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TWO ALTERNATIVE APPROACHES TO SEGMENTING MICHIGAN'S DOWNHILL SKI MARKET

Michigan State University PH.D. 1979

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TWO ALTERNATIVE APPROACHES TO SEGMENTING MICHIGAN'S DOWNHILL SKI MARKET

By

Edward Michael Mahoney

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ABSTRACT

TWO ALTERNATIVE APPROACHES
TO SEGMENTING MICHIGAN'S DOWNHILL
SKI MARKET

By

Edward Michael Mahoney

This study was undertaken with two purposes in mind; first, to provide ski area managers with a multi-dimensional overview of the current downhill ski market in Michigan; second, to apply and evaluate two different approaches to segmenting this market--heavy half and attributes sought segmentation. *Heavy half* segmentation entails dividing a market into heavy and light halves on the basis of the quantity of a product purchased. *Attributes sought* segmentation involves grouping skiers who attach similar degrees of importance to various ski area attributes into the same segments.

Telephone interviews were used to procure the bulk of the data needed for the segmentation analyses. The survey was restricted to five calling regions--Ann Arbor, Detroit, Grand Rapids, Lansing, and Pontiac--accessible by leased telephone lines of Michigan State University. Of the 1,069 households successfully contacted during the interviewing period (February 18, 1978 to March 9, 1978), fourteen percent (229) had one or more active skiers. *Active*

skiers included individuals who skied during the 1976-1977 winter season and anyone taking up skiing for the first time in 1977-1978 prior to the interview period. Information was also gathered on inactive, dropout, and potential skiers but only active skiers were used in the segmentation analyses. Active skiers successfully contacted during the phone survey were sent a follow-up mailed questionnaire for the purpose of procuring preference data on which to base the attributes sought segmentation analysis.

The heavy half segmentation analysis consisted of (1) dividing active skier respondents into heavy and light halves on the basis of the number of days they skied during the 1976-1977 season, and (2) comparing heavy and light half skiers on socioeconomic and participation characteristics and the importance they assign various ski area attributes. Active skier respondents who skied seven or fewer days comprised the light half of the sample and those who skied eight or more days constituted the heavy half. The light half accounted for 17 percent of the total number of days skied by respondents; the heavy half, 83 percent or nearly five times as many days.

Comparative analyses revealed no significant differences between heavy and light half skiers on socioeconomic characteristics. Further analysis revealed few exploitable differences between heavy and light half skiers regarding

the importance they assign various ski area attributes. A number of potentially exploitable differences were found between heavy and light skiers on participation characteristics. Findings disclosed that heavy half skiers took more and longer ski vacations and visited significantly more ski areas and did significantly less of their skiing at any one area. They also pay more for daily lift tickets and travel greater distances to reach ski areas (while on overnight or weekend ski trips) than light half skiers. In addition, heavy half skiers are generally more highly skilled and are more likely to belong to a ski club and own all their equipment than their light half countertypes.

The first step in the attributes sought segmentation analysis involved grouping active skiers into attributes sought segments. A nonhierarchical clustering technique was employed to aggregate skiers into segments on the basis of the importance they assigned seven ski area attributes. These attributes included: (1) after ski entertainment, (2) lodging facilities, (3) restaurant facilities, (4) amount of crowding at lift lines, (5) slope quality, (6) price of lift tickets, and (7) driving distance from home to the area. The cluster analysis resulted in the identification of five relatively distinct attributes sought segments. The five segments were then compared with respect to (1) mean importance rankings assigned various

slope attributes, entertainment options and dining styles. (2) socioeconomic characteristics, and (3) participation habits/characteristics. The findings from these analyses were used to formulate attributes sought, socioeconomic and participation characteristic profiles for each segment. Excerpts from these profiles served as the basis for the following characteristics:

The Quality Conscious Segment (16.1 percent of the market) is particularly concerned with slope quality, lodging facilities and restaurant offerings. Members of this segment ski significantly more days, take more and longer ski vacations, pay more and are willing to pay significantly more for daily lift tickets than other skiers.

The Crowding Conscious Segment (33.7 percent of the market) shows significantly more concern for the degree of crowding they encounter at lift lines and on the ski slopes. Crowding Conscious skiers skied less days than average. A disproportionately large number of beginner and intermediate skiers are found in this segment.

The Price Conscious Segment (7.7 percent of the market) contains a higher proportion of young skiers and single people. Price Conscious skiers assign more importance to lift ticket price as a selection criteria than other skiers. They pay less and are willing to pay less for daily lift tickets.

The Strictly Skiing Conscious Segment (24.4 percent

of the market) is seriously concerned with the quality of ski slopes. A higher proportion of males, blue collar workers and housewives are found in this segment than in any other segment.

The Travel Conscious Segment (18.1 percent of the market) is comprised of persons who are especially concerned with the distance they must travel to reach a ski area. Skiers contained in this segment drive fewer hours and are willing to drive fewer hours to reach a ski area than other skiers.

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INTRODUCTION

INTRODUCTION TO THE DOWNHILL SKI MARKET IN MICHIGAN

The downhill ski industry constitutes a major component of the tourism industry in Michigan and contributes significantly to the overall state economy (Domoy, 1977, p. 3). In addition to the influx of tourist dollars, Michigan's downhill ski industry employs over 4,000 people and provides over 9 million dollars in salaries annually (Domoy, 1977, p. 2). The industry also enhances greatly the employment picture in Michigan and especially in many rural counties where alternative means of employment are not readily available. As a result of the expansion of many downhill ski areas into year-round resort complexes, the economic base of numerous communities that had formerly been plagued by extreme seasonal fluctuations in commerce and employment now has been strengthened and stabilized.

The Downhill Ski Industry: Yesterday and Today

Presently 78 downhill ski areas are in active operation throughout the state and of these 69, or 89

percent, are privately managed with the remaining 11 percent under public ownership. All but ten of the downhill ski locations are concentrated in the northern tier of the lower peninsula and can accommodate annually 5,466,000 skiing visits (Farwell, 1977, p. 3).

The total lift capacity of the lower peninsula areas has increased at an annual rate of 7.2 percent (Farwell, 1977, p. 8). According to Farwell, between 1965 and 1975 lower peninsula operations expanded the aggregate lift capacity to allow for the accommodation of an additional 2,000 skier visits per day or 280,000 annually. However, growth in lift capacity and the number of downhill ski areas has failed to keep pace with the increase in both the numbers of skiers and the number of annual skier visits (Farwell, 1977, p. 9).

Participation in downhill skiing has continued to increase nationally at a phenomenal rate. In 1920 approximately 30,000 people enjoyed downhill skiing; by 1976, according to estimates, 10,502,000 individuals or 5.2 percent of the population skied (Domoy, 1977, p. 4). The number of downhill skiers increased nationwide by 42 percent during the short period between 1973 and 1976 (A. C. Nielson, 1976, p. 6). Increases have also occurred in Michigan where approximately 423,500 skiers resided in the market region for lower peninsula ski

areas making a total of 2.2 million visits per year to downhill slopes (Farwell, 1977, p. 3). These visits have been increasing at a compound average rate of 10.4 percent annually (Farwell, 1977, p. 7).

Forecasts of Continued Growth

Most reports reviewed for this study forecast that growth trends will continue in the number of skiers and visits to ski areas. Estimates anticipate that the national population of downhill skiers will increase six percent between 1976 and 1980 and an additional five percent between 1980 and 1985 (A. C. Nielson, 1976). On the basis of this forecast, it was projected that the number of downhill skiers throughout the United States would increase from 10,502,000 in 1976 to a total of 11,704,000 in 1985 for a net increase of 1,202,000. Corresponding to these national trends, visits to the lower peninsula ski areas in Michigan will continue to increase at 10 to 11 percent annually (Farwell, 1977, p. 7). In addition, the total number of annual skier visits to the lower peninsula skiing locations will increase to 6,411,000 by the year 1980 for a gain of nearly 200 percent compared to 1976 visitation figures (Farwell, 1977, p. 3). Based on these Forecasts and the

past record, downhill skiing is commonly viewed as a "growth industry" in Michigan.

