the elderly plays in the formulation of

decisions concerning leisure behaviour. It may not be adequate to simply elicit a general assessment of health as was done in the present study. More detailed information regarding particular health problems and/or restrictions of the elderly concerning physical handicaps should be an integral part of an investigation concerning the leisure behaviour of the elderly. Finally, researchers may want to consider data that provides some measure of the "cultural landscape" in which the elderly reside since it has been suggested that cultural characteristics of a "study area" may have an influence upon the leisure behaviour of the elderly.

5.4 Recommendations

The results of the present study suggest that the elderly in Selkirk are generally satisfied with the leisure facilities in the community. Nevertheless, three general recommendations concerning leisure services for the elderly are proposed. First, the findings suggest that access to facilities has significant influence on the leisure facility preferences of the age-segregated elderly. Therefore, local authorities may want to investigate ways and means by which the intra-urban mobility of the age-segregated elderly could be improved. The introduction of the handi-bus vehicle to the community, shortly after the completion

of the present study, demonstrates that the authorities are cognizant of this concern.

Second, local authorities should consider improving the publicity concerning leisure programs for the elderly. The age-segregated elderly appear to be adequately informed of current and future events in the community due largely to the posting of bulletins in the manor homes and greater frequency of social contacts with peers. On the other hand, the age-integrated elderly, who experience a more isolated residential setting, may not be as well-informed. The generally lower attendance at the leisure facilities by the age-integrated elderly may be due, in part, to a lack of knowledge about leisure opportunities.

Third, it may be useful to implement, at the local level, a more aggresive program of leisure education for the elderly. The elderly of modern society grew up in a society that was generally work-oriented. The term "leisure", to them, is often equated with the phrase "a waste of time" (Ibid, 1981). Such perceptions frequently emerged during the preliminary survey of the present study (Table 1). Therefore, it is possible that the elderly in Selkirk are not fully aware of the benefits of leisure involvement, in terms of mental and physical well-being. With respect to this recommendation, it is noteworthy that

local authorities in Selkirk, with assistance from the Manitoba government[1], have initiated a study of the ways and means by which the "leisure knowledge" of the elderly can be improved.

This thesis has attempted to contribute more information to the growing body of knowledge concerning the spatial aspects of the behaviour of the elderly. In this endeavour, it has concentrated its efforts upon the leisure behaviour of the elderly since this is one area in which geographic information appears to be limited. The present thesis, therefore, is largely an exploratory study and, in this context, perhaps introduces a new dimension to the geographic investigation of the elderly. The paper has demonstrated that much work remains to be done in this particular area of geographic research.

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1. Manitoba Employment Action Program

APPENDIX I

MATRIX OF ELEMENTS

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

1. Selkirk Arena
2. Curling Rink
3. Golf Course
4. Indoor Pool
5. Canadian Legion
6. Army, Navy & Air Force Club
7. Garry Centre
8. Robert Smith Library
9. High School Library
10. Gordon Howard Senior Centre
11. Church
12. The Mall
13. Selkirk Park
14. Memorial Park
15. Home of Favourite Friend
16. Home of Favourite Relative

APPENDIX II

DYADS ADMINISTERED TO THE SUBJECTS: PRELIMINARY SAMPLE

		ELEMENT DYADS											
		1	2	3	4	5	6	7	8	9	10	11	12
SUBJECT	1	1,2	2,3	3,4	4,5	5,6	6,7	7,8	8,9	9,10	10,11	11,12	12,13
	2	13,14	14,15	15,16	1,3	2,4	3,5	4,6	5,7	6,8	7,9	8,10	9,11
	3	10,12	11,13	12,14	13,15	14,16	1,4	2,5	3,6	4,7	5,8	6,9	7,10
	4	8,11	9,12	10,13	11,14	12,15	13,16	1,5	2,6	3,7	4,8	5,9	6,10
	5	7,11	8,12	9,13	10,14	11,15	12,16	1,6	2,7	3,8	4,9	5,10	6,11
	6	7,12	8,13	9,14	10,15	11,16	1,7	2,8	3,9	4,10	5,11	6,12	7,13
	7	8,14	9,15	10,16	1,8	2,9	3,10	4,11	5,12	6,13	7,14	8,15	9,16
	8	1,9	2,10	3,11	4,12	5,13	6,14	7,15	8,16	1,10	2,11	3,12	4,13
	9	5,14	6,15	7,16	1,11	2,12	3,13	4,14	5,15	6,16	1,12	2,13	3,14
	10	4,15	5,16	1,13	2,14	3,15	4,16	1,14	2,15	3,16	1,15	2,16	1,16
	11	1,2	2,3	3,4	4,5	5,6	6,7	7,8	8,9	9,10	10,11	11,12	12,13
	12	13,14	14,15	15,16	1,3	2,4	3,5	4,6	5,7	6,8	7,9	8,10	9,11
	13	10,12	11,13	12,14	13,15	14,16	1,4	2,5	3,6	4,7	5,8	6,9	7,10
	14	8,11	9,12	10,13	11,14	12,15	13,16	1,5	2,6	3,7	4,8	5,9	6,10
	15	7,11	8,12	9,13	10,14	11,15	12,16	1,6	2,7	3,8	4,9	5,10	6,11
	16	7,12	8,13	9,14	10,15	11,16	1,7	2,8	3,9	4,10	5,11	6,12	7,13
	17	8,14	9,15	10,16	1,8	2,9	3,10	4,11	5,12	6,13	7,14	8,15	9,16
	18	1,9	2,10	3,11	4,12	5,13	6,14	7,15	8,16	1,10	2,11	3,12	4,13
	19	5,14	6,15	7,16	1,11	2,12	3,13	4,14	5,15	6,16	1,12	2,13	3,14
	20	4,15	5,16	1,13	2,14	3,15	4,16	1,14	2,15	3,16	1,15	2,16	1,16

