AN ANALYSIS OF THE RELATIONSHIP BETWEEN THE URBAN BASED SKIER
AND HIS RECREATIONAL HINTERLAND

by

COLIN KERR CAMPBELL

M.A., University of Aberdeen, 1964

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

in the Department
of
Geography

We accept this thesis as conforming to the
required standard

THE UNIVERSITY OF BRITISH COLUMBIA
September, 1967
In presenting this thesis in partial fulfilment of the requirements for an advanced degree at the University of British Columbia, I agree that the Library shall make it freely available for reference and study. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by the Head of my Department or by his representatives. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Department of GEOGRAPHY

The University of British Columbia
Vancouver 8, Canada

Date September 6th, 1967
ABSTRACT

The work produced to date in the field of recreation geography has shown a regrettable tendency to place the vacation area at the centre of its research focus. It is the writer's contention that such a bias has led to an imbalance in research which has inhibited the development of an adequate conceptual and methodological framework for the subject. The reasons for the noted trend lie essentially in the ideographic character of previous geographic research, combined with the strong physiographic undertones of the National Park and Conservational Movements in North America. These have asserted the attractive role of the natural resource and have obscured the conditioning effects of socio-economic influences on recreational travel. The present study is an attempt to clarify user-area relationships by highlighting the urban population source and the tangential movements emanating from it. Two aspects of such activity patterns are stressed within the work--those which determine the extent and magnitude of the movement and those which condition its direction.

The observations, developed through the adoption of the city based perspective, throw a new light on the nature of spatial interaction between the user and the recreational area. The consequential interrelationships represent the central theme of the thesis and their unity is maintained throughout by a segmentalization based upon static and dynamic relationships.
The results of the inquiry would suggest that area selection is conditioned by different factors with added distance from the urban centre. Within the day zone of Vancouver's skiing hinterland, demand is so significant that the minimization of travel time dominates directional movement patterns. With added distance, demand decreases, the travel friction effect becomes proportionately less effective, and a momentum factor is introduced. The consequence is that area selection is increasingly concomitant with area preferences, which in turn may be associated with socio-economic and skill groups. As a result directional movement within the vacation zone is strongly affected by the socio-economic characteristics of the market. Thus a polarization of movement is observed within the vacation zone, based on socio-economic and skill groupings. The passport required to enter this zone of maximum choice is increased skiing skill, partially limited by age, and income factors.

Two broad implications are derived from these findings. Firstly an emphasis on area quality or land capability for recreation may only be meaningful for the vacation zone, and then only when it is related to the differing perceptions of various socio-economic groups. Secondly it is evident that distance is not the only control factor which affects demand. A model which merely considers population and distance can scarcely be expected to predict demand accurately. Inputs which account for area quality, accessibility, location within functional zones, and the linkages between socio-economic and mobility factors, will have to be included before accurate prediction is possible.
Urbanization is increasing, the work week is decreasing, resulting in recreational congestion and societal frustration. Prediction of demand along with positive planning is necessary. The geographer is in a position to contribute to the solution of this pragmatic problem but first he must break away from the biases of the past. The aim of the present study is to indicate some of the added insights which are available through the altered perspective which asserts the city's position as a node and generator of recreational travel.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Part I</th>
<th>THE CONCEPTUAL AND PROCEDURAL FRAMEWORK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter I</td>
<td>The Conceptual Prologue</td>
</tr>
<tr>
<td>Chapter II</td>
<td>The Procedural Prologue</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part II</th>
<th>THE USER AND THE RECREATIONAL AREA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter III</td>
<td>The User and The Pattern of His Demand</td>
</tr>
<tr>
<td>Chapter IV</td>
<td>The User and His Degree of Satisfaction</td>
</tr>
<tr>
<td>Chapter V</td>
<td>The User and Area Quality</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part III</th>
<th>THE ACTIVITY PATTERNS OF THE USER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter VI</td>
<td>The Macro Scene--A Zonal Comparison</td>
</tr>
<tr>
<td>Chapter VII</td>
<td>The Micro Scene--An Area and Regional Comparison</td>
</tr>
</tbody>
</table>

| Part IV | SUMMARY AND CONCLUSIONS | 71 |

SELECTED BIBLIOGRAPHY | 78 |

APPENDICES | 86 |
**LIST OF TABLES**

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table I</td>
<td>Regional Relationship Between Visitation Rate and Average Distance</td>
<td>30</td>
</tr>
<tr>
<td>Table II</td>
<td>Comparison of Canadian National Parks Areas and Zonal Average User Satisfaction Indices</td>
<td>38</td>
</tr>
<tr>
<td>Figure 1</td>
<td>A Theoretical Framework for Recreational Movement</td>
<td>10</td>
</tr>
<tr>
<td>Figure 2</td>
<td>The Sample Composition</td>
<td>19</td>
</tr>
<tr>
<td>Figure 3</td>
<td>Location of Skiing Areas and Regional Classification</td>
<td>28</td>
</tr>
<tr>
<td>Figure 4</td>
<td>User Preferences</td>
<td>44</td>
</tr>
<tr>
<td>Figure 5</td>
<td>A Zonal Comparison of Activity Patterns and Mobility</td>
<td>52</td>
</tr>
<tr>
<td>Figure 6</td>
<td>A Regional Comparison Using Facies Triangles</td>
<td>59</td>
</tr>
<tr>
<td>Figure 7</td>
<td>A Regional Comparison Using Average Deviation</td>
<td>63</td>
</tr>
<tr>
<td>Figure 8</td>
<td>The Directional Determinant Within the Day Use Zone</td>
<td>67</td>
</tr>
</tbody>
</table>
ACKNOWLEDGEMENTS

I should like to thank Dr. A.L. Farley and Dr. J.D. Chapman, both of the Department of Geography, University of British Columbia, for their helpful criticisms of this study.

Mr. Larry Walker of the "B.C. Skier Magazine" and Mr. Dave Trendell of the Y.M.C.A., were kind enough to allow me access to their mailing lists.

I would also like to thank the many skiers whose diligence in completing the study questionnaire made the analyses possible.

The University of British Columbia provided me with both a Fellowship and some research funds which greatly assisted the project.

Finally, my wife was most helpful in the final stages of the study.
CHAPTER I

THE CONCEPTUAL PROLOGUE

In recreational studies there are three essential components worthy of study. The first is the character of the individual who participates in outdoor recreation. The second is the quality and physique of the recreational area designed to meet the needs of that individual. The third is the form of the transportational link between the residence of the participant and the recreational zone frequented.

Given these three basic elements, it is possible to study recreation through an analysis of any one of these segments. Yet, due to the inextricable way in which the three factors are inter-twined, it is often more profitable to study their interaction. The one common factor in their relationship is the spatial component and it is this consistent characteristic which the geographer may most fruitfully analyze.

Accepting this, two possible perspectives may be adopted. On the one hand one may study the concentration of recreationists at a recreational place, or alternatively, the emanation of recreationists from their urban base may be analyzed. With very few exceptions it is the former perspective which has been adopted in recreational research to date. The suggested reasons for this are threefold.
1. The historical emphasis in geography on the uniqueness of area through physiographic differentiation.

2. The availability of research monies through governmental agencies, as custodians of public recreational land.

3. The ease of sampling based upon a market passing through a specific point or zone.

It is the writer's contention that the results of the recent major studies on recreation in the United States, combined with the increasing trend towards urbanization, make it imperative that attempts should be made to study urban based demand. Thus the major purpose of the thesis is to explore the way in which such a study might be completed and structured in order to highlight the new insights available through such a perspective. The composition and order of the thesis are specifically designed to emphasize the relationship between the user and the use area, at all times. Hence segmentalization of these facets has been avoided. Instead, the division has been made between the static aspects of these relationships described in Part II and their dynamic counterparts, which are studied in Part III. The distinction between dynamic and static lies in the degree to which distance and mobility factors are stressed in comparison to demand, preference, and perception factors.

Before advancing to this stage, however, it is necessary to set the study in its proper perspective. Chapter I will provide a part of this background by reviewing the antecedent bibliography and
presenting a conceptual framework. The former will serve to justify the foregoing, while the latter will assist the reader in re-orientating himself to the centrality of the urban base as the starting point of the study.

Review

The history of recreational writing is, in one sense, as old as the history of travel, but recreational geography has only been a distinct entity for the short period of approximately thirty-five years. This single fact colours certain aspects of the methodology involved in the foregoing thesis. The degree of specialization, increasingly apparent in other branches of geography, with its attendant advantages and disadvantages, is not so observable in recreational geography. The insolubles combine to force the researcher into the role of the generalist, and thus it is difficult to adopt a definitive empirical approach with a high level of abstraction. Such a situation is neither to be rejoiced in or to be regretted, it is simply the stage which has been reached in this particular facet of geography. In the developmental process recreational geography is still in many ways, at the inventory stage. Nevertheless it must be conceded that, with the remarkable progress which has been made in this decade, its advance to the stature of a nomothetic science must soon become a reality.

In the thirty-five years, leading up to the present stage, three periods of development may be delineated from a consideration of
the available literature—an early period to 1945, a post-war period to 1955, and a contemporary period.

In the early period, with some notable exceptions the classical regional approach dominated. The regional method descriptively catalogued the characteristics of areas, working across the whole range of physical and economic factors. These writings brought to light certain valid points regarding recreation, but many articles which appeared in geographical journals were simple descriptions of individual


3. Ibid. A. Selke makes a number of interesting suggestions with regard to analyzing the number of tourists visiting Germany. Joerg, op. cit., p. 196, states that "any program of recreational land utilization must consider particularly the needs of the city dweller. In view of this intense urban concentration the matter of proximity should be taken into account in the provision of recreation areas." Brown, op. cit., attempted to develop a terminology in tourism.
journeys, \(^4\) or national, provincial or state parks.\(^5\) At best there were
some very relevant points hidden in a morass of regional description,
or at worst an almost "tourist brochure type" assessment of individual
"geographical" features. Nevertheless, in defence of the literature
of this period, it could be argued that reliable statistics were not
available at this time and, in addition, population movement was rela-
tively limited, for the majority of people, due to economic restrictions.

In the post-war period these restrictions diminished and the
frequently quoted determinants of the contemporary recreational move-
ment were first realized.\(^6\) Hence, there emerged, as in the mainstream
of geography, a period of transition. Contemporaneously, there existed
a strong regional, though less environmentalistic approach and evidence
of a more systematic scientific school. The two characteristics may
best be exemplified in a comparison of the work produced by Harper\(^7\) and

\(^4\)Examples of these are: Helen V. Kerr, "Motor Vagabonding on
Vancouver Island," C.G.J., 1 (July, 1930), 253-268; Leslie Bell, "Up
and Down the Peace," C.G.J., 2 (September, 1935), 117-124; Edward S.

\(^5\)Robert J. C. Stead, "Canada's Mountain Playground," C.G.J., 14
(June, 1937), 319-335; Ruth D. Golman, "Garibaldi Park," C.G.J., 3
(November, 1931), 339-347; J. Horace McFarland, "Are National Parks
Worthwhile?" Sierra Club Bull., 8 (1911-12), 236-239; George H. Primmer,
"Isle Royale--Potential National Park," Ec. Geog., 14 (October, 1938),
349-353, and many others.

\(^6\)It often seems that every article on recreation commences with
a statement regarding increased disposable income, the reduced working
week, greater mobility, etc.