A Dynamic and Increasingly Fragmented Market

Although all available data indicates that increases in the number of downhill skiers will continue, there are inherent dangers in ski operators viewing their industry as a growth industry. It is important from a marketing standpoint that ski area managers recognize that Michigan's expanding downhill ski market is, at the same time, a very dynamic market. The transient character of the market no longer affords area managers the luxury of assuming that a product offering which has proven successful in attracting today's skiers will be equally appealing to future markets. The ability of ski operations to enlarge upon, or even maintain their current market share will depend on how effective they are in adapting their product offerings to the changing requirements of the state's downhill skiers.

The managerial risks and uncertainties which arise as a result of an expanding market are further compounded by the fact that the "mass skier market" of

the past is becoming increasingly fragmented.[1] The broadening range of consumer wants and demands have rendered mass market strategies ineffective (Smith, 1956). Efforts aimed at drawing a wide variety of skier types are likely destined for failure because of two fundamental reasons. First and probably foremost, ski offerings which are designed to appeal to average skier needs and wants will lack the depth of sell and degree of specificity necessary in the formulation of a product identity which would supply a firm with a competitive edge. The so-called "average skier," for whom these unspecialized, indiscriminate ski area offerings are intended to entice is a product of statistical analysis only and, therefore, may not exist in the real world. The second reason why mass market strategies are likely to be ineffective is that a product

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[1]Kenneth Schwartz (1962, p. 14) commented that segmentation of the mass market is nothing less than a revolutionary transition which has come over the mass market . . . From a single homogeneous unit, the market has exploded into a series of segmented markets, with its own needs, tastes and lifespan. Maier and Slater (1964) maintain that for a variety of reasons the mass market as such is disappearing for a great many consumer goods and services. Brandt (1966) contends that changes in current society are breaking up the mass market for many goods and services.

offering which successfully attracts one skier type may be totally inappropriate in relation to the needs or wants of those skiers comprising a different market segment. For example, while a low price no frills downhill ski offering may effectively satisfy the needs of the low budget or economy conscious skier, this offering would not likely render the same satisfaction to those prestige-minded individuals concerned with luxury and comfort. A compromise product intended to attract both segments is likely to have shallow appeal and suffer from a fuzzy image. Although each market segment would be offered a portion of its preferences, neither group's partialities would be catered to. Chances are skiers of both groups would turn to alternative areas that more closely match their specific desires.

In addition to limiting the effectiveness and efficiency of their marketing effort, ski areas that adhere to mass marketing strategies risk entering into direct price and promotional competition with areas employing similar strategies. Attempts to differentiate products on the basis of price alone or through the use of promotional messages are not only ineffectual in the sense that one area's efforts will be negated by countervailing efforts of competitors, but they also reduce profits.

The managers of Michigan's downhill ski areas are confronted with an increasingly complex mixture of skiers. Ski areas can no longer hope to be all things to all skiers. Lack of homogeneity on the "demand" side of the market requires that ski area managers identify and select specific types of skiers to service and then develop ski area offerings to match the specific needs of those skiers. Whether or not ski areas can capitalize on the expected growth in the market will depend to a large extent on how proficient they are in (1) identifying the different segments that comprise the downhill ski market, (2) selecting as targets those market segments in which they can reasonably expect to gain a competitive advantage and realize a profit, and (3) designing a marketing strategy which will be effective in attracting "targeted skiers."

The strategy of segmenting the market is not new to persons involved in ski area management and marketing. The advantages from being able to concentrate marketing effort on clearly defined market segments has been advanced many times in articles appearing in ski industry trade journals. However, development and implementation of market segmentation strategies requires that the managers of Michigan's ski areas have a fairly comprehensive understanding of the different segments that comprise the

downhill ski market. A lack of research effort toward the problem of segmenting the downhill ski market in Michigan coupled with the difficulties which have been encountered in identifying appropriate segmentation criteria/bases, have effectively prevented the state's ski area managers from implementing market segmentation strategies. The practical problems associated with segmenting the downhill ski market--the subject of this study--will be discussed in the next section.

PROBLEM STATEMENT

The starting point for developing a market segmentation strategy must be the identification of market segments. Segmenting a market means, "subdividing it into homogeneous subsets of customers where any subset may conceivably be selected as a target market" (Kotler, 1976, p. 144). While the concept seems simple enough, the actual act of segmenting a market is very difficult. The practical problem stems more from the myriad of alternative criteria/bases on which customers can be aggregated into segments rather than a lack of possibilities (Frank and Green, 1968, p. 84). Stated another way, "Segmentation of the market is useful, but what concepts are most useful in segmenting the market?" (Plummer, 1974, p. 34).

The question of what bases are most useful in defining market segments has presented those who wish to segment markets with considerable problems and is a subject of great contention among marketing researchers. It was recently stated that, "There is no problem of greater practical significance than the question of how to most effectively define market segments" (Bass, et. al., 1968, p. 264). This was exemplified by a recent survey taken of marketing executives in which they declared that the act of segmenting the market is among the most crucial problems they confront (McCann, 1974, p. 399).

Although it is statistically possible to segment markets on a variety of customer characteristics (e.g., socioeconomic, behavioral, psychological), not all result in segments that are useful in marketing. To have value for designing and implementing marketing strategies segments should (1) differ in some important aspects of their needs or use of the product being studied (Baumwoll, 1974, p. 15), (2) have adequate sales potential to justify the expense of specially tailored product offerings (Oxenfeldt, 1973, p. 241), (3) be distinguishable in order that producers can selectively reach them through the use of promotional media (Engel, et. al., 1972, p. 17), and (4) be sufficiently stable over time (Cravens, et. al., 1976, p. 250).

The task of segmenting markets is further complicated by the fact that no single criteria can be uniformly applied across all product markets. Variables which have proven to be effective in segmenting one product market are completely ineffective when used to segment other markets (Sissors, 1966). As a consequence, possible segmentation variables need to be tested in each product market (Hirsh and Peters, 1974, p. 63).

Studies undertaken to provide a description of the downhill ski market in Michigan have relied almost exclusively on socioeconomic variables to group skiers into market segments. The key assumption underlying this mode of segmentation is that consumer wants and purchase behavior are highly associated with socioeconomic characteristics. However, recent research has revealed that socioeconomic characteristics (e.g., age, sex, income, education) are poor predictors of purchase behavior and, therefore, less than optimum bases for segmenting markets (Haley, 1968). These findings have led a growing number of marketing practitioners and ski area managers to conclude that substantial effort is needed to develop and refine more appropriate bases for aggregating skiers into market segments.

Of the numerous possible bases which could be used to segment the downhill ski market in Michigan, two are

particularly appealing--*heavy half* and benefits *(attributes) sought* segmentation. Heavy half segmentation entails dividing a market into heavy and light halves on the basis of the quantity of a product purchased. This method of segmenting markets is predicated on two assumptions. First, in virtually all markets there are atypical customers whose habits and preferences provide for the purchase of an exceptionally high volume of the product. Second, identification of these high volume consumers can create advantageous opportunities for producers since heavy users tend to be the least costly and, therefore, the most profitable to serve. The argument goes that producers will maximize sales and return on marketing investment if they design their products and promotional messages to attract persons comprising the heavy half segment.

A more recent approach, benefits (attributes) sought segmentation, involves grouping persons who attach similar degrees of importance to various product benefits or attributes they are seeking from consuming a product. The two basic premises underlying the concept are that the benefits which people are seeking from consuming a given product are the basic reasons for "true"

market segments (Haley, 1968) and that each consumer has a set of benefit aspirations concerning a product class which leads to consistent decisions to purchase one, or a few brands, and reject others (Wind and Silver, 1973). Ideally, if benefits (attributes) sought segments can be identified, then it may be possible to develop a product for each corresponding to its preferences. For example, if a group of skiers who assign a great deal of importance to babysitting services are identified, a ski area desiring to attract this group should offer and advertise these services.