1. Selkirk Arena
2. Curling Rink
3. Golf Course
4. Indoor Pool
5. Canadian Legion
6. Army, Navy & Air Force Club
7. Garry Centre
8. Robert Smith Library
9. High School Library
10. Gordon Howard Senior Centre
11. Church
12. The Mall
13. Selkirk Park
14. Memorial Park
15. Home of Favourite Friend
16. Home of Favourite Relative

APPENDIX III

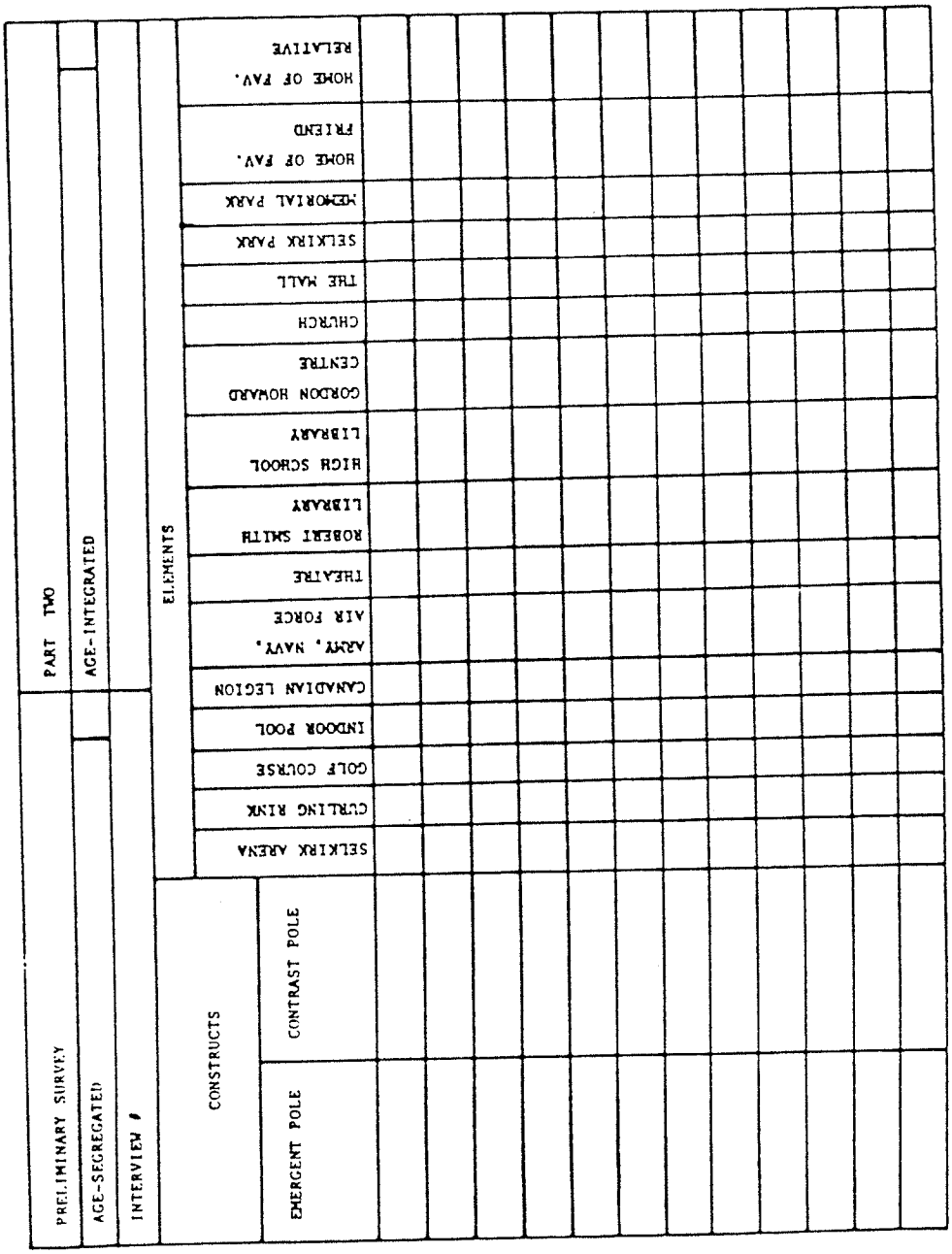
PRELIMINARY SURVEY QUESTIONNAIRE

PRELIMINARY SURVEY			PART ONE		
AGE-SEGREGATED			AGE-INTEGRATED		
INTERVIEW #					
QUESTION	ANSWER		QUESTION	ANSWER	
AGE	65 - 69		LENGTH OF RESIDENCY (YEARS)	< 1	
	70 - 74			1 - 4	
	75 - 79			5 - 8	
	80 - 84			9 - 12	
	85 - 89			13 - 16	
	> 90			> 16	
SEX	MALE		CAR OWNERSHIP	YES	
	FEMALE			NO	
MARITAL STATUS	SINGLE		GENERAL HEALTH	GOOD	
	MARRIED			FAIR	
	WIDOWED			POOR	
	DIVORCED				