\(^7\)Robert A. Harper, Recreational Occupation of the Moraine Lake
Region of Northeastern Illinois and Southeastern Wisconsin, Paper No. 14
(Chicago: University of Chicago Publications, Department of Geography,
1950).
Porter, writing on recreational land use at the same time. Harper writes a classic regional dissertation with recreation playing the role of the ideographic theme, the personality of the region, whereas Porter goes a great deal further through a nomothetic approach to recognize causal relationships and to develop valid generalities concerning land use. It should be noted, however, that Harper does make the point that proximity to an urban centre is often as important a factor as outstanding beauty, in the success of a recreational area. Somewhere in between these two extremes lies the doctoral dissertation by Wolfe. While the dissertation describes a regional inventory, an article written earlier by Wolfe does relate urbanization to the growing demand for recreation. This demand, he suggests, may be partially determined by the socio-economic characteristics of the market—one which is almost exclusively composed of urban dwellers. Miss Eiselen, in her study of U.S. Highway 16 in South Dakota, makes the important

---


9 Harper, op. cit., p. 12. "It (the study) should throw some new light on the conditions and circumstances of the development and present functioning of recreational occupancy and provide some criteria for differentiating the recreational occupancy of one recreational region from another."


point that the tourist industry is highway orientated. Regrettably, she fails to expand this factor even though there can be little doubt that her emphasis on lines of movement and linkages was a significant contribution to the literature of the time.

Thus, the post-war period was typified by regional studies slightly orientated towards recreation\(^{13}\) and a number of studies suggesting new ideas, but exhibiting real deficiencies in terms of an adequate conceptual framework or a suitable statistical approach.\(^{14}\)

The final period, since 1955, has seen an expansion in the use of statistical techniques in recreational research. They have been used to increase the scope of inventory, and has assisted the rationalization of planning and management decisions. Increased public awareness of the problem of finite space and seemingly infinite public demand has made considerable sums of money available for research applied to this societal problem. A consequence of this has been the burgeoning of recreational literature in a wide range of disciplines


and agencies. The majority of this research, in common with previous periods, has been involved with classification and inventory of the recreational resource, albeit through the use of more refined techniques. Much of this work is beyond the scope of this study. Consequently, only those elements from contemporary literature which are relevant to the present investigation will be reviewed, and this will be in context, throughout the thesis. Suffice to say that despite the advances noted above, there has been a regrettable lag in the development of a theoretical framework to encompass the new techniques which are now appearing in recreational studies. This omission is not simply one of the contemporary period for it has been noted in each of the preceding periods. Brown, for example, in 1935 offered what he called an "Invitation to Geographers," in the following terms:

> From the geographical point of view the study of tourism offers inviting possibilities for the development of new and ingenious techniques for research for the discovery of facts of value in their social implications in what is virtually a virgin field.\(^{15}\)

It would appear that this invitation was declined, for in 1949 George Deasy could say that:

> ...because of the inadequate attention paid to the tourist industry by Geographers, there exists a concomitant dearth of techniques adaptable to the collection, analysis, interpretation and cartographic representation of geographical data on the subject.\(^{16}\)

\(^{15}\)Brown, op. cit., p. 471.

\(^{16}\)Deasy, op. cit.
Finally, in the late fifties, Marion Clawson said, when referring to the economic aspects of outdoor recreation, that:

...the need is for basic research. Not only in this aspect but for other aspects of outdoor recreation. There is an equally great need for research applied to specific areas and problems, but the latter is likely to be relatively unproductive until a better theoretical framework has been developed.\textsuperscript{17}

The Conceptual Framework

Having noted this omission and having realized the necessity for a clear definition of the writer's research perspective, a diagrammatic expression is presented in Figure 1. The framework has no mathematical coordinates and its major purpose is to reorientate the reader to the urban-based perspective of the thesis. A tertiary purpose lies in the suggestion that it provides a meaningful viewpoint in the urbanized continent of North America and, if developed, might yield extended opportunities for generic studies in recreation geography.

Essentially four preconditions underly the conceptual framework or "thinking" model illustrated in Figure 1.

1. The city is the generator of recreational demand and should be the starting point for research.

2. Some provision should be made to allow a clear definition

\textsuperscript{17}Marion Clawson, \textit{Land and Water for Recreation} (Chicago: Rand McNally, R.F.F., 1963), p. 100.
### Abstracted Classification

<table>
<thead>
<tr>
<th>Activity Pattern</th>
<th>Activity Characteristics</th>
<th>Recreational Form</th>
</tr>
</thead>
</table>
| **1. Recreationist.** | - Time period less than two days.  
- Minimal financial outlay.  
- Activity occurs relatively frequently during the year.  
- Activity dominates Journey secondary. | Metropolitan Recreational Hinterland. (Scattered tangentially to the city.) |
| **2. Recreational Vacationist.** | - Greater tendency towards number one, but extended time and distance factors allow a more flexible activity pattern. | Regional Recreational Complex. (Non-linear grouping.) |
| **3. Vacationist.** | - Expanded time - more than four consecutive days.  
- Greater expenditures per person/day.  
- Event occurs infrequently during the year.  
- Journey primary Activity secondary. | Vacation Service Region. (Highway oriented: linear on vacation circuit.) |

### Diagram Description

- **City of Origin.**
- **Recreation Centre.**
- **Recreational Vacationist.**
- **Vacationist.**
- **Other Cities.**
- **Recreation Places.**

**City of Recreation Recreational Vacationist.**

- Recreation Centre.
- Recreational Vacationist.
- Vacationist.

**Vacation Service Region.**

- Highway oriented: linear on vacation circuit.
of the nature of the recreation market.

3. Attention should be focussed on the spatial relationship between the city and the recreational area, especially as a consequence of the patterns of movement exhibited by users.

4. Both the vacation and recreation industries are accepted as being to a considerable degree, highway-orientated.

This model suggests that recreationists and vacationists be placed at two ends of a spectrum, due to the contradictory nature of their aims and opportunities. The recreationist, to whom the activity is dominant in the recreational experience, will tend to spend less time travelling and will be less concerned with the nature of the journey from the city to the recreation area. Thus for expedience his pattern of movement will be radial from the urban base. At the other end of the spectrum is the vacationist, who is primarily concerned with seeing as many places as possible in a minimum time period. The route described will tend to be circuitous and the journey will be of greater significance than any activity involved. Between these two extremes there is the recreational vacationist. His "life style" is so dominated by the particular recreational activity that it is powerful enough to determine the character of his vacation period. Because the activity is still important, the radial pattern will be present but the route may well be "oblong" due to the extended time and distance involved.
These patterns of movement and varying recreational demands also contribute to the character of the frequented area. The urban hinterland region is scattered on the periphery of the urban zone of influence, usually less than two hours driving time from the city. The regional recreational complex may be thought of as a nucleated group of recreational areas providing a variety of high quality "products" to the specialized recreational vacationists. Finally, the vacation circuit will tend to have linear recreational facilities close to those major corridors of movement, most of which will be of a service nature.

Based upon the conceptual framework described above, the study of Vancouver skiers is centered on the activities of recreationists and recreational vacationists. It must be conceded that for skiing, the recreational-vacationist group must be divided into two sub groups -- the weekender and the vacationer. Such a focus, which includes the activities of the recreationist, was specifically chosen because of the paucity of research which this area has received. One need only refer to a critique of the findings of the O.R.R.R.C. Reports to the President, to substantiate this lack.\(^{18}\)

I think perhaps the most important single fact contained in this report came as a surprise to many people. This was the fact that America's greatest need for recreational opportunities is in or near

It is hoped that the present study will offer a new and necessary perspective on this subject, one which, to this time, has been given scant recognition by either geographers or social scientists in general.

---

Following the description of the conceptual background in Chapter I, it is logical to attempt to translate the theoretical desire into a practical research framework. Two major issues are worthy of consideration. One is the choice of Vancouver as the urban base and skiing as the selected recreational activity. The other is the methodology employed in data collection.

The choice of Vancouver as the population source was largely one of expedience; the choice of skiing resulted from the fact that the activity, compared to other activities, such as mountain climbing, hiking and golf, etc., exhibited a group of study characteristics which made it the most suitable recreational activity for this particular piece of research. For example, the motivation to ski ranges from an aesthetic enjoyment of the natural environment, through simple physical pleasure in exercise, to the possibility of some level of status achievement in social interaction off the ski slopes. Thus, a wide range of recreational motivations may be viewed through this single medium of skiing. Secondly, skiing is an activity which is well-defined with a clear commitment and is therefore readily observable. If a group with skis sets off towards a skiing area there is a high probability that they will spend a portion of that day skiing. This
may seem a trifle banal but in an activity such as hiking, it may be very difficult to distinguish between the Sunday afternoon stroller, the butterfly collector, and the serious hiker—all these may hike at some time or another but in each the activity plays a different role. Thirdly, as recreational places, skiing areas are easily identifiable and each has a limited geographic locale, allowing them to be treated as point destinations. Also, these areas provide two types of facility that are common to a wide range of recreational areas. On the one hand they have distinct physical resources such as vertical drop, snow quality, etc., which are related to skill requirements, and, on the other hand, they have amenity factors such as parking space, concession stalls, etc.

To summarize, skiing as a recreational activity exhibits many of the characteristics of other forms of recreational activity, yet has a few special qualities which make it eminently suitable for analysis. Fortunately, within the range of a nine hour automobile journey from Vancouver, there are more than thirty available commercial skiing areas, ranging greatly in both quality and proximity to Vancouver. Thus, the Vancouver skier has a wide spectrum of choice.

Despite the aforementioned characteristics it is not suggested that the specific approach and the methods used in this study cannot be applied to other activities, in other situations. Indeed, one of the motivations for this piece of research is the hope that such an analysis, based on a city should prove sufficiently valid to induce attempts at wider application.
Unfortunately, because of the novelty of the topic, there are no real guidelines for a research approach or even for data gathering. Those works which have investigated skiing demand, such as "The Skier Market in Northeast North America,"¹ or "Skiing Trends and Opportunities in the Western States,"² or "Report on Skiers 1966,"³ have, without exception, been limited to a sample selection which has been drawn from skiers visiting the ski slopes. All three studies offer valuable information on skiing, although the survey of the western states must be singled out because it used more sophisticated statistical methods than the other two studies. These works, however, are all concerned with the market picture and place little emphasis on the development of a research methodology or conceptual framework. George Besch's thesis, titled "Land Use and Other Considerations Needed for Developing Winter Sports Areas in Michigan,"⁴ is similarly area orientated and is little more than a catalogue of guidelines for the operation of skiing areas. The earlier writings completed on skiing are largely descriptive of the growing interest in this phenomenon.


²Roscoe B. Herrington, Skiing Trends and Opportunities in the Western States (U.S. Forest Service Research Paper, INT. 34, 1967).


⁴George Besch, "Land Use and Other Considerations Needed for Developing Winter Sports Areas in Michigan" (M.Sc. thesis, Michigan State University, 1963). (Mimeographed.)
They merely note the increased interest in this sport and the possible contributions which it might make to the tourist industry of various parts of North America. As a consequence very little of the available literature on skiing has been of value in the organization of the study. Since the approach used in this work diverges from the aforementioned analyses, the adoption of tested procedures is largely precluded.

It was mentioned early in Chapter I that one of the reasons why the city orientated procedure had not been extensively adopted was because it was much easier to draw an accurate sample from the recreation area. The problem of deriving an accurate city-based sample was not solved by the writer, largely due to temporal and financial limitations. If more information was included in the decennial census regarding recreation participation, it would be much easier to derive a suitable sample. However, three possible alternative approaches were considered by the writer.