When choosing which variables to use for segmenting a market, it is important to examine a number of possible alternatives. This study was designed to examine different ways of segmenting the downhill ski market in Michigan and, by doing so, provide ski area managers with the necessary information and analysis to guide marketing decisions. Heavy half and attributes sought segmentation analyses were carried out and the segments which emerged were examined to determine (1) if they were large enough in volume potential, (2) if they could be reached through the use of promotional media, and (3) if they differ with respect to their skiing preferences. The objectives of the study are specified in the next section.

STUDY OBJECTIVES AND HYPOTHESES

Two primary objectives guided the course of this study, both of which are comprised of more specific sub-objectives.

Objective One: Apply and evaluate heavy half segmentation as a means of segmenting downhill ski markets in Michigan.

Sub-objective 1: Determine if skiers comprising the heavy half segment can be distinguished from light half skiers on the basis of their socioeconomic characteristics.

Sub-objective 2: Determine if skiers comprising the heavy half segment differ from light half skiers with respect to the importance they assign various ski area attributes (e.g., entertainment, lodging, price of lift tickets) when selecting which ski areas to visit.

Sub-objective 3: Determine if skiers comprising the heavy half segment differ from light half skiers on the basis of participation characteristics/habits.

Objective Two: Apply and evaluate attributes sought segmentation as a means of segmenting the downhill ski market in Michigan.

Sub-objective 1: Determine if skiers can be aggregated into market segments on the basis of the relative importance they attach to different ski area attributes (e.g., entertainment, lodging, price of lift tickets) when selecting which ski areas to visit.

Sub-objective 2: If attributes sought segments can be derived, develop socio-economic profiles of their memberships.

Sub-objective 3: If attributes sought segments can be derived, develop participation characteristic profiles of their memberships.

The above objectives provide a basis for developing testable hypotheses which upon testing, permit one to appraise the extent toward which study objectives were met. Study objective one and its sub-objectives can be rephrased in terms of the following three testable hypotheses:

Hypothesis 1: Skiers comprising the heavy half segment differ from light half skiers in terms of

their socioeconomic characteristics.

Hypothesis 2: Skiers comprising the heavy half segment differ from light half skiers in terms of the importance they assign different ski area attributes (e.g., entertainment, lodging, price of lift ticket) when selecting which ski areas to visit.

Hypothesis 3: Skiers comprising the heavy half segment differ from light half skiers in terms of their participation characteristics.

Study objective two and its sub-objectives can similarly be rephrased into the following testable hypotheses:

Hypothesis 4: Skiers comprising different attributes sought segments differ in terms of their socioeconomic characteristics.

Hypothesis 5: Skiers comprising different attributes sought segments differ in terms of their participation characteristics.

The remainder of this dissertation is organized as follows: Chapter Two provides a review of pertinent literature dealing with market segmentation. The third chapter presents an overview of the research methods which were employed to collect the data needed to achieve the study objectives. Chapter Four reports the basic descriptive data from the two surveys which were administered

to active downhill skiers. Results of the heavy half and attributes sought segmentation analyses which were performed on the survey data are presented in Chapter Five. The sixth and final chapter includes a summary of the study findings and discussion of their possible implications.

C H A P T E R I I

LITERATURE REVIEW

The purpose of this chapter is to acquaint the reader with pertinent literature concerning market segmentation. The chapter includes a review of literature dealing with market segmentation theory, different approaches to market segmentation and the findings of empirical market segmentation studies. Appendix A of this dissertation is intended to supplement and complement this chapter by providing more indepth information on marketing and market segmentation strategy. Persons unfamiliar with these subject areas should consult this Appendix before reading the remainder of this dissertation.

MARKET SEGMENTATION THEORY

Few subjects have entertained more attention in recent marketing literature than market segmentation. The concept originates from microeconomic theories on price discrimination within imperfect competitive markets. It was noted by Robinson (1954, p. 180) that if a firm operating in an imperfectly competitive market could aggregate consumers into "submarkets" on the basis of

their price elasticity, it would be possible to reduce consumer surplus and increase profits through discriminatory pricing schemes. According to Robinson, profitable price partitioning requires that (1) customers comprising the product market differ with respect to their price elasticities, (2) a method be developed for aggregating customers with similar elasticities into the same submarkets, (3) no substantial leakage exists between submarkets, and (4) no legal or cultural barriers affect discriminatory pricing.

Early discussions concerning market segmentation dealt primarily with pricing strategy, disregarding the potential for designing promotional and distributional strategies. Marketing economist Joel Dean (1951) stands out as being foremost in recognizing and addressing the possibility of tailoring promotional and distributional strategies to the requirements of specific market segments. However, recognition of the concept of market segmentation remained insignificant until publication of the landmark article by Wendell Smith which strongly supported use of the concept as a possible means for solving marketing problems. Smith (1956, p. 5) stated that:

> "Market segmentation is based upon developments on the demand side of the market and represents a rational and more precise adjustment of

> product and marketing effort to consumer or user requirements. In the language of economists, segmentation is disaggregative in its effect and tends to bring about recognition of several demand schedules where only one was recognized before."

As was emphasized earlier, the underlying premise of market segmentation theory is that all customers do not share the same response elasticities with respect to marketing mix components (Arndt, 1974; Claycamp and Massy, 1968). According to Smith's "Segmentation Strategy" firms can maximize their profits by tailoring specific product offerings and marketing strategies to segments of consumers with similar response functions. Thus, for segmentation strategy to be an operational concept, a process must be available for aggregating consumers into groups on the basis of their responsiveness to all or some components of a firm's marketing mix (Lessig, 1971, p. 34).

Cravens, Hill, and Woodruff (1976) maintain that the ideal segmentation base, or criteria for aggregating consumers, is a measure of response elasticity among potential customers. However, a technique which would make it economically feasible to measure marketing mix (product, price, promotion, distribution) response elasticities has not yet been perfected (Lessig and Tollefson, 1971). Other authors have added the following: "Little work has been done to determine individual response elasticities to marketing

stimuli let alone using elasticities as a basis for market segmentation? (Assael and Roscoe, 1976, p. 68). The absence of any substantive attempts to measure consumer response elasticities has prompted an intense search for proxy variables that are measurable and that will serve as valid indicators of consumer response elasticities (McCann, 1974, p. 399).

Researchers have experienced considerable difficulty in identifying or developing criteria which would result in exploitable market segments. The dilemmas which have been encountered to date stem not from a lack of potential segmentation criteria but rather from the profusion of possible alternatives (Frank, 1968). The search for valid segmentation criteria is further complicated by the fact that often a variable which has proven to be a valid proxy for response elasticity in one product market may be totally invalid across other product markets (Hirsh and Peters, 1974, p. 60). Dhalla and Mahatoo (1976, p. 36) maintain that there is no single segmentation criteria which can be uniformly applied across all markets. They contend that, "each product market must be viewed as a unique situation."

Although the theory of market segmentation has generally been accepted as a strategic marketing tool

(Arndt, 1974; Brandt, 1966; Winberg, 1972), the quandaries associated with identifying segmentation bases capable of yielding identifiable, accessible, and substantial market segments have made the concept exceedingly difficult to utilize (Arndt, 1974; Winberg, 1972).

GENERAL SEGMENTATION APPROACHES

The search for valid indicators of consumer response elasticities has led to experimentation with a countless variety of segmentation criteria. Three general approaches to segmenting markets have been utilized:

1. *The Customer Descriptive Approach*--in which consumers are aggregated into segments on the basis of their similarity in socioeconomic, personality, and lifestyle characteristics. An attempt is then made to relate segments to certain purchase behaviors (Plummer, 1974).