FREQUENCY OF VISITATIONS IN PAST YEAR	
IF : 0 - 4	CODE : 0
5 - 9	1
10 - 14	2
15 - 19	3
> 20	4

1	SELKIRK ARENA		9	HIGH SCHOOL LIBRARY	
2	CURLING RINK		10	GORDON HOWARD CENTRE	
3	GOLF COURSE		11	CHURCH	
4	INDOOR POOL		12	THE MALL	
5	CANADIAN LEGION		13	SELKIRK PARK	
6	ARMY, NAVY, AIR FORCE CLUB		14	MEMORIAL PARK	
7	GARRY THEATRE		15	HOME OF FAVORITE FRIEND	
8	ROBERT SMITH LIBRARY		16	HOME OF FAVORITE RELATIVE	

3.1 PRELIMINARY SURVEY QUESTIONNAIRE: PART ONE



3.2 PRELIMINARY SURVEY QUESTIONNAIRE: PART TWO

TO THE PARTICIPANT

Your name was drawn from a list of people living in Selkirk which is kept by the Manitoba Health Services Commission. It is one name in a group of 100 names and addresses of men and women aged 65 and over which were drawn at random from the list for use in this study. A condition made by the Commission was that only people whose names and addresses appear in the Provincial or Interlake Telephone Directories be contacted. This was done so as to insure that persons who might be registered with the Commission under a name different from that in the Directory would not be contacted under that name. Your name and address have been checked in this manner. The researcher has also promised the Commission that, upon completion of this study, names and addresses will be returned to the M.H.S.C. I would like to emphasize that your name and address was the only information provided by the Commission. No information concerning your vital statistics or health or use of health services was released.

Your participation in this study contributes to its success and I appreciate your assistance. Thank-you.

3.3 PRELIMINARY SURVEY QUESTIONNAIRE: LETTER

APPENDIX IV

FINAL SURVEY QUESTIONNAIRE

FINAL SURVEY			PART ONE		
AGE-SEGREGATED			AGE-INTEGRATED		
INTERVIEW #					
QUESTION	ANSWER		QUESTION	ANSWER	
AGE	65 - 69		LENGTH OF RESIDENCY (YEARS)	< 1	
	70 - 74			1 - 4	
	75 - 79			5 - 8	
	80 - 84			9 - 12	
	85 - 89			13 - 16	
	> 90			> 16	
SEX	MALE		CAR OWNERSHIP	YES	
	FEMALE			NO	
MARITAL STATUS	SINGLE		GENERAL HEALTH	GOOD	
	MARRIED			FAIR	
	WIDOWED			POOR	
	DIVORCED				

FREQUENCY OF VISITATIONS IN PAST YEAR	
IF : 0 - 4	CODE : 0
5 - 9	1
10 - 14	2
15 - 19	3
> 20	4

1	SELKIRK ARENA		9	HIGH SCHOOL LIBRARY	
2	CURLING RINK		10	GORDON HOWARD CENTRE	
3	GOLF COURSE		11	CHURCH	
4	INDOOR POOL		12	THE MALL	
5	CANADIAN LEGION		13	SELKIRK PARK	
6	ARMY, NAVY, AIR FORCE CLUB		14	MEMORIAL PARK	
7	GARRY THEATRE		15	HOME OF FAVORITE FRIEND	
8	ROBERT SMITH LIBRARY		16	HOME OF FAVORITE RELATIVE	

4.1 FINAL SURVEY QUESTIONNAIRE: PART ONE

FINAL SURVEY	PART TWO
AGE-SEGREGATED	AGE-INTEGRATED
INTERVIEW #	SHEET #
FACILITY	

1.	NOT IMPORTANT	———————	VERY IMPORTANT
2.	GROUP ORIENTATED	———————	INDIVIDUAL ORIENTED
3.	UNFAMILIAR	———————	VERY FAMILIAR
4.	A PLACE TO WATCH ACTIVITIES	———————	A PLACE TO PARTICIPATE IN ACTIVITIES
5.	NOISY	———————	QUIET
6.	CHEAP	———————	EXPENSIVE
7.	DISTANT	———————	CLOSE
8.	UNINTERESTING	———————	ENTERTAINING
9.	LIMITED CHOICE OF ACTIVITIES	———————	VARIETY OF ACTIVITIES
10.	FOR YOUNG PEOPLE	———————	FOR ELDERLY PEOPLE
11.	FOR A SPECIFIC AGE GROUP	———————	NO AGE RESTRICTIONS
12.	LIMITED AVAILABILITY	———————	ALWAYS AVAILABLE
13.	PHYSICAL ACTIVITY	———————	MENTAL ACTIVITY
14.	NOT FRIENDLY	———————	VERY FRIENDLY
15.	INFORMAL PLACE	———————	FORMAL PLACE
16.	CONFINING	———————	SPACIOUS
17.	INCONVENIENT	———————	VERY CONVENIENT
18.	DIRTY	———————	CLEAN
19.	HECTIC	———————	RELAXING
20.	DREARY PLACE	———————	CHEERFUL PLACE
21.	UNCOMFORTABLE	———————	VERY COMFORTABLE
22.	AGGRAVATING	———————	PEACEFUL
23.	COMPANION NEEDED	———————	NO COMPANION NEEDED
24.	OBLIGATED TO GO	———————	NOT OBLIGATED TO GO
25.	UNABLE TO PARTICIPATE	———————	ABILITY TO PARTICIPATE

4.2 FINAL SURVEY QUESTIONNAIRE: PART TWO

TO THE PARTICIPANT

Your name was drawn from a list of people living in Selkirk which is kept by the Manitoba Health Services Commission. It is one name in a group of 100 names and addresses of men and women aged 65 and over which were drawn at random from the list for use in this study. A condition made by the Commission was that only people whose names and addresses appear in the Provincial or Interlake Telephone Directories be contacted. This was done so as to insure that persons who might be registered with the Commission under a name different from that in the Directory would not be contacted under that name. Your name and address have been checked in this manner. The researcher has also promised the Commission that, upon completion of this study, names and addresses will be returned to the M.H.S.C. I would like to emphasize that your name and address was the only information provided by the Commission. No information concerning your vital statistics or health or use of health services was released.