The first alternative is to go to the ski slopes and take a systematic sample, either as the ski tows are being used, or as skiers arrive and depart from the skiing area by car. This system was rejected due to the difficulty of visiting thirty areas at the end of the season and identifying a systematic sample of exclusively

---

5 See Chapter I, footnote 1, where selected references on early skiing demand are listed.
Vancouver skiers. It might have been feasible for local areas but not for those at a considerable distance from Vancouver. In addition to those drawbacks the emphasis on area selection is antithetical to the urban source approach.

Alternatively, it might be possible to take a random or systematic sample of skiers as they use ski repair, ski rental or ski retail outlets. However, it seemed probable that the type of skiers most frequently using those facilities would tend to be biased towards either beginners or very experienced skiers. An additional problem arises in that a careful test would be necessary first to determine which outlets in the city would best provide a suitable sample.

Another approach involves the derivation of a weighted sample from each of a wide range of ski clubs. However, the resolution of the various biases would pose severe problems. This is especially true since it would be difficult to establish the nature of the weightings. Some clubs are highly specialist, some are for the beginner. Nevertheless, the approach which was finally adopted was akin to the above method, and although it did not provide a random sample of the Vancouver skiing population, the sample obtained (see Figure 2) was considered adequate for the study. From Appendix B it can be seen that the sample was quite heavily biased in favour of the committed, experienced

---

6Since the complete population was not sampled the group questionnaired could not be considered as a random sample. Appendix B indicates how this sample compared with others drawn by other researchers.
An eight percent sample was drawn from subscribers to 'B.C. Skier Magazine' during the month of May, 1966.
skier. Such a bias was accepted (Figure 2), partially because circumstances prevented the adoption of a suitable random sample of the total skiing populations of Vancouver and partly because the committed skier's habits are especially important in indicating skiing trends.

The very existence of the aforementioned bias lies in the fact that the total population was composed of those Vancouver skiers who contributed to B.C. Skier Magazine. Its circulation\(^7\) extended well beyond British Columbia, but of its seven thousand subscribers, three thousand were located in the Vancouver Metropolitan Area. An eighteen per cent sample was selected through the use of random numbers and a return questionnaire was mailed to this group in April of 1966, yielding a forty-one per cent return. Consequently, an eight per cent sample was derived from the total population of three thousand Vancouver skiers who contributed to this magazine. To the extent that the response was high and the number of unusable returns low, it would be fair to say that the design of the questionnaire met with some success. Three groups of questions were asked (Appendix A). One group queried present and potential skiing preferences; another group enquired about the use and rating of skiing areas retrospectively over the 1965-66 season, while a third group dealt with the specific socio-economic profiles of the individual skiers.

\(^7\)This magazine is now out of print.
To try to offset the expected bias of the B.C. Skier Magazine sample, a nine per cent sample was drawn from six hundred skiers who belonged to the Y.M.C.A. ski school. It was assumed that these were mainly beginners and it was hoped that this could be used for comparative purposes. Most of the respondents were children and it was evident that their mobility was certainly limited to the local slopes. Beyond this little could be derived from the responses.

The only exception to these urban based questionnaires was one distributed to twenty-six skiing areas. Some useful descriptive material was obtained from the responses to this questionnaire. It is true to say, however, that the main conclusions reached in this study are based on the sample taken from B.C. Skier Magazine subscribers. The fact that there is so great an emphasis on one questionnaire is recognized as a weakness but it is felt that the study has yielded sufficient information to give at least guidelines for the analysis of an urban recreational hinterland. The first portion of the analysis, which emphasizes the static relationships between the user and the recreational area, forms the core of the following three chapters, which highlight user demand, user satisfaction, and user preferences.
CHAPTER III

THE USER AND THE PATTERN OF HIS DEMAND

The ultimate question which is posed in most recreational studies concerns the estimation of the economic benefits which may be derived from a private or governmental recreation development. In order to calculate these benefits it is necessary to identify one or more measurable control factors which may condition the size of demand generated. As with other products, the proximity and magnitude of the potential market are key factors, but in recreation the market gravitates towards the product. Thus the role of the distance factor is primary and as will be seen later in the chapter, it has been regarded by researchers as the major control factor. There is no intention in this thesis to contest the centrality of the spatial relationship between the user and use area, but rather to enlarge upon it, through viewing it from an urban rather than from a resource perspective.

It might well be argued that a discussion of demand should take up a terminal rather than an introductory position because it may be regarded as a consequence of user preference, derived user satisfaction and the permissive or restrictive effects of socio-economic factors. However, the writer feels that although it may be thought that the visitation rate resolves all these factors into a single
numerical value, the thesis is structured in such a way as to increas­
ingly refine and expand upon this measure. The relatively crude
issue of attendance will be elaborated on as the work progresses,
through the revelation of the characteristics of users and their acti­
vity patterns. Thus the present chapter will investigate demand by
attempting to meet a trilogy of objectives. The first will be to
establish through a brief review of the contemporary literature, the
recognition of the distance variable as the major parameter of demand.
The second will be to delimit functional demand zones and to describe
the pattern of skiing demand emanating from Vancouver. While a third
aim will involve a resume of the implications which may be derived
from the previous findings.

Several studies have attempted to isolate the major parameters
of recreational travel.¹ Volk, for example, investigated median family
income, per cent of total population living in urban places, distance
travelled and mobility as measured by per capita automobile ownership
per state. After using multiple regression to determine the relation­
ship between those parameters and the visitation rate to a number
of National Parks in the U.S.A., he found that,

¹Roy I. Wolfe, Parameters of Recreational Travel in Ontario,
Research Paper No. R.B. III (Ontario Department of Highways, 1966);
George F. Deasy and Phyllis Greiss, "Impact of a Tourist Facility
on Its Hinterland," A.A.A.G., 56 (1966), 290-306; Donald J. Volk,
"Factors Affecting Recreational Use of National Parks" (a paper
presented at the Annual Meeting of the Association of American
Geographers, Columbus, Ohio, 1965). (Mimeographed.)
...in every instance the most important factor affecting attendance proved to be the distance of the recreation area from the place of residence of the visitor. In all cases distance accounted for at least 60% of all total variation, with figures running as high as 90% in a few cases.²

This empirical finding by Volk has been noted in an intuitive way by a number of writers. Trotter, for example, when investigating the demand exerted on parks in Illinois State, declared rather banally that,

location within the populous sections of the state and proximity to large urban centres are significant factors in park attendance.³

Various equations have been used to predict demand. Most of these have been developed around gravity modes. The Stouffer Intervening Opportunities model, the Kepler-Kneutonian model and the Zipf Interaction model have all been adapted for use in recreational studies.⁴ The work of the sociologist, William Catton, is particularly significant in this sphere, for he introduced a rating index to be used as the attraction value in the demand equation.⁵ Knetsch,⁶ Wolfe,⁷

² Volk, op. cit., p. 5.


⁵ William Catton, "Measuring a National Park's Attendance" (University of Washington, 1964). (Mimeographed.)


⁷ Wolfe, op. cit., p. 18.
Ullman and Ellis and Vandoren are others who have developed models centred on the spatial relationship between the visitor's home and the recreation area.

All these aforementioned models which have attempted to explain demand, have emphasized the role of distance as a crucial determinant. This spatial factor combined with a supply or population component is manipulated in various ways to explain the demand or the visitation at a particular point. The implication in many of these studies is that around the recreation area there is a concentric diminution of demand with increased distance from that point—a uniform friction factor. In this regard there is perhaps a parallel with the development of urban growth theory. Urban sociologists began with a concentric zone theory then graduated to the less graphic, but more meaningful sector and multiple-nuclei theories. Already Deasy

---


and Greiss in their "Impact of a Tourist Facility on its Hinterland" have suggested some of the factors which might distort such a neat concentric picture. These are: transport induced distortion, intervening opportunity factors, internal regional characteristics, and the uneven impact of advertising. It is possible that one other may be added, as a result of a city based perspective. This represents the varying roles of the day, weekend and vacation zones as they attract different socio-economic groups for different forms of activity. As will be seen later in the thesis the visitation is affected by those differing characteristics. The actual definition of these zones was determined in the following way.

Since the automobile dominates as the major means of skiing transportation it is possible to relate visitation periods, day, weekend, and vacation, etc., to travel time zones. Thus to some degree this temporal value is assigned distinct spatial co-ordinates. The extent of these zones was derived in an objective manner. The skiers were asked the maximum distance they had travelled on a day, weekend or vacation trip, and from the average of these figures the functional day, weekend and vacation zones were determined. The range of the day zone extends one hundred and ten miles to Mt. Baker. The weekend zone reaches out to Vernon, which lies 300 miles from Vancouver, while the vacation zone lies anywhere beyond this point. Obviously there are no exact boundaries. It is quite probable that some enthusiastic

\[13\] Deasy and Greiss, op. cit.
skiers may well go three hundred miles for a day's skiing, but the zones described form meaningful functional units for the majority of the market. For refinement purposes these zones were subdivided into regional clusters, determined on a locational and directional basis. These eight regions with their component skiing areas are illustrated in Figure 3.14

Having ascertained the primary role of distance as a demand control factor, and having delimited the functional zones, and regional divisions derived from the data, it is now possible to describe the pattern of demand exerted by Vancouver skiers.

Vancouver is located on the northwestern seaboard of the North American continent. It is a Canadian city, but the United States-Canada boundary would seem to have little impeding effect on area visitation. However, its seaboard location prohibits a circular hinterland shape. The western segment is almost non-existent due to the travel friction factor of ferry transportation. The skiing areas of Vancouver Island, the most important of which are Green Mountain and Forbidden Plateau, serve dominantly day use functions for the Island's cities. However, their physical attributes and general amenities are not sufficiently good to overcome the difficulty of reaching these

14Originally the writer selected the regions, Southern U.S.A. and Southeastern U.S.A., on the basis of their location relative to the position of Vancouver. In retrospect this is recognized as being ambiguous. The "Northwest Pacific Coast Region" and the "Rocky Mt. Region" would have been more meaningful.
FIGURE 3
LOCATION OF SKIING AREAS AND REGIONAL CLASSIFICATION
areas from the mainland. Thus they hold little attractive power for the automobile-orientated Vancouver skier who prefers to do his skiing on the mainland. However, having excluded the western segment, the activity patterns of Vancouver skiers are directed towards the north, south and east. The extension towards the east is particularly significant due to the general improvement in climatic conditions as one moves towards the centre of the continent. The snow is generally of a drier variety than on the coast, and there are longer hours of sunshine.

As might be predicted, the greatest use, accounting for almost fifty per cent of all use, occurs on the North Shore slopes, with Grouse Mountain and Mount Seymour contributing almost equally to this total. Whistler Mountain comes next in total visitor days, even though it opened up halfway through the 1965-66 season. Offsetting this late start, the novelty value and its long season extending into May contributed to this high figure.\(^{15}\) Mt. Baker, twice the distance from Vancouver, though not twice the travelling time away, was fourth with a visitation rate of 370 visitor days.