2. *The Situation Specific or Use Behavior Approach*--in which consumers, who display similar purchase behavior (purchase rate, brand loyalty), are aggregated into the same segment, and then the task of developing identifiable profiles of the segment members is undertaken (Cravens, et. al., 1976, p. 254).

3. *The Benefits Sought or Customer Preference Approach*--in which consumers are aggregated into segments on the basis of their similitude with respect to desired product attributes or the relative importance of desired attributes and then, use behavior and socio-economic profiles are developed for the segments derived (Haley, 1968).

The remainder of this literature review will deal with (1) findings and conclusions of empirical studies in which various segmentation criteria have been employed, and (2) criticisms of market segmentation research.

Customer Descriptive Approaches

Socioeconomic Variables

Socioeconomic variables served as the earliest basis, and still remain the most commonly employed criteria for segmenting markets (Dhalla, and Mahatoo, 1976, p. 34). Even today, few firms go beyond the consideration of traditional socioeconomic variables when segmenting markets (Brandt, 1966). The rationale underlying the use of socioeconomic variables as segmentation criteria is that people who possess the same enduring characteristics are likely to share analogous product needs and exhibit similar purchase behavior (Cravens, et. al., 1976, p. 258). Lessig and Tollefson (1971, p. 480) attribute

this extensive dependence on socioeconomic variables to the accessibility of socioeconomic information and the assumed relationships between socioeconomic characteristics and purchase behavior.

There exists a considerable degree of disagreement in the literature as to whether or not socioeconomic variables continue to serve as effective segmentation bases. The persistent use of socioeconomic segmentation criteria has been questioned in a recent series of research articles. Yankelovich (1965, p. 94) maintains that the underlying premise which holds that differences in purchase behavior will be reflected by differences in age, sex, and income, seldom holds up. Furthermore it has been asserted that the dynamic nature of society has severely limited the ability of socioeconomic variables to predict brand preference or distinguish good and unreliable market prospects (Scissors, 1966, p. 19). A number of buyer behavior studies have disclosed that only a modest degree of association exists between socioeconomic variables and purchase behavior (Frank, et. al., 1967; Kopenon, 1960; Twedt, 1967). After reviewing expenditure studies of a wide range of product markets, Ferber (1962) concluded that the proportion of variation in household expenditure explained by socioeconomic variables is minimal. On the basis of their research

findings, Romsa and Girling (1976) concluded that socio-economic variables are not likely to be reliable in distinguishing between groups of outdoor recreationists. Following his research into a host of studies, Frank (1968, pp. 39-68) concluded that socioeconomic characteristics are not particularly effective bases for segmentation either in terms of their association with purchase rate or response to promotion. Dun (1968) also questioned the serviceability of socioeconomic characteristics as a basis for market segmentation.

The applicability of socioeconomic segmentation criteria has also been challenged on the grounds that the resulting segments are not exploitable from a marketing standpoint (Gonzalez,1975; Arndt, 1974; Haley, 1968; Yankelovich, 1965). Scissors (1966) contends that socioeconomically derived market segments fail to provide the insight or informative content needed to guide product positioning decisions. Yankelovich (1965) asserts that the development of market segments on the basis of age, sex, income or other traditional socio-economic variables is not likely to provide as much direction for marketing strategy as management would like. It has also been noted by others that, although socioeconomic criteria can be utilized to formulate identifiable market segments, they do not provide adequate information

with respect to the product requirements of consumers comprising the various segments (Gonzalez, 1975).

McCann (1974) and Wilkie (1971) both find it highly improbable that segments derived from socio-economic criteria, will encompass individuals with similar marketing mix elasticities due to the number of variables which intervene between socioeconomic characteristics and purchase behavior. From the results of his study, McCann concluded that differential response to marketing stimuli is more likely to exist between segments derived on the basis of situation specific rather than socioeconomic segmentation bases. In concurrence, Lessig and Tollefson (1971) see little reason to presume that customers, aggregated on the basis of their socio-economic characteristics, will respond in a similar manner to different levels of marketing mix components.

In accordance with other practitioners, Yankelovich (1964, p. 89) contends that the shortcomings and inadequacies of the socioeconomic approach to market segmentation does not necessarily mandate total abandonment of socio-economic criteria. He suggests that they might function as a basic instrument in the search for a greater understanding of market segments formulated through other segmentation bases. Barnett (1969, p. 154) maintains that measures of socioeconomic characteristics should be

employed in conjunction with other variables to develop exploitable profiles of segment members.

Stage in Family Life Cycle

The apparent failure of univariate socioeconomic approaches to produce exploitable marketing segments has led to a growing interest in various socioeconomic indexes as means of segmenting markets (Hirsh and Peters, 1974). Stage in family life cycle is one type of index which has been extensively used to segment product markets including markets for some outdoor recreational activities (LaPage, 1976). The use of life cycle stage as a segmentation criteria is based on the underlying logic that at each stage of an individual's life, he/she is expected to perform certain traditional roles and these roles influence and, in part, determine product preference and purchase behavior (Clark, 1955; Rich and Jain, 1968).

In general, life cycle indexes combine five socioeconomic variables: (1) marital status, (2) age, (3) offspring vs. no offspring, (4) age of the offspring, (5) whether or not children reside with their parents. Kotler (1976, p. 83) formulated and recommends the following life cycle stages as segmentation criteria:

1. The Bachelor Stage : Young, single people
2. Newly Married Couples : Young, no children
3. Full Nest I : Young couples, youngest child under six
4. Full Nest II : Young couples, youngest child six or over
5. Full Nest III : Older couples with dependent children
6. The Empty Nest : Older couples with no children in residence
7. The Solitary Survivors : Older, single people

The findings of several published studies indicate that purchase behavior in relation to particular products is significantly associated with stage in life cycle. Engel, Kollan and Blackwell (1968) reported that consumers comprising the same socioeconomic grouping (class) often exhibit divergent purchase behavior if in different stages of their life cycle. Carman (1965), and Lansing and Morgan (1955) found life cycle stage to be significant in predicting the percentage of income households spent on the purchase of durable goods. Hirsh and Peters (1974) examined the correlation between life cycle stage and the frequency of participation in fourteen different entertainment activities. Included among the fourteen were downhill skiing, golf, bowling, and recreational travel. Four life cycle stages were used: (1) under forty, without children; (2) under forty, with

children; (3) forty and over, with children in residence; (4) forty and over, without children in residence. Results from the study revealed that lifecycle stage was significantly correlated with participation/non-participation in a majority of the entertainment activities considered. Participation in skiing was among the activities found to be strongly affiliated with life cycle stage. Barnett (1969, p. 156) reported that consumption of some products is significantly associated with stage in life cycle. However, he adds that life cycle is too insensitive as a measure for establishing preference patterns within classes of products.

Situation Specific Approaches

The failure to produce exploitable market segments using socioeconomic criteria has led to intensified experimentation with a variety of situation specific segmentation criteria. Sellers (1973) finds it more reasonable to assume that variation in purchase behavior is accounted for more by situation specific than socioeconomic variables. Reports have substantiated the fact that situation specific variables are more effective bases for segmenting markets than socioeconomic variables (Frank, et. al., 1967). Two of these will be discussed below--purchase rate and brand loyalty.

Heavy Half Segmentation

The situation specific criteria which has received the greatest attention and usage is purchase rate. Segmentation on the basis of the quantity of a product purchased (or consumed) is, as was mentioned in Chapter I, commonly adverted to as heavy half segmentation (Trost and Barker, 1973). The term heavy half is somewhat misleading and has resulted in a degree of confusion with respect to segmentation on the basis of purchase rate. Garfincle (1965, p. 14) claims that in many product markets, it may not be the top 50 percent, but rather the top 10 percent of the users that represent the most profitable segment. His studies reveal that for many product classes, 10 percent of the consumers make 85 percent or more of total purchases.