Your participation in this study contributes to its success and I appreciate your assistance. Thank-you.

4.3 FINAL SURVEY QUESTIONNAIRE: LETTER

APPENDIX V

MEAN SCORES AND STANDARD DEVIATIONS ON THE RATING SCALES

AGE INTEGRATED

	RATING SCALES																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
NUMBER	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
AVERAGE	5.93	4.32	5.61	3.79	4.04	4.64	5.57	4.68	4.14	4.50	6.00	5.68	3.96	5.50	2.68	5.64	5.96	6.18	5.04	5.54	5.54	5.21	4.68	5.54	5.14
STAND DEV	1.82	1.76	1.66	1.32	1.67	1.42	1.64	1.47	1.56	1.07	1.31	1.44	0.79	1.62	1.39	1.06	1.14	1.09	1.62	1.29	1.29	1.32	1.44	1.35	1.51

AGE SEGREGATED

	RATING SCALES																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
NUMBER	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
AVERAGE	5.92	4.54	5.79	4.42	3.71	4.88	4.96	4.63	4.67	4.63	5.71	4.92	3.29	5.38	2.96	5.38	5.92	5.79	4.63	5.88	5.25	4.75	4.63	5.63	5.46
STAND DEV	1.28	1.35	0.98	0.88	1.68	1.12	1.94	1.35	1.58	1.47	1.33	1.91	0.91	1.10	1.73	1.44	1.18	1.28	1.64	0.95	1.29	1.26	1.76	1.53	1.22

5.1 THE MALL

AGE INTEGRATED

	RATING SCALES																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
NUMBER	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
AVERAGE	6.80	4.00	6.64	5.04	4.96	4.20	5.56	5.96	4.76	4.52	5.72	6.52	4.48	6.80	2.00	5.44	6.16	6.68	6.20	6.44	6.52	6.24	5.04	5.76	5.88
STAND DEV	0.65	2.06	0.70	1.67	2.07	1.71	2.02	1.74	1.67	1.45	1.51	0.87	1.36	0.41	1.26	1.29	1.03	0.85	1.19	0.92	0.87	1.23	2.11	1.48	1.67

AGE SEGREGATED

	RATING SCALES																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
NUMBER	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
AVERAGE	6.46	4.92	6.42	4.46	5.42	3.00	4.54	6.00	4.67	5.17	5.33	5.88	4.92	6.58	2.63	5.29	5.75	6.63	6.29	6.33	6.17	5.96	5.29	5.38	5.33
STAND DEV	1.02	1.98	0.93	1.72	1.61	1.87	2.25	0.98	1.81	1.46	1.63	1.33	1.28	0.65	2.00	1.27	1.22	0.77	0.86	0.82	1.01	1.43	1.78	1.58	1.76

5.2 HOME OF A FAVOURITE RELATIVE

AGE INTEGRATED

	RATING SCALES																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
NUMBER	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
AVERAGE	6.24	4.40	6.44	4.64	6.12	4.12	5.32	5.84	4.00	4.96	5.56	5.40	4.72	6.52	2.12	5.16	5.88	6.40	5.96	6.12	6.36	5.96	5.08	5.64	5.44
STAND DEV	1.27	2.18	0.87	1.91	1.05	1.39	1.97	1.21	1.41	1.24	1.50	1.76	1.40	0.82	1.30	1.72	1.33	1.00	1.31	1.13	0.91	1.17	1.66	1.47	1.61

AGE SEGREGATED

	RATING SCALES																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
NUMBER	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
AVERAGE	5.75	5.21	5.88	4.33	5.58	3.04	4.88	5.88	4.46	4.92	4.96	5.58	4.29	6.33	2.71	4.54	5.21	6.25	5.79	6.13	6.17	6.04	5.13	5.54	5.17
STAND DEV	1.65	1.41	1.42	1.43	1.56	1.68	1.65	0.95	1.47	1.41	1.68	1.32	1.27	0.92	1.81	1.56	1.38	1.51	1.14	1.12	1.05	1.08	1.73	1.44	1.52

5.3 HOME OF A FAVOURITE FRIEND

AGE INTEGRATED

	RATING SCALES																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
NUMBER	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
AVERAGE	6.67	3.13	6.38	5.04	6.33	4.08	6.33	5.54	4.83	4.58	5.96	6.17	5.67	6.17	3.33	5.75	6.17	6.63	6.46	6.13	6.38	6.58	5.83	5.71	5.79
STAND DEV	1.24	2.25	0.97	2.01	1.09	1.10	1.01	1.41	2.22	1.02	1.65	1.69	1.13	1.13	2.24	1.39	1.09	0.88	0.93	1.15	1.01	0.88	1.66	1.73	1.79

AGE SEGREGATED

	RATING SCALES																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
NUMBER	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	22	23	23	23	22
AVERAGE	6.17	3.61	5.43	4.13	6.04	3.83	5.04	4.87	3.83	4.09	5.91	5.74	5.13	5.61	4.39	5.26	5.09	6.57	5.65	5.52	5.55	6.39	5.22	5.83	4.86
STAND DEV	1.64	2.21	1.97	1.79	1.22	1.37	1.72	1.66	1.70	1.28	1.31	1.51	1.22	1.80	1.88	1.25	1.56	0.73	1.15	1.50	1.53	1.20	2.24	1.19	2.14