The general relation between these four leading areas would suggest a fairly close correlation between demand and distance. However, when all twenty-six of the skiing areas were subjected to

\(^{15}\)An estimate of the number of Vancouver skiers using Whistler Mt. was calculated using ticket sales as compared to proportional visitation by sample skiers. The figure derived revealed that Whistler Mt. received 9,000 Vancouver skiers in the 1965-66 season.
Table I

Regional Relationship Between Visitation Rate and Average Distance

<table>
<thead>
<tr>
<th>Region</th>
<th>Average Distance (Miles)</th>
<th>Visitation Rate (Visitor/Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Shore Mountains</td>
<td>11</td>
<td>2203</td>
</tr>
<tr>
<td>Squamish Mountains</td>
<td>63</td>
<td>504 Day Zone</td>
</tr>
<tr>
<td>Mt. Baker</td>
<td>110</td>
<td>370</td>
</tr>
<tr>
<td>South U.S.A.</td>
<td>187</td>
<td>595 Weekend Zone</td>
</tr>
<tr>
<td>Okanagan</td>
<td>290</td>
<td>332</td>
</tr>
<tr>
<td>Kootenays</td>
<td>513</td>
<td>82</td>
</tr>
<tr>
<td>Canadian National Parks</td>
<td>563</td>
<td>197 Vacation Zone</td>
</tr>
<tr>
<td>S.E. U.S.A. Ski Resorts</td>
<td>866</td>
<td>266</td>
</tr>
</tbody>
</table>

regression analysis no linear relationship was observed. With a log transformation the correlation does improve, but remains below a significant value. However, when the areas are grouped into their regional clusters in Table I certain relationships may be noted.

It would appear that some relationships do exist between visitation rate and distance, and the lack of a linear relationship, noted above, may be a consequence of either the small number of areas sampled or the fact that a number of areas in, say the weekend zones, are really day orientated to local markets. What is perhaps significant is the role of the distance variable in the vacation zone. Even when

\[ \text{Value of } R = .16.\]
average visitation rates per region are taken, there is no evidence to suggest a diminution of demand with distance in this vacation zone. There is a remarkable consistency of demand irrespective of the distance factor. The pull of Sun Valley is particularly significant indicating it to be an international skiing centre, where the quality of the area and the services provided act in a positive way to overcome the barrier of travel time. Furthermore, it may be suggested that beyond the weekend zone a momentum factor may be present, and as will be seen in Chapter VI this has clear directional components which may be associated with particular socio-economic and skill groups. Both these aforementioned factors would lead one to the conclusion that it is in the sphere of the "floating" visitor to the vacation zone that the greatest degree of market differentiation may occur. Furthermore, this would justify the belief that it is in the vacation sphere that the greatest amount of emphasis must lie in the quality of the recreation resource and its development. Indeed, the momentum factor is significant enough to justify an additional category in the thinking model described in Chapter I. We might call this group the vacational-recreationist group. Their significant desire would be to reach an international class of recreation area, where they might spend extended time in the one location. In addition, these findings might partially vindicate the viewpoint that previous research in national parks, for example, overemphasized the physical quality of the park to attract visitors. While the writer feels that many of these parks are visited because they lie on part of a vacation circuit a certain part of the
visitation is orientated towards the Recreationist, Recreational Vacationist, and "Vacational Recreationist." It is this last group who place major emphasis on the physical quality of the resource and who experience maximum sensory contact with the resource. The vacationist, on the other hand, receives most of his sensory stimulation through visual perception only. It would be extremely interesting to investigate the demand composition of a national park in terms of the four groups mentioned above. Wider understanding of their perceptions and motivations might lead to more positive planning of recreational areas. It is suggested therefore that the researcher must penetrate more deeply into the user characteristics which are associated with the demand factor. The first attempt at such refinement follows in Chapter IV where the question investigated is the relationship between distance, user demand and user satisfaction.
CHAPTER IV

THE USER AND HIS DEGREE OF SATISFACTION

In the previous chapter it was suggested that the visitation rate is a numerical value which resolves a number of variables such as distance, preferences, time segments and others, into a single measure. However, it might well be argued that a demand value is really only indicative of a compromise between these separate factors and in no way reflects the benefits derived by the individual, from the particular enterprise. There tends to be a syndrome suggested in economic studies whereby linkages are placed between entrepreneurial success, high visitation rate, popularity and user satisfaction. It is the aim of this chapter through the use of the urban-based approach, to throw some light on the relationships which exist between user satisfaction, demand and distance between the city and the recreation area. A brief prologue will outline the method of measurement utilized to determine the user satisfaction index.

Basically two principal methods have been applied in previous research to estimate user satisfaction--the one site interview and the retrospective rating system. In the former case the recreationist is asked his opinion of the area which he is visiting, be it a campground, picnic area, reservoir, or whatever. This approach has the advantage of an area sampling system, but the disadvantage that
some personal emotional conflict and success of the day may alter the overall assessment. In addition the visitor is faced with the problem of giving a quality assessment of a recreation site without a definitive yardstick of comparison available. Alternatively, another method can be adopted whereby particular groups or individuals, who have visited a number of specified recreation areas are asked, retrospectively, how they would comparatively rate the various areas which they had visited. Here the problem of arriving at unified rating scales may appear, but a suitable system for overcoming this has been derived.\(^1\) Another criticism lies in the very reasonable belief that the values assessed by various individuals would show such a latitude that the derivation of meaningful results would be impossible. Fortunately, Catton has tested the retrospective rating system and his results indicate that both these criticisms are minor in character and in no way prohibit the derivation of meaningful results. As Catton says,

> Though it was alleged that park attractiveness could not be meaningfully rated, the approach taken in this study did yield scale values which relatively measure it.\(^2\)

The retrospective rating system was adopted in the skiing project because two characteristics made it preferable to the cited alternative of an on-site interview. On the one hand the study was

---

\(^1\)A method suggested by William Catton, though not employed in this study, is found in Alen L. Edwards, *Techniques of Attitude Scale Construction* (New York: Appleton-Century-Croft, 1957), Ch. 5.

urban based, and, on the other hand it was retrospectively orientated over the 1965-66 season. In addition the fact that skiing areas were point destinations and were common to a large portion of the market, made it highly suitable. The actual numerical value was derived in the following manner. The ratings from "poor" to "good" on the questionnaire were given values from 1 to 5. The mean values for the individual skiing areas were then derived and were converted into a scale where 1 represented zero and 5 represented one hundred. The means thus derived ranged from a low of 17 for Hollyburn Ridge to a high of 100 for Big Mountain, Montana, and Aspen, Colorado.

**Description of Results**

On the broadest scale, it is interesting to note that the day zone, taking all areas into consideration, received a mean value of 50 which, when reconverted gives a "questionnaire rating" of "average." This suggests intuitively that the local areas have been utilized by the respondents as a mean on their rating scale. Likewise, the weekend zone receives a mean rating of 73 which is very close, when "recon­verted" to the questionnaire rating of "above average", while the vacation zone receives an average rating of 83. Two observations may be made from these statements. There is clearly an increase in satisfaction with increased distance from the urban base. Also there is

---

3See Appendix C.
an indication that the significant increase in user satisfaction is
to be found as the skier moves from the day into the weekend zone,
rather than from the weekend into the vacation zone. When the subtler
relations of the regional variations within each zone are investi-
gated, these statements are upheld, but with certain qualifications.

Within the day zone, skiers rate the Squamish region and the
Mt. Baker region twice as highly as they do the more proximous North
Shore slopes. Undoubtedly there must be some relationship between
this low rating (27) and the overcrowding and poor physical conditions
of the local slopes. This suggestion was verified by a number of
the questionnaire respondents. One lady, for example, made the
following statement:

We are a family of two adults and two teenage boys
whose favorite sport is skiing. Unfortunately, my
husband refuses to ski locally on account of the
overcrowded and poorly groomed slopes of Mt. Seymour
and Grouse Mountain. There are a great deal of
Vancouverites who feel the same way. One good week's
skiing away is worth more than a month's local
skiing.4

Nevertheless Grouse Mountain and Mt. Seymour undoubtedly offer a
magnificent opportunity for the development of the sport of skiing
in the Vancouver area. Evidence of this was found through the results
of a questionnaire which was distributed to a Y.M.C.A. ski school
sample. The responses revealed that almost one hundred per cent of
the skiing done by these beginners took place on Grouse or Seymour.

4From a letter enclosed with returned questionnaire (B.C. Skier
Magazine sample).
Interestingly enough the average age of the respondents was between eight and nine years of age.

The Squamish and Whistler regions have similar ratings although the high of Whistler Mountain (75) is reduced by Diamond Head (42) and Garibaldi (62). It would seem that Whistler Mountain is destined to become one of the most popular areas within the day zone. Indeed the battle between Whistler and Baker should be an interesting one to observe over the next few years. Baker's rating seems rather low but there may be a local pride factor here in favour of Whistler.

In the weekend zone, the southern U.S.A. slopes and those of the Okanagan region get comparable ratings. However, their comparative ranges are quite different. In the Okanagan the ratings lie from 69 for Big White to 75 for Silver Star, with Tod Mt. (71) and Apex (71) positioned within this very narrow margin. The spectrum exhibited by the southern U.S.A. slopes varies quite widely from a low of 61 for Mt. Pilchuk to a high of 90 for Crystal Mountain. It is worth noting that the ratings parallel distance increments from Vancouver.

In the vacation zone there is a considerable range from a mean of 72 for the Canadian National Parks region to a high of 94 for the southeastern United States resort region. The median here is 87 for the Kootenay region.
Table II

Comparison of Canadian National Parks Areas and Zonal Average User Satisfaction Indices

<table>
<thead>
<tr>
<th>Skiing Area - Lake Louise</th>
<th>88</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zone - Vacation (avg)</td>
<td>83</td>
</tr>
<tr>
<td>Skiing Area - Sunshine Village</td>
<td>76</td>
</tr>
<tr>
<td>Zone - Weekend (avg)</td>
<td>73</td>
</tr>
<tr>
<td>Skiing Area - Mt. Norquay</td>
<td>52</td>
</tr>
<tr>
<td>Zone - Day (avg)</td>
<td>50</td>
</tr>
</tbody>
</table>

The low value recorded by the Canadian National Parks region requires some explanation, since the value of 74 is approximately the same as that received by the Okanagan—a weekend region. When the individual areas are examined a surprisingly wide range is discovered. Indeed the range between these individual areas within the vacation zone is parallel to that which exists between the day, weekend and vacation zones. The low figure of Mt. Norquay begs explanation. Since Mt. Norquay receives such a low rating it might be postulated that Mt. Norquay does not serve Vancouver as a vacation area, but rather serves Calgary as a day zone. As a consequence the anticipated enjoyment of the Vancouver skier visiting this area is not fulfilled, and thus his degree of satisfaction is reduced. Such a postulation is at least partially upheld by a study completed by the Department of Northern Affairs and National Resources in a study
of Mt. Norquay visitation in 1965. The following statement is included in that report:

> It must be emphasized that only a very small proportion of the winter visitors to this area reside outside Alberta. ... The winter visitor market to Mt. Norquay is predominantly local in character.\(^5\)

The Kootenay region receives an overall rate of 87 which is quite high in view of the fact that it is not highly resort orientated. However a combination of good challenging ski slopes and an enthusiastic social and skiing atmosphere would seem to result in a high degree of satisfaction.

The four skiing resorts comprising the S.E. resorts area dominate the vacation zone in terms of both visitation and user satisfaction. The provision of good skiing, amenity and social factors secures this success. The lowest rating in this zone was received by the newly-established Schweitzer Basin with a very respectable value of 85. Sun Valley exhibits a high demand figure as well as a higher User Satisfaction Index of 94. Big Mountain and Aspen both received maximum ratings of one hundred.

It would appear from the results that, in general, the satisfaction derived from an area increases as one moves through the three functional zones. The nature of this relationship was investigated

and the use of multiple regression and a log transformation yielded a correlation coefficient of .64, which indicated that there is a relation between increased distance and increased satisfaction. It would be inappropriate to imply any causal relationship. Though "familiarity may breed contempt" there can be little doubt that other factors contribute to the increased satisfaction. Clearly greater selectivity in other zones is important as well as the fact that physical conditions improve and proximous market generally decreases as one moves from the coast to the interior. Further research might investigate the distance function as it applies to a large area in the centre of the continent to bring greater clarity to the relationship between distance demand and area quality. It could be the case that it is extremely difficult to develop an international skiing area which lies too close to a metropolitan area, since the desires and the needs of the recreationist and the vacational recreationist differ. For one thing, as will be seen from Chapters VI and VII, the market composition of each group varies. Thus the following chapter sets out to question the theory that different socio-economic groups have differing area preferences. Consequently the distance variable will be held constant as the relationship between user and skiing area is brought into focus. However before temporarily dispersing with the distance variable it is pertinent to summarize briefly the relationship between demand, user satisfaction and distance. 