A number of researchers have reported success in identifying heavy volume purchases/users and aggregating them into market segments. Twedt (1967) succeeded in identifying heavy half segments for eighteen product classes. In each product class which Twedt examined, high volume users purchased significantly more of the product than did consumers comprising the light half. Twedt's findings revealed that for a majority of products, members of the heavy half segment accounted for seven to ten times

the volume of purchases made by light users. In addition, he discovered that for many products, purchases by the heavy half often constituted between 80 and 90 percent of total sales. Romsa and Girling (1976) succeeded in forming distinct groups of recreationists on the basis of annual participation rates. In sixteen of the eighteen outdoor recreation activities analyzed, prominent variations existed in the frequency of visits among groups of recreationists. In support of this, Gilespie (1973) reports that recreationists could be aggregated into segments according to frequency of participation, as well as simple presence or absence of participation.

A study by McCann (1974) provides some evidence that members of divergent purchase rate segments exhibit different degrees of responsiveness in relation to marketing stimuli. McCann assigned consumers to three market segments on the basis of the quantity of a particular good they purchased. The response elasticities of each segment were then estimated using a linear regression model. Tests on the regression coefficients disclosed that light and medium volume segments were significantly more responsive to changes in price level than were heavy volume purchasers. Heavy users, on the other hand, were reported to be significantly more responsive to advertising levels than either the light

or medium volume purchasers.

Questions have been raised with respect to whether or not firms can effectively focus marketing efforts on the heavy half segment. Barriers which impede exploitation of the heavy half segment relate to (1) an inability to identify heavy users, and (2) lack of homogeneity within the heavy half segment regarding benefits sought from a product. Cravens, Hills and Woodruff (1976, p. 254) maintain that the major obstacle to the development and implementation of segmentation strategies aimed at the heavy half is the inability to distinguish between light and heavy users. Twedt (1967) failed to find a significant correlation between heavy half membership and a number of socioeconomic variables. His findings led to his conclusion that socioeconomic variables have only a relatively modest degree of association with purchase rate. Frank, Massy and Boyd (1967) reported that the average proportion of variation in household purchase rate associated with socioeconomic characteristics across 57 products was only 11 percent. The findings of Brich (1969), Burdge and Field (1971), Cichette (1973) and Romsa and Girling (1976) were in agreement with respect to the inability of socioeconomic variables to explain frequency of participation in a variety of outdoor recreational activities.

The heavy half segment is also difficult to exploit

because of the lack of homogeneity among heavy users with respect to benefits they seek from products (Haley, 1968, p. 33), Dhalla and Mahatoo (1976, p. 35) maintain that heavy half findings have been discouraging because heavy half members do not ordinarily share similar aspirations with regard to product attributes. Haley's research (1968) on coffee drinkers revealed that some heavy users were price oriented and therefore purchased economy brands; while other heavy drinkers purchased premium brands since their purchase behavior was influenced by the emphasis they placed on flavor and quality. On the basis of these findings, he concluded that the two groups would not be equally favorable prospects for any one brand, nor could they be expected to react agreeably to the same promotional appeals. Scissors (1966, p. 20) is of the opinion that the lack of homogeneity among heavy users and the inability of researchers to develop exploitable profiles for heavy half members calls for the use of purchase rate in conjunction with other segmentation criteria and as a measure of the sales potential of segments derived from other criteria.

Brand Loyalty

Brand loyalty is likely to be the second most frequently employed situation specific segmentation

criterion. However, definition of brand loyalty is debatable (Frank, 1967). Cunningham (1956) distinguished brand-loyal from non-loyal consumers on the basis of the proportion of their purchases devoted to the brand most commonly purchased; while Brown (1952) used the percentage of purchases concentrated on relatively few brands.

Studies by both Brown (1952) and Cunningham (1956) disclosed a tendency among some consumers to concentrate their purchases on a limited number of brands comprising a product class and that the degree of brand loyalty differed significantly among consumers. Brown's findings indicated that customers tend to concentrate their purchases on one or a few brands regardless of changing competitive situations and fluctuations in brand prices. After reviewing results of these and numerous other studies in which brand loyalty was examined, Frank (1967) concluded that there is definite evidence that brand loyalty is a real and reliable criterion on which to segment markets.

Some question has been raised, however, with respect to whether or not brand loyal segments can successfully be exploited (Scissors, 1966). A number of researchers have encountered problems in distinguishing between brand loyal and non-loyal consumers. Frank and Boyd (1965) reported that brand loyal customers often

show no dissimilarity from non-loyal consumers in terms of their responsiveness to marketing mix components (Frank, Massy and Morrison, 1963 and 1964; Frank and Boyd, 1965). Using regression analysis to calculate response elasticities, Frank and Boyd were unable to uncover any statistically significant difference between loyal and non-loyal customers regarding responsiveness to either price or advertising levels. Thus, while brand loyalty and volume consumed (heavy half) criteria may serve as indicators of sales potential and overall quality of market segments, there is no evidence that either results in exploitable market segments when used alone (Frank, 1967; Scissors, 1966; Dhalla and Mahatoo, 1976).

Neither customer descriptive nor situation specific approaches adequately reflect possible customer reaction to different marketing strategies. This had led to a search for segmentation criteria that more closely approximates customer responses to different product offerings. One of these approaches--benefits (attributes) segmentation--will be discussed in the next section.

Benefits Sought Approach

The segmentation of markets, based on the relative importance consumers assign to benefits they expect to

realize as a result of consuming a particular product, is referred to in the marketing literature as benefit segmentation (Haley, 1968; Barnett, 1969). The main purpose of benefit segmentation is to identify segmentation criteria that more closely approximate customer response elasticities with respect to specific product attributes (Cravens, et. al., 1976, p. 259).

In his work on benefit segmentation, Haley outlines a two step procedure whereby consumers are questioned to determine the relative importance they attach to various product benefits. Q-factor analysis is then employed to formulate clusters of individuals who attach a similar degree of importance to the same product benefits. Haley (1968, p. 32) explains that it is the total configuration of benefits sought which differentiates one segment from another, rather than a preference for entirely different benefits. He maintains that the benefit segmentation approach results in information which is appropriate for (1) suggesting physical changes in products currently on the market, (2) identifying new product opportunities, (3) developing more relevant promotional strategies, and (4) selecting the most effective advertising media. Other researchers contend that the understanding of the different market segments which result provides the marketing manager with

the insight essential to the effective design of product offerings (Baumwoll, 1974; Dhalla and Mahatoo, 1976).

Relatively few empirical studies have been published in which a benefit segmentation approach was taken. Challenging tradition, Baumwoll (1974), in a study of airline passengers, successfully identified five significantly different benefit segments. Using Q-factor analysis, passengers were aggregated into clusters on the basis of the degree of importance they assigned to (1) price, (2) safety, (3) equipment, (4) stewardesses, (5) food, (6) comfort, and (7) schedules. Analysis of the identified benefit segments revealed significant disparity with respect to (1) size (percentage of the market), (2) frequency of flying, (3) reason for flying, and (4) the likelihood of flying first class. In another study, Haley (1971) reported that pretests with advertisements specially designed to appeal to different benefit segments were remarkably more effective in terms of "ad interest," attention value, and brand awareness than were non-benefit specific promotional appeals.

The derivation of benefit segments does not, in itself, provide the marketing manager with a sufficient base of information with which to select target markets or

for directing promotional strategies (Haley, 1968; Baumwoll, 1974). Scissors (1966) asserts that to know benefit segments without having a fairly accurate estimate of their size, composition, and character is to be inadequately equipped to implement an effective market segmentation strategy. According to Yankelovich (1964), the key to effective benefit segmentation research is recognizing what different customers are searching for and expect from a product. Following the formulation of benefit segments, Haley (1968) suggests that these segments be contrasted with each other in terms of demographic, socioeconomic, and lifestyle characteristics. Some researchers urge that other variables be used in conjunction with benefits sought criteria in order to develop a more comprehensive understanding of the customers that comprise the various benefit segments (Haley, 1968; Baumwoll, 1974; Plummer, 1974).