5.4 CHURCH

AGE INTEGRATED

	RATING SCALES																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
NUMBER	26	26	26	26	26	26	26	26	25	26	26	26	26	26	26	26	26	26	26	26	26	26	25	26	26
AVERAGE	6.42	2.54	4.54	5.08	4.62	3.38	5.77	5.77	5.88	6.69	2.23	5.69	4.15	5.92	2.23	5.58	6.38	6.42	5.81	6.23	6.35	5.73	5.12	6.04	5.88
STAND DEV	0.99	2.27	2.40	1.83	1.72	1.86	1.61	1.48	1.56	0.84	2.18	1.83	1.99	1.55	1.97	1.60	0.90	0.95	1.44	1.21	1.02	1.25	1.69	1.48	1.70

AGE SEGREGATED

	RATING SCALES																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
NUMBER	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
AVERAGE	5.42	2.88	4.25	4.42	4.88	4.38	4.25	5.29	5.29	6.42	2.92	5.08	4.08	5.50	4.21	4.54	5.00	5.88	5.21	5.46	5.33	5.29	4.67	5.96	5.17
STAND DEV	1.53	1.45	2.19	1.77	1.70	1.56	1.94	1.52	1.71	0.97	2.17	1.47	1.35	1.25	1.50	1.50	1.50	1.08	1.22	1.18	1.43	1.46	1.66	1.30	1.66

5.5 GORDON HOWARD SENIOR CENTRE

AGE INTEGRATED

	RATING SCALES																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
NUMBER	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
AVERAGE	6.33	2.46	6.25	4.04	4.25	3.42	5.25	6.08	4.63	3.92	6.25	5.67	2.63	5.50	1.71	6.67	6.29	6.21	6.08	6.21	5.67	5.54	5.13	6.29	5.38
STAND DEV	0.92	1.61	1.19	2.12	1.87	1.72	1.89	0.97	1.95	0.50	1.26	1.74	1.41	1.64	1.43	0.76	0.91	1.02	1.41	0.93	1.27	1.53	1.83	1.08	1.64

AGE SEGREGATED

	RATING SCALES																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
NUMBER	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
AVERAGE	5.70	3.30	5.87	3.70	3.52	3.52	3.70	5.48	4.65	3.96	6.04	4.48	3.22	4.83	2.52	6.48	5.30	5.61	5.57	6.30	5.52	5.48	4.30	5.91	4.87
STAND DEV	1.52	1.84	1.22	1.99	2.11	1.90	1.79	1.38	1.99	2.03	1.26	2.04	1.35	1.80	1.70	1.04	1.66	1.53	1.62	0.82	1.38	1.50	2.24	1.20	1.89

5.6 SELKIRK PARK

AGE INTEGRATED

	RATING SCALES																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
NUMBER	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
AVERAGE	5.36	2.32	4.32	4.91	3.00	4.59	5.82	5.59	3.82	5.36	3.45	5.86	3.77	5.86	2.59	5.86	5.82	6.00	4.86	6.00	5.91	4.59	4.36	5.91	4.59
STAND DEV	2.08	1.70	2.38	1.57	1.83	1.59	1.59	1.53	1.79	1.18	2.18	1.42	1.57	1.49	1.65	1.04	1.53	0.93	1.73	1.02	1.11	1.26	1.79	1.44	1.65

AGE SEGREGATED

	RATING SCALES																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
NUMBER	21	21	21	21	21	21	21	21	21	21	20	20	21	21	21	21	21	21	21	21	21	21	21	21	21
AVERAGE	5.14	2.90	5.05	4.95	3.67	3.95	4.86	5.14	3.90	4.81	3.70	4.90	3.57	5.67	3.38	5.33	5.29	5.95	5.00	5.48	5.43	4.86	4.00	5.62	4.86
STAND DEV	2.08	1.81	1.80	1.56	1.91	1.43	1.68	1.46	2.07	0.87	2.41	1.52	1.36	1.15	1.50	1.35	1.62	1.16	1.38	1.25	1.21	1.35	1.90	1.63	1.77

5.7 CANADIAN LEGION

AGE INTEGRATED

	RATING SCALES																									
	1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
NUMBER	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
AVERAGE	5.92	1.96	5.00	4.00	3.48	4.60	6.24	5.72	2.92	3.88	6.40	4.12	2.16	6.28	1.92	5.68	6.40	5.84	4.80	5.92	5.84	5.08	4.28	6.24	4.16	
STAND DEV	1.55	1.49	2.31	2.22	1.87	1.71	1.01	1.74	2.18	0.67	1.08	2.11	1.31	0.84	1.41	1.44	0.91	1.11	1.78	1.12	1.11	1.22	1.95	1.16	1.97	