---

6 The derived mathematical relationship between distance, demand and user satisfaction is expressed in the following equation:

\[ y = 235.21 - 0.41 \log X_1 + 1.58 \log X_2 \]

where \( X_1 \) = distance and \( X_2 \) = rating.
From the urban source standpoint there is a very obvious problem. One can merely speculate about the density of use in areas other than those in the day zone. When one speaks of demand in this situation one is only speaking of a proportional representation from the urban base. Accepting this qualification and comparing the findings of Chapters II and III it is apparent that within the day and weekend zones there seems to be a predictable increase of satisfaction with added distance from the urban base, which is paralleled by a decrease in proportional demand. Outside the weekend zone, which may be outside the urban sphere of recreational influence, user satisfaction, like demand, seems to vary irrespective of the distance function. The findings of both Chapters corroborate the suggestion that in these areas satisfaction and visitation rate are much more susceptible to variation through individual area qualities. It is the intention of the following chapter to act as a link between Parts II and III, through investigating the relationship between the skier and the skiing area. Thus, the final component of the "static trilogy" of elements, demand, satisfaction and area quality, will be investigated.
It is a strange paradox that, despite the fact that much recreational research has been directed towards inventory, little has been done to ascertain the components of recreational area quality. Essentially such research would be market research, but it would seem from the paucity of material on this area that the recreational product is a difficult one to classify qualitatively. Undoubtedly one of the most serious problems facing the classifier is the question of whether to include access, demand and locational factors within evaluation. Even when these factors are held constant, as in the Canada Land Inventory, it is still difficult to measure potential land capability since we really do not know what people want, nor do we know the relative attractive power of physical as compared with amenity factors to the potential visitor. At the other end of this relationship between user and area is the whole issue of personal motivation and realized satisfaction which sociologists and social psychologists might well investigate more fully. This area is largely beyond the competence of the writer, but as a tertiary part of the present enquiry an attempt was made to answer three questions. Firstly, what general preferences do skiers show for a range of qualities and facilities present in all
skiing areas? Secondly, do different socio-economic groups place varying emphasis on these area qualities? Thirdly, is the static relationship between the visitor and the area of any significant importance?

Four questions were asked in the questionnaire concerning user preferences. Two dealt with the physical and amenity aspects of the area, while two others delved more deeply into the important question of on-site transportation.

a) Which ONE of the following physical qualities of a skiing area do you think is most important:--
   - lack of moguls
   - great variety of slopes
   - large vertical drop
   - good weather
   - high quality snow
   - beautiful scenery

b) Which ONE of the following amenity factors of a skiing area do you think is most important:--
   - adequate tow facilities
   - good eating facilities
   - adequate close car parking facilities
   - well organized after-ski activities
   - good overnight accommodations

c) Assuming a surface lift (T-bar, Poma, etc.) were satisfactory, are you willing to pay an additional 20% fee to ride up a ski slope on a chair lift?

d) Would you be willing to pay a 10% premium if you did not have to wait in a line over five minutes?

From the responses to the questions listed above, a number of points may be made. Firstly, in the evaluation of physical factors within skiing areas, two were clearly dominant (Figure 4). Fifty per cent of all skiers indicated that a "variety of slopes" was of primary
Which one of the following physical qualities of a skiing area do you think is most important:

**PHYSICAL QUALITIES**
- Variety of slopes
- High quality snow
- Large vertical drop
- Good weather
- Lock of mogul
- Scene

27%

Which one of the following amenity factors of a skiing area do you think is most important:

**AMENITY QUALITIES**
- Adequate tow facilities
- Close to car lot
- Good overnight accommodation
- After ski activities
- Good eating facilities

27%

Assuming a surface lift were satisfactory, are you willing to pay an additional 20% fee to ride up a ski slope on a chairlift?

Would you be willing to pay a 10% premium if you did not have to wait in line over five minutes?

![Graphs](image)

**FIGURE 4**

**USER PREFERENCE**
importance, while approximately half that number (27%) emphasized the "quality of the snow." It is significant that aesthetic and environmental factors seem of secondary importance, for "good weather" and "beautiful scenery" were only considered primary by a total of eleven per cent. Secondly, when assessing amenity factors the overwhelming majority (88%) suggested that tow availability was the major amenity factor. All other characteristics combined to total a meagre 12%.

The single conclusion which may be derived from these physical and amenity preferences is the strong role of the activity in the skiing experience. Obviously environmental qualities add to the enjoyment of the facility but those site characteristics which improve the quality of skiing itself are of paramount importance. It is worth bearing in mind that the bias of the sample in favour of the enthusiastic skilled skier may affect the nature of this response. As will be seen from Part III, however, the skilled skier is particularly important in vacation visitation—that zone where area quality exerts the greatest control on visitation.

The outstanding emphasis on the availability of on-site transportation as an amenity factor was, to some degree, predictable. Hence questions (c) and (d) attempted to further investigate this issue. In question (c), two basic elements, comfort and expense, were involved. So it was postulated that these factors would be reflected in the responses of the various age and income groups. It was hypothesized that the older the skier, the more he would be willing to pay for additional comfort. As can be seen from Figure 4, such
proved to be the case. Similarly it was postulated and substantiated that the higher the income bracket the more the skier would be willing to pay for the added facility. These results must be qualified inasmuch as there may well be a parallel between income and age factors. Still the variation in response to question (c) should be seen as significant. A similar wide variation was not as observable in the second question asked, (d), for the responses were basically in the affirmative. In this case it was postulated that a significant trend would be evident in skill groups rather than in income and age groups, since the question reflected on impatience to wait and on enthusiasm to ski. Such a hypothesis was supported by the data. Income and age factors showed no clear trend but one was definitely associated with an increase in the skill of the individual.

The responses to questions (c) and (d) would lead one to the suggestion that, given a suitable research methodology, definite evidence of preferences associated with various socio-economic groups may be identified. The problems of working on the superficiality of simple listed preferences is manifested in the lack of identifiable variation shown in responses by different socio-economic groups when indicating their physical and amenity preferences. Nevertheless, a number of, at best, tendencies might be noted:

a) A tendency for beginners to be more concerned with snow quality than with a variety of slopes.

b) A propensity for the $10,000-$14,999 per annum income group and for the university graduate group to be
considerably concerned with area climatic conditions.

c) A certain parallel between old and young in their physical site preference. The middle age group in contrast tended to emphasize variety of slopes, while they minimized the snow quality factor.

d) An increase in skill leads to an increasing emphasis on tow facilities, and a decreasing concern with good eating facilities, proximity to car lot and good overnight accommodation. Although there is a progressive increase, small though it may be, for after-ski activities.

e) A decreasing emphasis on tow facilities with age is indicated, with an increasing desire to be close to the car lot.

These four simple questions set within the general questionnaire were too brief and too limited in scope to provide accurate answers to the queried relationships between user and area preferences. It is possible that, certainly for the day and weekend zones, a "satisfier" situation is prevalent. It is only in the vacation area where the role of distance is proportionally less significant that such an investigation is relevant. It would be very interesting to analyze the relationship between the areas skiers visited and their stated preferences to discover the degree of consistency between these factors. All inventory of capability is based upon the assumption that there is some relationship between physical quality of the area and derived satisfaction by the individual or the degree of
demand developed. As yet research is only scraping the surface of this issue. Even so researchers in skiing have attempted to rate the quality of skiing areas. George Besch, for example, derived a rating system for skiing areas—so many points were given for physical and amenity attributes present in the various skiing areas. While this method might yield a system of physical classification, it cannot really include any human judgment, other than that made by the individual who has delimited the value of the ratings. Thus most systems of inventory must necessarily concede that their eventual end is merely a refined geomorphological assessment of landscape, devoid of much functional recreational meaning. The answer might well be that the consideration of a hypothetical relationship between a user and the quality of the area may be so much of an abstraction as to be valueless, unless the spatial relationship and demand factors are somehow included within the framework of area quality. Indeed in the previous chapter it was postulated that area quality only acts as a major attractive force within the vacation zone. Consequently, the crucial question is possibly the effect of socio-economic or skill factors in permitting or constraining the individual’s ability to move into this zone. It is precisely this sphere which will be investigated in Chapters VI and VII.

Thus to answer the three questions posed at the beginning of the chapter we can make the following responses. Firstly, the skier

1George Besch, "Land Use and Other Considerations Needed for Developing Winter Sports Areas in Michigan" (M.Sc. thesis, Michigan State University, 1963). (Mimeographed.)
is above all concerned with the quality of an area as it affects the activity itself—the recreation quality in the skier is extremely strong. Secondly, despite the superficiality of the questions posed, certain relationships would appear to exist between socio-economic and skill groups and their particular preferences. Finally, accepting the need for more research into relationships between the user and the use area, it is quite likely that the demand for recreation is so extreme in the day and weekend zones, that an enquiry into such a relationship will be simply of academic interest.

Still, the findings of the following two chapters would confirm that there do appear to be identifiable relationships between certain vacation regions and specific socio-economic and skill groups, which would attest to the value of such research, especially within the vacation zone.
CHAPTER VI

THE MACRO SCENE--A ZONAL COMPARISON

The adoption of an urban based perspective makes it possible to view the relationship between socio-economic factors and spatial mobility. By initially viewing the basic market composition within each of the three demarcated distance and functional zones, it is possible to observe propensity change throughout. Fortunately, these zones may be treated as areally coincident in the analysis since almost all movement is by automobile over land. The significant differentiating factor in the roles that the day, weekend and vacation zones play within an urban hinterland may best relate to the market which they attract. In turn this market may be conditioned by various socio-economic and skill factors. The present chapter will attempt to identify the role of the socio-economic and skill factors as they relate to the observed mobility of skiers, through the day, weekend and vacation zones. The socio-economic and skill factors to be considered are skier skill,\(^1\) age, marital status, income, occupation and education.

In Chapter V it was pointed out that the quality of a skiing

\(^1\)Skier skill, although a subjective assessment, was thought to be a more significant measure than the number of years of skiing experience. Information, however, was derived for both of these factors.
area may well relate most closely to the various facilities that improve the activity itself, such as quality of the snow, the variety of slopes and the availability of tows. This fact, added to the clearly apparent phenomenon that skiers show a remarkable involvement in their sport, would suggest that the skill element might rank high as a spatially expansive factor. More succinctly it may be said that the more you ski, the greater the skill you develop, the more you wish to meet the challenge of new slopes, resulting in an increased proportional visitation of the weekend and vacation zones. Increasingly the skilled skier appreciates the nuances of good quality snow, variety of slopes, etc. As Figure 5 portrays, an increase in skill is paralleled by a widening selection of skiing areas visited. These results alone would perhaps justify the hypothesis that an increase in skill would lead to a wider range of area use, but the distance dimension has yet to be added. The extension of the hypothesis, namely that the distance increment is likewise increased with added skill, is also substantiated (Figure 5). There is a clear trend present to show a progression from day, weekend to vacation use as a skier becomes more skilled and skiing becomes a greater part of his "genre de vie." This change in visitation emphasis is primarily from the day to the vacation zone, with the weekend zone visitation remaining fairly constant for both the average and above average skier.