The exploitability of benefit segments depends on the ability of researchers to develop socioeconomic-demographic profiles of segment members. However, in three studies (Hustard, et. al., 1975; Haley, 1971; Green, et. al., 1972) in which discreet benefit segments were assembled, researchers were unable to discriminate between the segments on the basis of the socioeconomic or lifestyle characteristics of their constituent members.

In all three studies, the researchers were ineffectual in formulating distinctive socioeconomic profiles for the different benefits segments which were derived.

On the surface, benefit segmentation appears to be rather straightforward; however, Cravens, Hills and Woodruff (1976, p. 261) claim that the data and analytical techniques are rather complex and the approach is too new to make an evaluation as to its applicability across a wide range of products. Other researchers have recommended that care be taken when interpreting the findings of benefit segmentation since grouping techniques which are used to formulate the clusters can result in purely spurious clusters (Dhalla and Mahatoo, 1976, p. 136). One major shortcoming which has been observed with respect to the benefits sought approach is the inability to determine what attributes are associated with what psychological benefits (Green, 1975, p. 28). Frank, Massy, and Wind (1972) contend that what is often missing is a method for transforming psychological dimensions into actionable and operational product dimensions. Thus, while benefit segmentation appears to offer a great opportunity for segmenting markets in a manner which will assist in the development of tailored products and marketing strategies, additional applications are required to refine and improve the techniques (Plummer, 1974).

MULTI-CRITERIA SEGMENTATION

Due to the unfavorable results of segmentation studies in which researchers relied on univariate segmentation criteria, an increasing number of marketing practitioners have recommended multi-criteria approaches to market segmentation. Scissors (1966, p. 19) claims that if researchers limit themselves to considering one or only a few potential segmentation criteria, the resulting studies may fail to provide utilitarian information to marketing managers. Other practitioners are of the opinion that segmentation studies have suffered because researchers have confined themselves to only a limited number of possible segmentation criteria (Yankelovich, 1964). Baumwoll (1974, p. 16) contends that; "while it is essential to approach market segmentation research with some hypotheses as to how the market can most meaningfully be segmented, it is extremely risky to structure studies in such a way as to preclude exploring alternative methods of segmentation."

A number of researchers have concluded that customer descriptive, situation-specific or benefits-sought criteria, if used alone, are inadequate bases for segmenting product markets (Hirsh and Peters, 1974, p. 61). Generally, consensus is that a number of segmentation criteria

should be used in market segmentation studies. Dhalla and Mahatoo (1976, p. 36) assert that a well planned segmentation study will not rely exclusively on one criterion to aggregate consumers into market segments. In addition, Hustard, Thomas and Meyers (1975) contend that the chances of providing meaningful results from segmentation studies are greater if they employ multiple segmentation bases.

CRITICISMS OF MARKET SEGMENTATION RESEARCH

The majority of criticisms regarding market segmentation research note the preoccupation many researchers have with the development of sophisticated statistical techniques. According to Guitan and Sawyer (1974), and Tucker (1974), methodological advances have not been accompanied by research responsiveness to the data needs of management. Baumwoll (1974) maintains that the great emphasis placed on the development of more advanced statistical methods results from researchers erroneously viewing market segmentation as a research technique rather than a marketing strategy. Another prevailing criticism directed at segmentation studies cites how researchers neglect problems and opportunities associated with implementing segmentation strategies. To date, the most serious drawback of segmentation research is that it

usually focuses exclusively on the first step of market segmentation strategy--the identification of segments (Arndt, 1974; Bass, et. al., 1968).

Wilkie (1970) claims that researchers frequently fail to provide supplementary information and analysis necessary for marketing managers to design and implement market segmentation strategies. It has been recommended that greater emphasis be directed toward the interpretation and implications of findings (Conhran, 1974; Bell, 1972, p. 185). Other market analysts advocate that within segmentation studies, recommendations include strategies which, if implemented, would attract a number of various segments (Wilkie, 1970).

Conhran (1974) attributes the failure of many market segmentation studies to generate implementable data to the following factors: (1) a failure to perceive market segmentation as a marketing strategy as opposed to a research methodology; (2) an assumption that all markets have the capacity to be segmented, when, in fact exceptions are not unlikely; (3) a method rather than information orientation on the part of researchers; and (4) a failure to design studies in such a way as to provide the information essential to the creation and implementation of marketing segmentation strategies.

Questions regarding the applicability of market segmentation results have prompted a mounting number of marketing experts to recommend steps which would improve the applicability of results from market segmentation studies. Baumwoll (1974, p. 16) interviewed twenty-five marketing researchers regarding the criteria which they used to evaluate the success of segmentation studies. The criteria most frequently cited was whether or not the study was useful, practical and/or implementable for marketing and advertising strategies. Researchers advocated that segmentation studies should (1) present data that are logical and relevant to marketing issues which are of concern to management, (2) present results in a fashion that would enable managers to grasp their meaning, and (3) include considerations on the implementation of the information for marketing strategy development.

The purpose of this chapter was to acquaint the reader with the literature dealing with market segmentation. The reader desiring more indepth information on market segmentation theory is again referred to Appendix A. The next chapter will provide an overview of the research methods which were employed to achieve the study objectives.

C H A P T E R I I I

RESEARCH METHODOLOGY

The purpose of this chapter is to provide the reader with an overview of the methods employed to obtain the data required to meet the study objectives. In brief these objectives were: (1) to apply and evaluate heavy half segmentation as a means of segmenting the downhill ski market in Michigan; and (2) to apply and evaluate benefits (attributes sought segmentation as a means of segmenting the downhill ski market in Michigan. The chapter is divided into the following sections dealing with (1) data collection methods, (2) sampling design, (3) telephone interviews, (4) the mailed questionnaire, and (5) data preparation.

DATA COLLECTION METHODS

Achievement of the study objectives required collection of data from active downhill skiers. However, the financial resources available to conduct the study proved to be a major constraint in carrying forth both the sampling design and data collection. Another constraint identified was the lack of a representative list of active

downhill skiers residing in Michigan from which a representative sample could be drawn.

After considering a variety of data collection methods, a decision was made to rely on telephone interviews to procure the bulk of the data needed for the analysis. A telephone survey would combine the advantages and disadvantages of both personal interviews[2] and self-administered mail surveys.[3] These advantages include:

1. The response rate yielded is generally higher than mail surveys if call backs are employed (Seltiz, et. al., 1976, p. 229).

2. Telephone interviews are usually a less expensive and more expeditious method of collecting data than personal interviews (Green and Tull, 1975, p. 150).

3. Telephone surveys can generally reach a greater number of respondents over a broader geographical area than personal interviews (Green and Tull, 1975, p. 150).

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[2]Two principal problems would have been associated with the use of personal interviews as a data collection method. First, since a list of active skiers was not available, personal interviews would have required administration on site at selected ski areas. The research budget would not have permitted samples of enough downhill areas to insure a representative sampling of skiers. Second, the high cost of obtaining personal interviews (transportation,subsistence, labor) would have severely restricted the number of interviews administered.

[3]A mail survey was not used for two reasons: (1) the low return rates characteristic of mail surveys and subsequent non-response bias, (2) the lack of efficiency related to using mail questionnaires to survey the general population.

4. It is more convenient and practical to supervise and monitor telephone interviews as opposed to personal interviews (Seltiz, et. al., 1976, p. 297).

5. The interviewer can clarify any misunderstandings the respondent might have pertaining to certain questions, as opposed to mailed questionnaires (Weintz, 1972, p. 79).

The most advantageous aspect of a telephone survey relative to this study was its capacity to serve as a quick and inexpensive method of identifying active skiers in the general population.[4] However, since much of the data needed to explore and evaluate the application of attributes sought criteria as a means of segmenting the active downhill skier market (Objective Two) did not lend itself to collection on the telephone, it was decided to supplement the telephone survey with a mailed, follow-up questionnaire. In addition, a specific screening process was designed to elicit distinctions among active, inactive, dropout, and potential skiers.