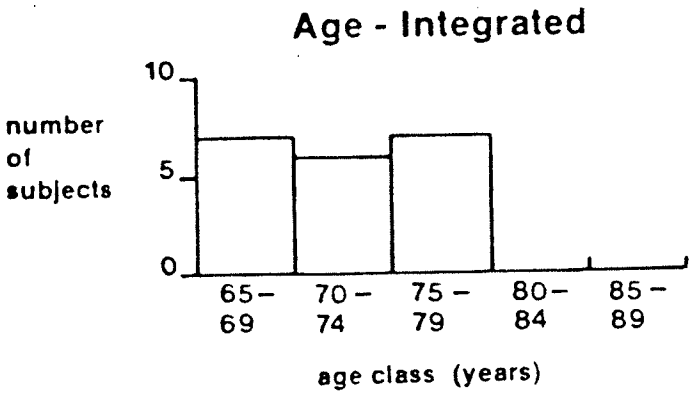
AGE SEGREGATED

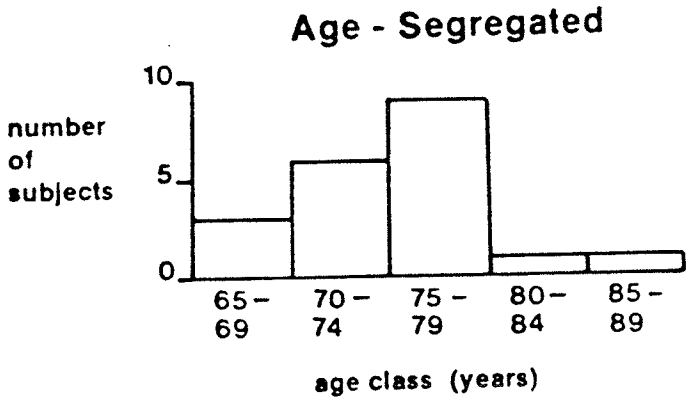
	RATING SCALES																									
	1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
NUMBER	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
AVERAGE	4.80	2.35	4.85	3.55	3.25	4.55	5.05	5.55	2.85	3.70	5.25	4.20	2.75	5.55	2.70	5.15	5.10	5.65	4.70	5.55	5.35	4.55	4.50	5.30	4.25	
STAND DEV	2.04	1.18	1.84	1.93	1.77	1.93	1.43	1.43	1.53	1.66	1.62	1.74	1.48	1.10	1.69	1.35	1.33	1.31	1.42	1.10	1.09	1.15	1.76	1.72	1.86	