It could well be suggested that age would be a minor factor in affecting the development of movement patterns, but in reality it has
**FIGURE 5**

**A ZONAL COMPARISON OF ACTIVITY PATTERNS AND MOBILITY**
considerable significance. From Figure 5, it is quite clear that each age group tends to favour one of the three zones. The youngest age group, under twenty-three, tends to favour the local zone, possibly because of a combination of enthusiasm, availability of short time segments, and lower than average income. The older skier, over forty, uses local areas less frequently and centres a fifth of his skiing time in the weekend zone, as opposed to a lower figure for the vacation zone. Middle age skiers, from twenty-three to forty, show a considerably greater spatial mobility by their inordinate emphasis on vacation regions and their high weekend zone component. This extension in terms of distance is reflected in the range of skiing areas visited by these three groups. Although there is remarkably little variation, the middle age group shows a slightly increased range, visiting an average of 4.65 different areas. Thus, it would seem reasonable to state that the middle age group is most likely to go on a skiing vacation holiday, while we may conjecture that the older age group reserves its major vacation activities in a sphere other than the skiing realm.

It has often been written that marriage restricts a person's mobility. In skiing, at least, this holds true. While the married skier visits 3.5 different skiing areas, the single skier visits 4.6. Locationally the married skier tends to dominate use of the weekend zone, though both groups show identical visitation percentages in the vacation zone.
Although both the restrictive effect of marriage on mobility and the permissive function of increased income may be upheld, the operation of the latter factor shows some unusual characteristics.\(^2\)

The fairly consistent trend of increased range of mobility with additional earnings is well illustrated, but when the spatial pattern is analyzed there is little evidence of such a clear-cut trend. There is a close similarity in the activity patterns of each of the first three income groups, with the emergence of a slight tendency for an increased use of the weekend sector to be paralleled by an increase in income. The spectacular fact revealed is the dramatic rise in vacation use by the group which earns above $15,000 per annum. It would seem that $15,000 per annum demarcates some kind of threshold, denoting an extreme spatial mobility.

While increased income can easily be postulated as a control factor on mobility, the role of occupation may be rather less obvious. It has been suggested by Webber\(^3\) that different occupational groups have a different perception of space and view the distance barrier with differing degrees of concern. From Figure 5 it can at least be said that there is a wide range in the variety of areas at which different occupational groups choose to ski. This ranges from a low

\(^2\)Intuitively people feel that increased available income allows an increased degree of mobility. Such a suggestion was not wholly verified by the findings.

of 3.7 areas for the clerical group to a high of 6.5 for the sales group. It would be trite to suggest that this external mobility reflects the degree of internal mobility within the occupation. Even so, it is tempting to suggest that the very high visitation by salesmen to the weekend, and particularly the vacation zones, may be partially related to the nature of the occupation. For the salesman spends only 56% of his skiing time within the day zone. The housewife shows the same proportional visitation to the day zone and it could perhaps be that this preference of the housewife to ski in non-local areas relates to her recreational time segments. The one significant difference between the two aforementioned groups, lies in the remarkable propensity of the sales group to visit the vacation zone. A much less marked but similar tendency to avoid the day zone areas is shown by the managerial group, showing a 70% use of day use skiing areas. Alternatively, the only group which compares with the sales and housewife groups for vacation visitation are those skiers employed in professional and technical occupations. At the other end of the scale, craftsmen are conspicuous for their lack of vacation skiing. Nevertheless, they, like most other groups, spend approximately an eighth of their skiing time in the weekend zone.

Education has received as little attention as occupation in

---

4 Although not illustrated in Chapter VI, the sales group showed a definite propensity to visit the Okanagan region and the Canadian National Parks. This substantiates the possibility that salesmen travelling in British Columbia combine business with pleasure on their business routes.
its relationship to encouraging individual mobility. In the O.R.R.R.C. report No. 3 on wilderness use it was reported that visitors to wilderness areas had a distinct tendency to belong to the higher educational groups. Consequently, it might be speculated that the higher the educational level users have attained the more they value wilderness qualities, including solitude. The deduction might then be made that more highly educated skiers might be relatively unwilling to accept locally overcrowded conditions, and thus would have a tendency to ski outwith the day zone. The findings of the present study would belie a perfect relationship between increasing use of more distant zones and increasing education. It appears that both in the number of different areas frequented and in the zonal patterns of movement, there is a clear increase in spatial mobility to the level of the skier who has experienced some university education. The pattern of the "post-graduate" follows those with "some university" education, while the "university graduate" seems to ski extensively within the weekend zone. The reasons for this last trend escape the writer. Suffice to say, that there are at least grounds for stating that those skiers without a university education have a more restricted activity pattern than those with a university education. Although it must be immediately conceded that there may be no causal link between the two.

In conclusion, it may be stated that each socio-economic variable acts in some way to affect the activity patterns of skiers, but it is the increase in skiing skill which creates the desire to expand one's sphere of recreational movement. The various socio-economic factors would seem to a greater or lesser degree to condition the extent of this movement. It is therefore apparent that distance does have a filtering effect on the market on this zonal level of comparison.

The next and final question to be asked concerns the directional component of movement within each of the three major zones. If there is a connectivity between specific regions and particular skiing groups, is it a linkage based on socio-economic or accessibility factors? The answer to this question will be found in the following chapter which investigates the micro element of generated movement patterns.
CHAPTER VII

THE MICRO PICTURE--AN AREA AND REGIONAL COMPARISON

Broad, zonal comparisons have been made in Chapter VI and it remains to look at the movement patterns within the three zones to observe the internal directional component. The basic question which pervades the chapter is the degree to which there is a polarization of specific socio-economic and skill groups to particular regions and areas. This is first observed on the regional scale, then the final portion of the chapter will view the conditioners of directional movement on an area scale within the day zone.

Two methods were used to investigate this directional factor of "within zone" movement when considered on the regional scale. One uses facies triangles to determine absolute tendencies for certain groups to be attracted to particular regions, while another method employs average deviation of the mean. In the former method, relationships are derived from plotting component percentages using the three sides of a triangle. The triangles in Figure 6 indicate the percentage breakdown of the market for each of the eight regions, over a range of six socio-economic and one skill factor; which are each subdivided into groups of three. Basically, the closer the individual dot (region) is to a specific vertex of the triangle, the greater is the pull of the socio-economic characteristic which is
A REGIONAL COMPARISON USING FACIES TRIANGLES
associated with that point, on the particular regional market composition. The more the dots cluster towards the centre of the facies triangle the more homogeneous is the market composition for each of these clustered regions.

From Figure 6 it is immediately clear that the market composition is dominated by the average and above-average skilled skier, with a very small representation from the beginner group. Only Squamish and the North Shore, the two closest areas to Vancouver, show a tendency to attract beginners to any significant degree. All areas, therefore, lie along a spectrum between the average and above-average skier. The most immediately accessible region, the North Shore, has a distinct tendency to attract the average skier, while the two major resort areas of the Canadian National Parks and the Southeastern U.S.A. resorts show a definite propensity to attract the above-average skier. This reinforces the pattern described in the previous chapter whereby the skill of the skier may be related to his spatial mobility. The Kootenays, Mt. Baker, and the Southern U.S.A. regions attract very similar markets, while Squamish and the Okanagan attract similarly talented skiers.

As regards income, the low income group dominates the sample, and the Canadian National Parks and Southeastern U.S.A. regions are notable for the divergent groups which they attract even though they are both located within the vacation zone. On the one hand the Canadian National Parks attract a low income group, below $6,000 per annum, while the Southeastern U.S.A. ski resorts tend to attract a
much higher income group. It is interesting to note the polarization of income groups to these two major resort areas, one in Canada and one in the United States. Most of the other regions indicate quite similar income markets, although the North Shore mountains and the Southern U.S.A. region tend to attract slightly lower income groups.

In education, the sample shows a bias towards the person who has experienced some university education. The two other groups who have had no university background exert considerably less power on the shaping of the market. The Canadian National Parks region and the Kootenays tend to attract an especially high educational market with the latter being highly student orientated. This statement can be justified through a glance at the age, occupation and education triangles, where the location of the Kootenay area is seen to be identified with a young, well-educated, student group.

The pattern of age use is also interesting for it spans widely a bridge between the young and the medium age group. The Kootenays attracted young skiers while the Southeastern U.S.A. resorts had a stronger bias in favour of the medium age group. The older skiers, over forty years of age, showed no such specialization in their patronage. Within the day zone the North Shore region attracts a younger age group, verifying remarks made earlier in the thesis.

As regards marital status, single people preferred Mt. Baker particularly, as well as the Kootenay Region and the Canadian National Parks, while the Okanagan and the Southeastern U.S.A. ski resorts tended to attract the married skier.
The three largest occupational groups—students, professional and technical, and managerial—were compared in Figure 6. There was a rather interesting dispersion. While the regions with the day and weekend zones showed no significant variation, these three vacation areas were each associated with one of the three occupational groups. Students showed a partiality for the Kootenays, the professional and technical group favoured the Canadian National Parks area, while the managerial group preferred the Southeastern U.S.A. resort region.

In order to add more depth to these observations, a second method was applied to determine the relationship between particular regions and specific socio-economic and skill groups. The results of the application of the method about to be described are illustrated in Figure 7. A complete analysis of the information depicted in this Figure would merely be repetitive, but the information should be noted since it illustrates the characteristics of the regional market biases. The map was based on information obtained in the following manner. Socio-economic profiles for each of the eight skiing regions were obtained.¹ The bivariate tables for all regions and each of the socio-economic and skill factors were drawn up. The mean of each separate variable as a percentage of the market was then calculated, as was the average deviation of that group of means. All regions which were one average deviation above or below the mean for the group

¹See Appendix C.
Key to Socio–Economic & Skill Factors

(a) **SKILL**
1. Beginners
2. Average
3. Above Average

(b) **AGE**
1. Young
2. Medium
3. Old

(c) **MARITAL STATUS**
1. Married
2. Single

(d) **INCOME**
1. under $6,000
2. $6 to 9,999
3. $10 to 14,999
4. over $15,000

(e) **OCCUPATION**
1. Housewives
2. Students
3. Managerial
4. Prof. & Tech.
5. Clerical
6. Sales
7. Crafts etc.
8. Other

(f) **EDUCATION**
1. Elementary School
2. Some High School
3. Grad. High School
4. Some University
5. Grad. University
6. Post Graduate

(g) **RESIDENCE**
1. West Central Van.
2. East Central Van.
5. Burnaby

— Negative propensity for group to visit region
+ Positive propensity for group to visit region

**FIGURE 7**
A REGIONAL COMPARISON USING AVERAGE DEVIATION
were assigned that variable with, respectively, a positive or negative notation. These were collected for the eight regions and are cartographically portrayed in Figure 7.

Either system may be utilized. The facies triangles have two distinct advantages. Not only do they indicate the character of the total market and the regional relationships, but they also express these in a graphic manner. Unfortunately, the limitations of the three vertices are severe since they restrict the degree of refinement of the socio-economic variables. The method using average deviation has the advantage that more refinement is provided, given that the average deviation is accepted as a reasonable measure of variance.2 Furthermore, there are no problems of grouping the variables, and positive and negative values may be obtained.