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[4] A telephone survey was not without its inadequacies. Telephone surveys have the following limitations: (1) the quantity of data which can be collected during a phone interview is less than that which can be gathered during a personal interview, (2) telephone survey data are biased in favor of households which subscribe to phone service and have listed numbers, (3) telephone surveys are restricted to verbal questions administered orally.

SAMPLING DESIGN

Information regarding the sampling method which was employed is presented in this section. Subjects covered include (1) study area boundaries, (2) sample size, (3) sampling frame, (4) distribution of sample, and (5) selection method.

Study Area Boundaries

To avoid long distance telephone charges, the survey was restricted to five calling regions accessible by leased telephone lines of Michigan State University. These calling regions included Ann Arbor, Detroit, Grand Rapids, Lansing, and Pontiac. Confining the geographic scope of the telephone survey to these five regions reduced the size of the population to which the findings would be generalizable. However, the absence of long distance phone charges permitted extensive interviews with a greater number of individuals which would otherwise have been impossible outside the perimeter of the leased line zones.

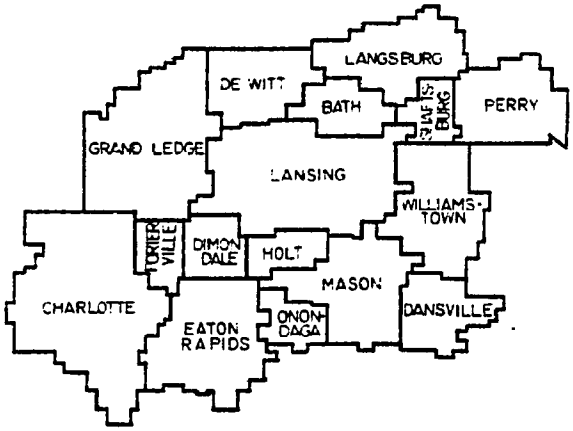
In addition to the economic considerations, it was deduced that residents comprising the five calling areas were reasonably representative of the Michigan's downhill ski market based on the fact that (1) thirty-three percent (9,090,000) of the state's population

reside within the geographic boundaries of the five calling regions;[5] (2) a high percentage of downhill skiers in the state inhabit these regions (Farwell, 1977); and (3) the calling regions included rural, suburban and urban areas (see Figure 1). The sample population was additionally limited by a decision to restrict interviews to members of sampled households who were eighteen years of age or older.

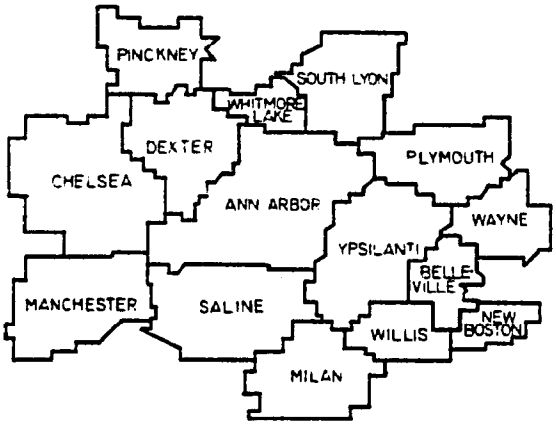
Sample Size

Based on the recommendations of past market segmentation studies and taking into account the number of observations required for statistical analysis, it was determined that a minimum of 200 active skiers be identified and surveyed to permit (1) segmentation of the market, and (2) statistical analysis of the segments that were identified. Based on Farwell's finding that approximately 10 percent of the residences in lower Michigan yielded one or more skiers (Farwell, 1977, p. 3), it was determined that a sample size of 2,000 households would be needed to successfully identify 200 active skiers in the general population. In addition, to

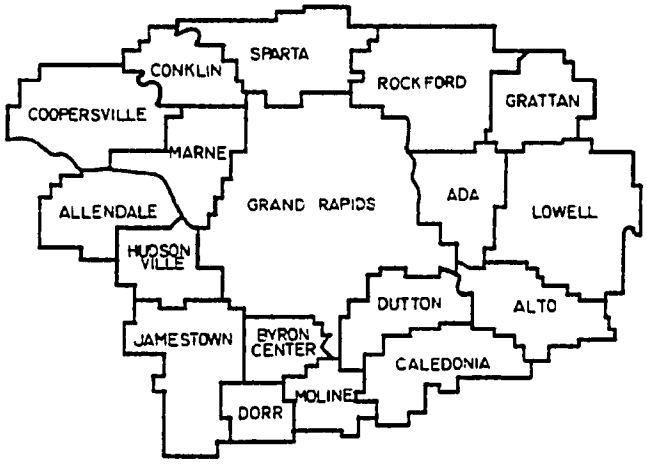
[5]Based on population statistics published in the 1976 Michigan Statistical Abstracts.



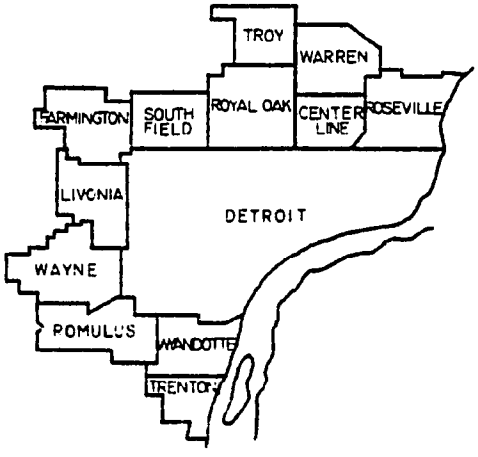
LANSING CALLING AREA



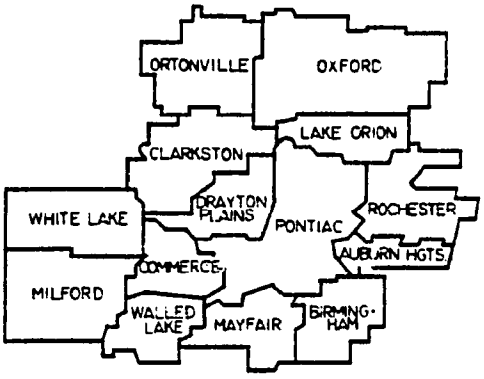
ANN ARBOR CALLING AREA



GRAND RAPIDS CALLING AREA



DETROIT CALLING AREA



PONTIAC CALLING AREA

FIGURE 1. THE FIVE CALLING REGIONS WHICH WERE SAMPLED

have contacted more than 2,000 households during the six week interviewing period, which the budget permitted, would have been nearly impossible.

Sampling Frame

Phone directories (1977) covering each of the five calling regions served as the sampling frame for the study. However, the use of telephone listings may not have resulted in a representative sample of the population residing within the five regions. The survey data are biased since non-subscription to telephone service or unlisted numbers are often related to certain socioeconomic conditions.[6] Therefore, the sample was most likely unrepresentative of (1) persons classified with low incomes who constitute a high percentage of nonsubscribers (Seltiz, et. al., 1976, p. 298), (2) a certain percentage of persons with substantial incomes who prefer to have unlisted numbers (Wientz, 1972. p. 83), and (3) persons who established residency after publication of the 1977 phone directories.

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[6]Leuthold and Schellee (1975) reported that those persons with low incomes and high incomes are less likely to have listed numbers. They estimated that nonsubscribers made up 10% of the population and 9% of the population hold unpublished listings. Cooper found that 9% of the subscribers at the beginning and 18% of the subscribers at the end of the directory year were not listed in the greater Cincinnati phone directory.

Distribution of the Sample

The sample of 2,000 households was proportionately selected from each calling region based upon an estimate of the number of phone listings in the designated directories. For example, it was calculated that the five directories contained approximately 1,033,240 phone numbers. The Ann Arbor directory was estimated to contain 12 percent (128,721) of the estimated total. Therefore, of the 2,000 households to be sampled, 12 percent were drawn from the Ann Arbor phone book. The distribution of the sample can be seen in Table 1.