5.8 CURLING RINK

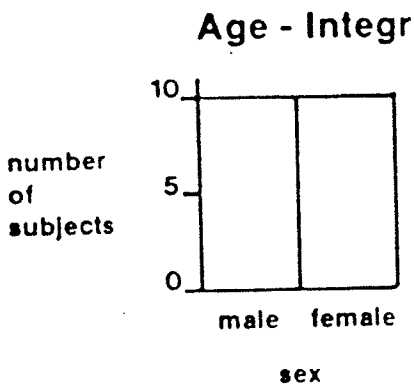
APPENDIX VI

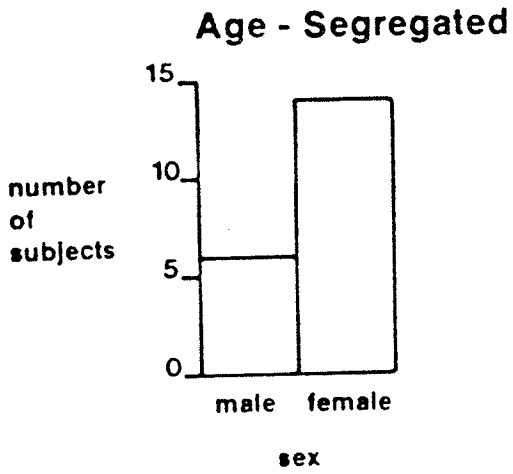
HISTOGRAMS OF THE PRELIMINARY SURVEY



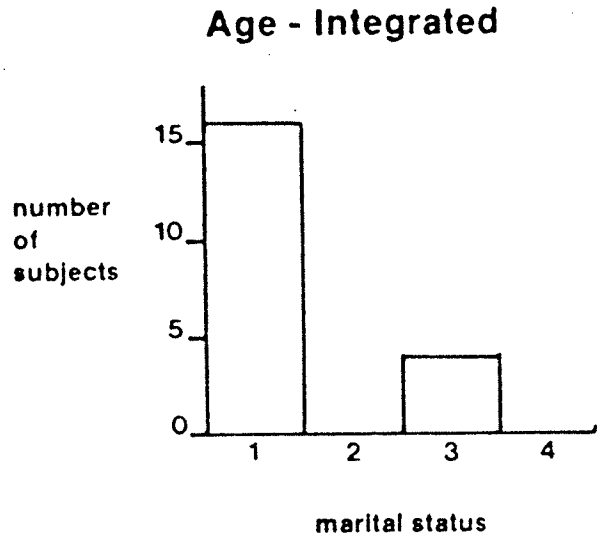


6.1 AGE COMPOSITION

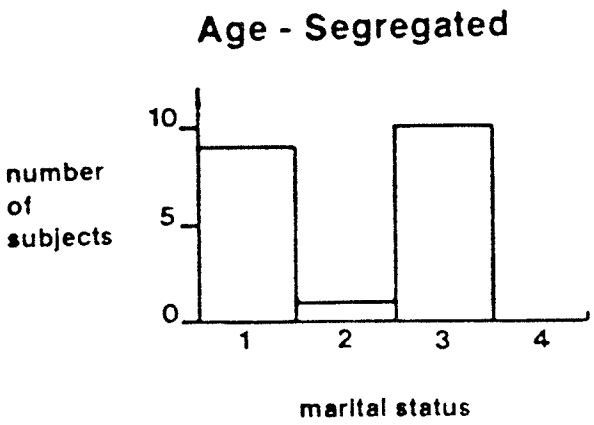




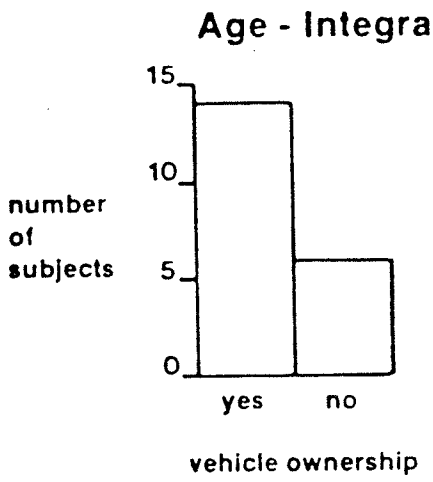
6.2 SEX COMPOSITION

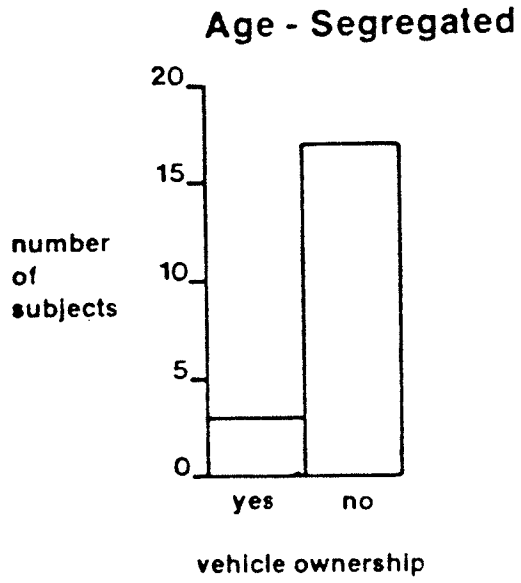


1. married
2. single
3. widowed
4. divorced

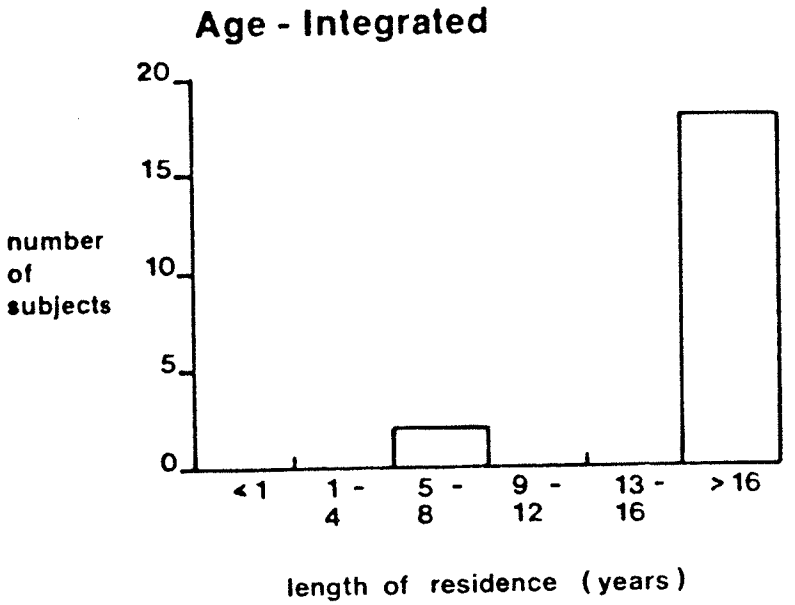


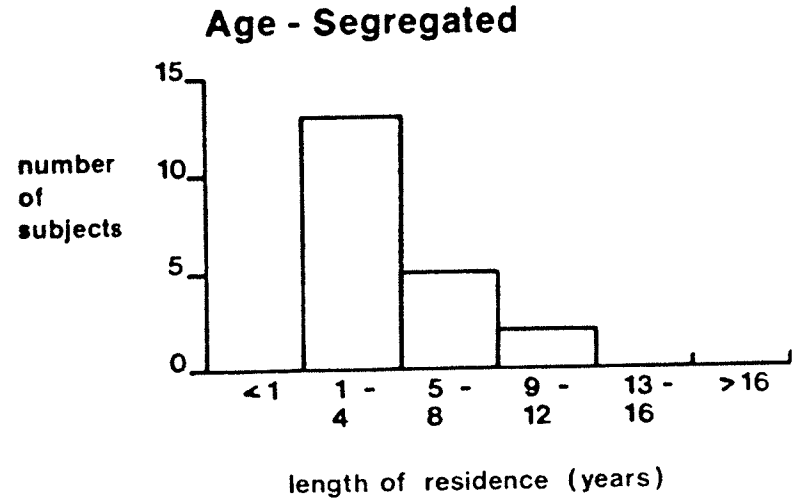
6.3 MARITAL STATUS



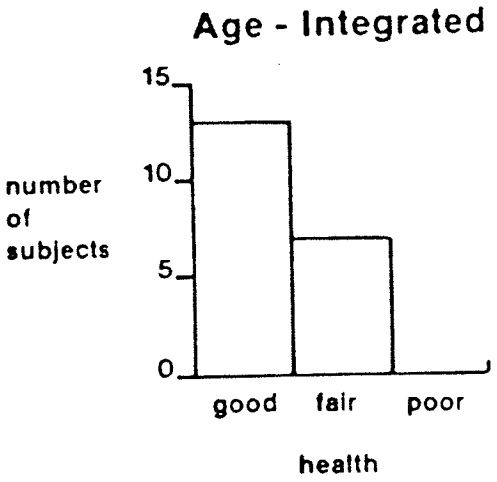


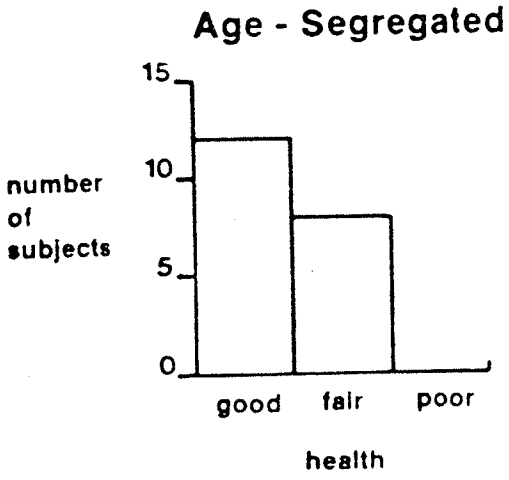
6.4 VEHICLE OWNERSHIP





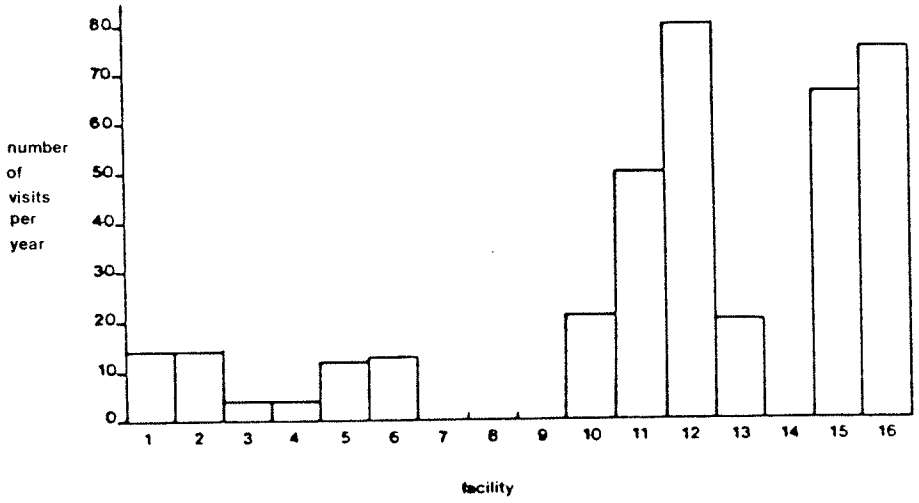
6.5 LENGTH OF RESIDENCE





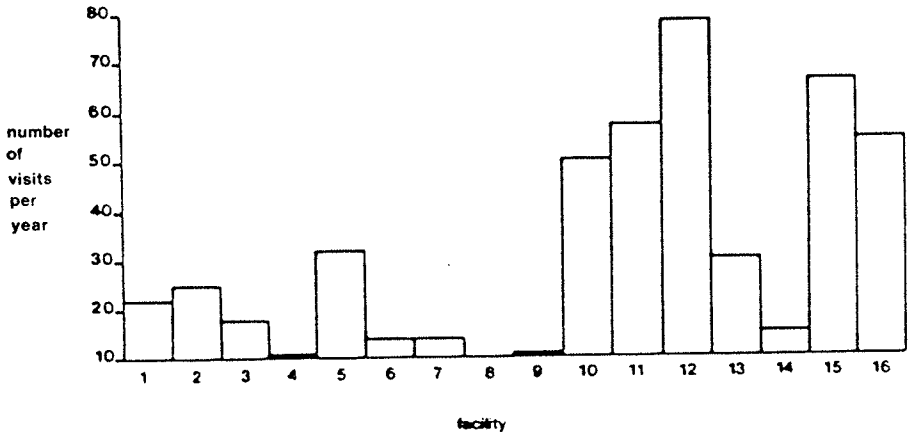
6.6 HEALTH ASSESSMENT

Age - Integrated



1 Arena
2 Curling Rink
3 Golf Course
4 Swimming Pool
5 Legion
6 A N A F
7 Theatre
8 Robert Smith Library
9 High School Library
10 Gordon Howard Centre
11 Church
12 Mall
13 Selkirk Park
14 Memorial Park
15 Home of favorite friend
16 Home of favorite relative

Age - Segregated



6.7 VISITS TO FACILITIES

APPENDIX VII

RESULTS OF THE VARIANCE RATIO TEST

RATING SCALE	THE MALL	HOME OF FAVORITE RELATIVE	HOME OF FAVORITE FRIEND	CHURCH	GORDON HOWARD CENTRE	SELKIRK PARK	CANADIAN LEGION	CURLING RINK