Clearly each system of analysis has its advantages and a description could have been based on either, but it was felt that the graphic nature of the facies triangle, coupled with the relatively crude nature of the data, made it more suitable in this instance. Irrespective of the method employed, however, one general observation may be made. Namely, that the market characteristics show increasing homogeneity with added distance from Vancouver. The reason for this lies, no doubt, in the filtering effect of distance on the market,

2Since the sample did not form a normal distribution, standard deviation was not used. It is debatable if either statistic is really relevant but it allowed an intuitive line to be supported by some degree of quantitative assessment.
with the specific characteristics of the three vacation regions attracting quite distinct groups. This verifies the theory that as the skiers move into the vacation zone they divide up directionally into different socio-economic and skill groups, indicating that a closer relationship may well exist between area visitation and group preferences within the vacation zone. In the day zone no such observations are obtained. In Figure 6 it is clear that the day zone areas are usually clustered indicating a similar market. Likewise, Figure 7 illustrates the fact that deviations are less observable in the day and weekend zones. Consequently, it could be inferred that, within the day zone there may be another factor which is affecting movement patterns, beyond those socio-economic and skill factors thus far emphasized. A seventh factor, residential location within the urban base is, therefore, introduced into the study and may prove to be a significant indicator of directional movement patterns within the day zone. It is surprising but true that the relationship between residential location and areas of recreational activity has received little attention in terms of research.

Urban geographers certainly have shown considerable interest in the spatial relationships between work and residence. As work becomes a diminishing factor in the lives of people, however, it might well be argued that non-work values, or recreational values, may

3John Wolforth, The Journey to Work (Vancouver: Tantalus Pub., 1966). This publication includes an excellent review of the field of work-residence relationships.
contribute increasingly to the choice of residential location. Indeed it has been suggested that such a trend does exist with regard to summer cottage use.\textsuperscript{4}

In the Vancouver situation no attempt was made to uphold the proposition that skiers intentionally choose residential locations which would give them access to skiing areas. It was postulated, nevertheless, that within the day zone, directional movement could be explained by the following hypothesis:

That skiers will choose to ski within the day zone at that area which is most easily accessible from their city zone of residence.

From Figure 8 it may be seen that major access to Grouse Mountain is via the First Narrows Bridge, while access to Mt. Seymour is via the Second Narrows Bridge. The former, likewise, supplies major access to Whistler Mountain, in the Squamish area, whereas two major corridors of movement to Mt. Baker take southerly routes through the east central sector of Vancouver, and the Burnaby sector. The directional index which is used in Figure 8 is derived from Wolfe's formula.\textsuperscript{5} The only adjustment required was based upon the tacit

\textsuperscript{4}In a seminar conducted in March, 1967, Dr. Roy I. Wolfe, from the Department of Highways, Ontario, made the suggestion that he knew of a number of people who actually chose their residential location in Toronto to gain immediate access to their summer cottages, even though this meant long travelling hours during the work week.

assumption that the unit of "visitor days" could be substituted for "number of trips" within the day zone. While this was not tested there is more than an intuitive basis for stating that the period of visitation in this zone is less than one day and thus the number of visitor days may be equated with the number of trips, in the directional index equation. The findings illustrated in Figure 8 may be tested against the aforementioned hypothesis.

In the West Vancouver sector it would follow from the hypothesis that there would be a strong directional component to Grouse Mountain, due to ease of access, and a small component directed towards Mt. Seymour as a result of the intervening opportunity role of Grouse Mountain. On the broader scale, access to Whistler, through avoidance of cross city traffic, would be expected to result in a directional dominance for this area over the southerly located Mt. Baker. The observed behaviour of skiers would appear to uphold the predicted pattern of movement.

In North Vancouver it was postulated that the Mt. Seymour component would dominate that exerted by Grouse Mountain. This proved to be a correct assumption. However the further prediction that Whistler and Baker components would be equal proved to be erroneous in view of Mt. Baker's stronger observed pull.

The proposition for west central Vancouver suggested that Grouse Mt. would dominate in the local situation and that Baker and Whistler would be equivalent due to equal access factors. The first proposition
was incorrect, for Mt. Seymour dominated. The second, however, could be accepted. This sector showed the greatest degree of equilibrium in terms of direction, implying that it possesses maximum overall access to all four skiing areas.

Such a state of equilibrium was absent from the east central area of Vancouver, which showed a strong southern tendency. This was expected, but it was felt there might have been a closer parallel between the directional components of Grouse and Seymour.

In Burnaby the strong tendency to visit Seymour via the Second Narrows Bridge and to head south to Baker, was predictable, with suitably diminished movement to Grouse Mountain and Whistler.

These results, if they do not form conclusive proof, at least strongly attest to the effect of access routes and residential area propinquity as prime conditioners of the direction of recreational travel from a city to the day zone hinterland. The general tendency to use the closest recreational area within the urban centre and to avoid cross-city traffic when travelling outward from the city are significant characteristics of recreational activity patterns within the day zone, which are illustrated in this section.

To summarize, it may be said that two factors of recreational movement within an urban recreational hinterland have been identified in this chapter, through the urban based perspective. The effect of distance as it filtrates the market has been verified along with the
directional division of various clientels to specific regions within the vacation zone. Such an effect is far less apparent in the day and weekend zones. Within the day zone socio-economic factors appear to be subject to much less differentiation on a directional or even distance basis. The essential determinant would seem to be related to the residential location factor and its spatial relationship to available skiing areas. The behaviour of the skier suggests that he wants to minimize the time taken to reach the skiing area, confirming the strong activity element involved in this form of recreational activity, substantiating the findings in Chapter V, and generally throughout the thesis.

This would confirm the belief that the demand for skiing within the day zone is sufficiently high to necessitate a minimization of travel time to the skiing area. Thus it might be concluded that the demand factor is so significant within the day zone that visitation preferences based on area quality are seldom possible within this zone.
SUMMARY AND CONCLUSIONS

This study has been an attempt by a geographer to analyze recreational movement patterns from an urban base. Essentially one recreational activity was chosen and one urban source selected. In actuality it was the skiing hinterland from Vancouver, but it might easily have been the mountain climbing hinterland from London, or Montreal's boating hinterland. The approach could, with a number of minor adjustments, be applied to the recreational movements associated with any activity from any city. Although the thesis is intended to show certain general characteristics, distinct facts about Vancouver's skiing hinterland are revealed within the text. It should, however, be made quite clear that this is the work of a geographer, not a marketing specialist, and consequently the total market characteristics of the population are relegated to a minor position relative to the nature of the spatial interaction between the user's residence and the use area. It must be conceded that the known bias of the sample precluded an accurate market analysis or predictive picture. Had the study obtained much greater financial support an accurate market picture could easily have been developed employing the methods described. As it was, the writer was quite content to highlight the geographical perspective by emphasizing movement and mobility factors as they related to propensity market characteristics. Apart from the noted problem of sample selection there are other
weaknesses in the study. An increase in sample size would have signifi-
cantly improved the quality and depth of the findings. In retrospect,
a further re-mailing of the questionnaire would have added a valuable
increment to the size of the sample. In the detailed sense, the ques-
tionnaire utilized was quite effective in answering the questions which
were posed within its framework. Question 2, however, was so ambiguous
as to be almost redundant, and the questions (6 and 7) relating to
area preferences might well have been expanded to include a wider range
and to allow ranking. Alternatively, the bivariate table used to
assess visitation rates and user satisfaction indices was remarkably
successful and could be used more extensively. The methods employed
to analyze the results could be questioned on a number of counts, but
many of these would relate, indirectly at least, to the initial sampling
procedures. For example, it could well be argued that methods beyond
multiple regression and the use of average deviation and facies triangles
could have been included in the study. Two limits, however, were
imposed upon the writer. One was the limitation imposed by the lack
of refinement in the data, the other was the writer's own statistical
competence. It was felt advisable to work within these dual constraints.

Conclusions

The two introductory chapters served to explain the urban based
approach, place it in the context of previous research, and translate
its theoretical perspective into a practical vehicle of research. The
remaining five chapters contain the findings derived through the adop-
tion of such a perspective.
In Chapter III, on demand, it was revealed that the day and weekend zones are distinctly attached to their urban centre, while the vacation zone is different inasmuch as the travel friction factor is radically reduced within this zone through the operation of a momentum factor. Once the skier reaches the vacation zone he becomes footloose and thus his selection of skiing locality is more closely associated with area characteristics than with simply availability or proximity factors. This element of movement is viewed from a quality rather than quantity standpoint in Chapter IV, where it is found that the skier does appreciate this increasing freedom from the travel friction factor for he indicates the increasing satisfaction which he derives from each zone as he moves outward from the city. The aforementioned facts both imply that it is mainly within the vacation zone that the skier asserts any real selectivity of area, based on area characteristics alone. Chapter V suggests that such selectivity is liable to be based upon the facilities which relate most directly to the activity itself, such as uphill transportation, quality of snow, etc. In addition, within this overall consistency of preferences, variations in tastes can be associated with particular socio-economic and skill groups. Since actual selection may only be possible within the vacation zone where the demand factor is reduced in emphasis, the significant question to be asked is--what are the effects of socio-economic and skill factors in constraining or permitting the individual skier's path into the vacation zone? The roles of various factors are considered in Chapter VI and it is found that the degree of skiing
skill obtained provides the best touchstone of zonal use. Increased skill is closely matched by an increased propensity to visit more distant zones, although the skill factor is conditioned to some extent by the skier's age and income.

Accepting then that a skier has reached the junction of the weekend and vacation zones, it is important to question what affects his directional pattern of movement within the vacation zone. Since it was established in Chapter V that there is some relationship between area preferences and socio-economic groups and skill groups, it follows that directional movement may similarly be associated with a dispersion aligned along these group affiliations. This proposition is verified by the findings of Chapter VII, where it is observed that there is a distinct polarization of particular socio-economic and skill groups to each of the three vacation regions. A final question remains to be answered. If socio-economic and skill factors do not explain directional movement within the day zone, what does? Since the demand factor is strongest in this zone it seems logical to suggest that the minimization of travel time to the skiing area could be a primary factor. This is tested against observed directional patterns and it is found that avoidance of cross-city traffic and visitation of the most proximous areas do indeed condition directional movement within the day zone.

Thus through the use of the urban base perspective it is hoped that novel insights have been gained into the spatial relationships
between the user and the recreation area. It remains to outline briefly possible extensions to, and applications of, this urban centred approach.

The next logical step in further research would be to take two urban centres and a single activity and attempt to compare the movement patterns from each of these cities. The cities should be located in dissimilar physical locations, with contrasting population characteristics, in order to observe the consistency or lack of consistency of socio-economic controls on movement within various functional zones. Research might also be extended into the recreational area. It is true that many origin destination studies are area based, but it is suggested that more research should involve an investigation of the proportionate make-up of visitors, based on their day, weekend or vacation motivations. It is implicit from the present study that each group has a different perspective and a different recreational motivation. A closer understanding of their perceptions and demand values from an area could lead to more positive planning of vacational areas devoid of the prohibitionist tendencies which are presently evident. In addition a clearer understanding of the relationship between physical capability and recreation function is necessary, if only to strengthen the validity of inventory procedures.