1. NOT IMPORTANT / VERY IMPORTANT					2.40*			
2. GROUP ORIENTED / INDIVIDUAL ORIENTED								
3. UNFAMILIAR / VERY FAMILIAR				4.14*				
4. A PLACE TO WATCH ACTIVITIES / A PLACE TO PARTICIPATE IN ACTIVITIES	2.23*							
5. NOISY / QUIET								
6. EXPENSIVE / CHEAP								
7. DISTANT / CLOSE				2.91*				
8. UNINTERESTING / ENTERTAINING								
9. LIMITED CHOICE OF ACTIVITIES / VARIETY OF ACTIVITIES								
10. FOR YOUNG PEOPLE / FOR ELDERLY PEOPLE								
11. FOR A SPECIFIC AGE / NO AGE RESTRICTIONS								2.24*
12. LIMITED AVAILABILITY / ALWAYS AVAILABLE		2.32*						
13. PHYSICAL ACTIVITY / MENTAL ACTIVITY								
14. NOT FRIENDLY / VERY FRIENDLY								
15. INFORMAL PLACE / FORMAL PLACE								
16. CONFINING / SPACIOUS								
17. INCONVENIENT / VERY CONVENIENT				2.06*	2.80**	3.36**		2.13*
18. DIRTY / CLEAN								
19. HECTIC / RELAXING								
20. DREARY PLACE / CHEERFUL PLACE								
21. UNCOMFORTABLE / VERY CONFORTABLE				2.29*	1.99*			
22. AGGRAVATING / PEACEFUL								
23. COMPANION NEEDED / NO COMPANION NEEDED								
24. OBLIGATED TO GO / NOT OBLIGATED TO GO								2.18*
25. UNABLE TO PARTICIPATE / ABILITY TO PARTICIPATE								

* significant at the 0.05 level
** significant at the 0.01 level

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