It is possible to continue at length on the possible extensions to the urban based concept, but what of its pragmatic value. Recreational geography is essentially applied geography. While there
may be undertones of humanitarianism inasmuch as satisfaction derived from recreation undoubtedly acts in a positive way to enhance a society's "quality of life," the overall purpose of such research is to solve the problem of an infinite demand for recreational space, given finite resources. The writer suggests, somewhat idealistically, that the time may come when the needs of an urban population will be understood and measured from an analysis of its socio-economic composition coupled with an accurate inventory of available resources. From these two measured components a plan could be drawn up which would optimize the use of the recreational resources of any given metropolitan hinterland. In order to strive towards this, it is essential to ask some of the questions which have been posed in this thesis. One of the most optimistic areas of research methodology available at present is the system analog approach. It is becoming clear that this may supply some of the answers that the various gravity models have failed to supply. This superiority may be partially based on the fact that socio-economic factors may be included within the system. However, due to the imbalance of research to date the socio-economic inputs required for such a system is as yet vague and ill-defined. It is the belief of this writer that such a situation has developed because of the over emphasis on the recreational area as an attractive force to all recreational groups. This work has pointed out that in many cases its role is relatively passive. The geographer must attempt to remove this over emphasis on area characteristics if he is to contribute to optimization of recreational resource use.
There can be little doubt, moreover, that it is in the sphere of urban recreational demand that most interest will be directed in the course of the next few decades. Beyond that time all groups within society may have absolute spatial mobility. But as long as the recreationist is highway orientated and subject to socio-economic friction factors the considerations dealt with in this study will be crucial in the solution of the "problem of recreation."
SELECTED BIBLIOGRAPHY

Books and Pamphlets


_________. "A Research Approach for Investigating Future Demand for Outdoor Recreation." Address to the 9th Annual Conference of the S.W. Park and Recreation Training Institute, Texoma State Park, Oklahoma, February, 1964. (Mimeographed.)


———. An Approach to the Inventory of Recreational Lands. Ottawa: Planning Division, National Parks Branch, Department of Northern Affairs and Natural Resources, November, 1964. (Mimeographed.)


Volk, Donald S. "Factors Affecting Recreational Use of National Parks." Paper presented to the Annual Meeting of the Association of American Geographers, Columbus, Ohio, 1965. (Mimeographed.)

Articles


McFarland, J. H. "Are National Parks Worthwhile?" Sierra Club Bull., 8 (1911-12), 236-239.


——. "Playgrounds of the Prairies," C.G.J., 16 (February, 1938), 55-70.


Dear Skier,

The reason we have gone to the expense of sending you this questionnaire is because we believe that unless this thing is done, our ski slopes are going to get more and more overcrowded. By taking a few minutes of your time to fill in this questionnaire, giving us information about your preferences, opinions, skil habits, etc., you will provide a factual basis for future planning.

We should point out that returns must be received prior to April 30th in order to be useful.

Thank you very much for your cooperation.

(Geog. Dept. U.B.C.)

1—Do you travel to the skiing area by
   a) automobile
   b) other

2—What is the maximum distance (in miles or hours) that you have been prepared to travel, this season, on:
   a) a day excursion
   b) a long weekend (Friday night-Sunday night)
   c) a weekend (Friday night-Sunday night)

3—How many days did you ski during this past season (1965-66)?
   a) mid-week days
   b) weekend days and holiday days
   c) vacation days (over four consecutive days)

4—How is your ski group usually composed:
   Adult males
   Adult females
   Children males
   Children females

5—What do you usually spend as an individual on a day's skiing (incl. travel, food, entertainment, ski facilities, rentals, lessons, etc.)

6—Which ONE of the following physical qualities of a skiing area do you think is most important:
   a) lack of moguls
   b) high quality snow
   c) great variety of slopes
   d) good weather
   e) large vertical drop
   f) beautiful scenery

7—Which ONE of the following amenity factors of a skiing area do you think is most important:
   a) adequate tow facilities
   b) well organized after-ski activities
   c) good eating facilities
   d) good overnight accommodations
   e) adequate close car parking facilities

8—Assuming a surface lift (T-bar, Poma, etc.) were satisfactory, are you willing to pay an additional 20% fee to ride up a slope on a chair lift.

9—Would you be willing to pay a 10% premium if you did not have to wait in a line over five minutes.

10—How many years have you skied (including this season)?
    1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

11—Do you consider yourself to be
    a) a beginner
    b) an average skier
    c) an above-average skier

This questionnaire provided the basic data for the thesis. (50% reduction)
APPENDIX B

A Comparison of Skiing Samples in Four Studies (%)

<table>
<thead>
<tr>
<th></th>
<th>B. C. Skier Sample</th>
<th>Ontario Travel Survey</th>
<th>Western States (Washington)</th>
<th>Northeastern U.S.A. Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SEX</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>78.6</td>
<td>69.2</td>
<td>66</td>
<td>61.9</td>
</tr>
<tr>
<td>Female</td>
<td>21.4</td>
<td>28.3</td>
<td>34</td>
<td>38.1</td>
</tr>
<tr>
<td><strong>MARITAL STATUS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>52.4</td>
<td>39.1</td>
<td>--</td>
<td>40.3</td>
</tr>
<tr>
<td>Single</td>
<td>47.6</td>
<td>60.9</td>
<td>--</td>
<td>59.6</td>
</tr>
<tr>
<td><strong>INCOME</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below $6000</td>
<td>49.2</td>
<td>40.7</td>
<td>27</td>
<td>33.5</td>
</tr>
<tr>
<td>$ 6000-$ 9999</td>
<td>26.2</td>
<td>29.6</td>
<td>23</td>
<td>23.5</td>
</tr>
<tr>
<td>$10000-$14999</td>
<td>13.9</td>
<td>9.1</td>
<td>31</td>
<td>21.8</td>
</tr>
<tr>
<td>Over $15000</td>
<td>10.7</td>
<td>8.2</td>
<td>16</td>
<td>18.1</td>
</tr>
<tr>
<td><strong>OCCUPATION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students</td>
<td>26.4</td>
<td>21</td>
<td>37</td>
<td>28.8</td>
</tr>
<tr>
<td>Housewives</td>
<td>5.0</td>
<td>--</td>
<td>12</td>
<td>7.4</td>
</tr>
<tr>
<td>Prof. and Tech.</td>
<td>24.7</td>
<td>32</td>
<td>19</td>
<td>28.7</td>
</tr>
<tr>
<td>Clerical</td>
<td>7.7</td>
<td>10.3</td>
<td>4</td>
<td>11.6</td>
</tr>
<tr>
<td>Managerial</td>
<td>10.4</td>
<td>9.1</td>
<td>6</td>
<td>6.6</td>
</tr>
<tr>
<td>Craftsmen</td>
<td>13.1</td>
<td>10.3</td>
<td>--</td>
<td>7.1</td>
</tr>
<tr>
<td>Sales</td>
<td>25.5 (7.7)</td>
<td>27.6 (17.3)</td>
<td>22</td>
<td>15.8 (4.3)</td>
</tr>
<tr>
<td>Other</td>
<td>4.7</td>
<td>--</td>
<td></td>
<td>4.4</td>
</tr>
</tbody>
</table>
(APPENDIX B - Continued)

<table>
<thead>
<tr>
<th>Education</th>
<th>B. C. Skier Sample</th>
<th>Ontario Travel Survey</th>
<th>Western States (Washington)</th>
<th>Northeastern U.S.A. Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary</td>
<td>3.2</td>
<td>41.6</td>
<td>39 (7)</td>
<td>16.2 (4.0)</td>
</tr>
<tr>
<td>Sr. High School</td>
<td>42.7 (11.9)</td>
<td></td>
<td>27.6</td>
<td>24.3</td>
</tr>
<tr>
<td>Grad. High School</td>
<td></td>
<td></td>
<td>Some University</td>
<td>Grad. University (57.3 (18.9)</td>
</tr>
<tr>
<td>Some University</td>
<td>24.3</td>
<td></td>
<td>Grad. University (57.3 (18.9)</td>
<td>58.6</td>
</tr>
<tr>
<td>Post. Graduate</td>
<td>14.1</td>
<td></td>
<td>Post. Graduate</td>
<td>14.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>B. C. Skier Sample</th>
<th>Ontario Travel Survey</th>
<th>Western States (Washington)</th>
<th>Northeastern U.S.A. Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>12-18</td>
<td>10.2</td>
<td>19.9</td>
<td>36</td>
<td>19.6*</td>
</tr>
<tr>
<td>19-22</td>
<td>18.2</td>
<td>17.7</td>
<td>7</td>
<td>19.9</td>
</tr>
<tr>
<td>23-30</td>
<td>23.5</td>
<td>30.7</td>
<td>25</td>
<td>22.7</td>
</tr>
<tr>
<td>31-40</td>
<td>23.0</td>
<td>19</td>
<td>26</td>
<td>22.6</td>
</tr>
<tr>
<td>41-50</td>
<td>16.6</td>
<td>9.7</td>
<td>6</td>
<td>13.2</td>
</tr>
<tr>
<td>Over 50</td>
<td>8.6</td>
<td>9.7</td>
<td>5</td>
<td>2.0</td>
</tr>
</tbody>
</table>

*Slight adaption in grouping.
APPENDIX C.

Socio-economic profile of:

This worksheet was completed for eight skiing regions and a number of individual areas. From these, bivariate tables were produced and average deviations were calculated.

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Years Skied</th>
<th>1</th>
<th>2-3</th>
<th>4-7</th>
<th>7+</th>
</tr>
</thead>
<tbody>
<tr>
<td>To</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$5999</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$6000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$10000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$14999</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$15000+</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Income</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>WC. Vanc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC. Vanc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N. Vanc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W. Vanc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burnaby.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>12-18</th>
<th>19-22</th>
<th>23-30</th>
<th>31-40</th>
<th>41-50</th>
<th>Over 50</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Occupation</th>
<th>House wives</th>
<th>Students</th>
<th>Managerial</th>
<th>Prof. +Tech.</th>
<th>Clerical</th>
<th>Sales</th>
<th>Crafts etc.</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

0 100 200
Scale in miles.

ALL TOTALS
100%

C.K.C. 1967
APPENDIX D

Distance, Demand and User Satisfaction Indices for Twenty-Three Skiing Areas Within Vancouver's Skiing Hinterland

<table>
<thead>
<tr>
<th>Ski Area</th>
<th>Distance (miles)</th>
<th>Visitor/days</th>
<th>User Visitation Index</th>
<th>User Satisfaction Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grouse Mountain</td>
<td>8</td>
<td></td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>Hollyburn Ridge</td>
<td>10</td>
<td></td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Mount Seymour</td>
<td>15</td>
<td></td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>Diamond Head</td>
<td>46</td>
<td></td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>Garibaldi</td>
<td>70</td>
<td></td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>Whistler Mt.</td>
<td>73</td>
<td></td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Mount Baker</td>
<td>110</td>
<td></td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>Mount Pilchuk</td>
<td>148</td>
<td></td>
<td>61</td>
<td></td>
</tr>
<tr>
<td>Stevens Pass</td>
<td>187</td>
<td></td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Crystal Mountain</td>
<td>225</td>
<td></td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Apex Alpine</td>
<td>240</td>
<td></td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>Big White</td>
<td>300</td>
<td></td>
<td>69</td>
<td></td>
</tr>
<tr>
<td>Tod Mountain</td>
<td>300</td>
<td></td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>Silver Star</td>
<td>320</td>
<td></td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>Red Mountain</td>
<td>400</td>
<td></td>
<td>82</td>
<td></td>
</tr>
<tr>
<td>Schweitzer Basin</td>
<td>489</td>
<td></td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>Lake Louise</td>
<td>536</td>
<td></td>
<td>87</td>
<td></td>
</tr>
<tr>
<td>Mount Norquay</td>
<td>568</td>
<td></td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>Sunshine Village</td>
<td>585</td>
<td></td>
<td>76</td>
<td></td>
</tr>
<tr>
<td>Kimberley</td>
<td>625</td>
<td></td>
<td>92</td>
<td></td>
</tr>
<tr>
<td>Big Mountain</td>
<td>752</td>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Sun Valley</td>
<td>837</td>
<td></td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Aspen</td>
<td>1387</td>
<td></td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

The multiple regression and correlation analyses referred to in Chapters III and IV were based on these figures.