Selection Method

A systematic sampling scheme was employed to select the required number of households from each directory. A random number table was utilized to determine the sampling scheme--the column and location within a column, e.g., fifth name from the top of the page, selection of odd or even pages, and the page number from which the sampling would commence.[7,8]

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[7] If a business or other non-household was in the position to be sampled, the next private household encountered, moving down the page, was selected.

[8] The assistance of Wilbur LaPage in providing draft copies of survey instruments for his national ski marketing study (LaPage, 1979) is gratefully acknowledged. Instrument designs were adjusted where possible to permit comparisons with the national survey.

Table 1.--Distribution of the Sample Among the Five Calling Regions

Calling Region	Estimated Number of Listed Phone Numbers	Percent of Listed Phone Numbers	Sample Size
Ann Arbor	128,721[a]	12%	240
Detroit	347,200	34%	680
Grand Rapids	140,400	14%	280
Pontiac	295,053	28%	560
Lansing	121,875	12%	240
TOTAL	1,033,249	100%	2,000

[a]The estimated number of listed phone numbers was arrived at by choosing a page number using a random number table, counting the number of listings on one randomly selected column and then multiplying the number of listings in the column by number of columns and by number of pages.

TELEPHONE SURVEY

This section deals exclusively with the telephone survey which was administered to active skiers. The section is divided into six parts relating to (1) survey instruments, (2) interviewer training, (3) interview schedule, (4) screening, (5) survey administration, and (6) response rate.

Survey Instruments

The decision to interview active, inactive, dropout, and potential skiers required the formulation of four survey instruments based on the fact that information to be collected would vary from group to group. The instruments were developed during the fall of 1977 and pretested during the interviewer training process (see the section on Interview Training). Each of the revised survey instruments was then printed on paper of specified colors to assist interviewers in administering the appropriate survey to a particular respondent (see Appendix B).

Questions comprising the telephone survey administered to active skiers were designed to procure

information on:

(1) downhill skiing participation characteristics

(a) number of days skied during the 1976-1977 season

(b) number of ski areas frequented during the 1976-1977 season

(c) favorite and most frequented ski areas in Michigan

(d) timing and duration of ski outings

(e) whether or not the respondent participated in a downhill ski vacation and, if so, how long did they last and where did they go

(f) skill level, equipment ownership (rent/own) and ski club membership

(2) history of involvement in downhill skiing

(a) age and year when the respondent first picked up downhill skiing

(b) whether the respondent's parents were or had been downhill skiers

(3) socioeconomic characteristics

(a) age

(b) sex

(c) education level

(d) marital status

(e) family status

(f) income

Interviewer Training

To successfully complete this portion of the study, special emphasis was directed toward the proper selection and training of the interviewers. The appointed team consisted of five women students enrolled at Michigan State University. They were chosen following a personal interview on the basis of (1) demeanor, (2) verbal communication skills, and (3) willingness and ability to work through the duration of the study at the designated times.[9] The briefing and instruction process took place over a two week period in the following sequence:

1. The interviewers were furnished with copies of the four survey instruments during an organizational meeting. The project coordinator then described each survey instrument step-by-step, answering all inquiries concerning questions and type of supplemental information that interviewers could provide respondents.

2. In order to familiarize themselves with the instrument and to reconcile any feelings of uncertainty,

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[9]All other things being equal, students with subsidized work study allotments were given top priority. Employment of work study students reduced the labor costs associated with interviewing.

it was suggested that interviewers practice administering the surveys to friends or acquaintances. Interviewers were requested to solicit feedback from those interviewed regarding (1) clarity of the questions, (2) appropriateness of the length of the interview, and (3) delivery style of the interviewer.[10]

3. A simulated interview session was then organized with members of the group posing as either respondent or interviewer. Each received critical feedback from both the person being canvassed, as well as from other members of the team observing these practice interviews.

4. During the final training session, each woman on the team was required to interview the project coordinator, acting in the role of a hypothetical respondent, and subsequently scrutinized with respect to delivery style, adherence to questionnaire format, and ability to answer potential questions without providing bias to the responses. In addition periodic monitoring was conducted throughout the survey.

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[10]This step in the training process served as a pretest of the survey instrument. Based on feedback from respondents and observations of the interviewers, minor yet significant changes were made in the wording of the questions and format.

Interviewing Schedule

Telephone interviewing began on February 1, 1978 and continued through March 9, 1978. Canvassing took place Monday through Thursday from 6:30 p.m. to 9:30 p.m. and on Saturday afternoons from 12:00 noon to 3:00 p.m. Three attempts were made to contact each household. The return calls were spaced over a two week period, with at least one attempt executed during a weekend and no less than one on a week night. The return call schedule was initiated to reduce non-response bias against individuals who may have worked evenings or weekends.

Screening Mechanism

In recognition of the probability that those initially contacted would not be eighteen and older and taking into account a degree of uncertainty as to their age, three introductions (see Appendix C) were designed for use in the following situations: (1) when it was obvious that the respondent was over eighteen, (2) when the respondent was obviously under eighteen, and (3) when the interviewer could not be sure as to the respondent's age.

Once the interviewer was satisfied that the person

on the telephone met the minimum age criteria to answer for the household, she proceeded to identify both herself and the sponsor of the survey (Department of Park and Recreation Resources at Michigan State University) and provide information as to how the person's household was selected, pledging that the information the respondent provided would remain confidential. At this point the respondent's willingness to cooperate was questioned and, if determined to be agreeable, categorization of the skier type was sought.

The following definitions were formulated to categorize respondents for the purposes of this study:

> *Active skiers* included individuals who skied during the 1976-1977 winter season and anyone taking up skiing for the first time in 1977-1978 prior to the interview period.
>
> *Inactive skiers* are those who have skied one or more years, did not ski in 1976-1977, but indicate they expect to ski again in the future.
>
> *Dropout skiers* are those who have skied one or more years, did not ski in 1976-1977, and indicate they do not expect to downhill ski again.
>
> *Potential skiers* are individuals who have never skied but express an interest in trying downhill skiing sometime in the future.[11]

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[11]The within household screening procedure was employed to maximize the number of active skiers which could be identified. However, since this method of screening was used, all percentage findings related to households, not individuals. For example, if an active skier was identified in 14% of the households contacted, this only means that 14% of the households have one or more active skiers; not that 14% of the population are active skiers.

Survey Administration

The information obtained from respondents during the interview was recorded on answer sheets. The names, correct addresses and identification numbers of each active skier, along with the date on which they were interviewed were recorded on an "active skier mailing list."[12] This roster was used the following day to dispatch mail questionnaires to active skiers.[13]

During the course of each evening, answer sheets, used to record survey data, were collected to check for legibility, consistency of entries, completeness and correct assignment of identification numbers. Errors and omissions were immediately brought to the attention of the interviewer. This permitted the correcting of

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[12]A unique identification number was issued to each respondent and affixed to the answer sheet on which replies were recorded. This identification number was utilized to (1) match information collected from active skiers during the phone interview with that gathered from the mail survey; (2) identify and follow-up with those who failed to respond to the mailed questionnaire; and (3) distinguish between interviewers who had administered the survey should questions arise concerning the interview.

[13]At the end of each active skier interview, the interviewer checked with the respondent to make certain that the address listed in the phone book was the correct mailing address. If not, the current mailing address was obtained. This greatly reduced the number of non-deliverable mail surveys.

mistakes while the interview could be recalled more readily.[14] Continuous review and editing of the answer sheets reduced the amount of editing necessary at the end of the interviewing period, and the amount of missing, non-usable data was greatly reduced.

Response Rate

After four weeks of interviewing, the results were: (1) 1,069 households had been successfully contacted, (2) 593 (active, inactive, dropout potential) interviews had been administered.[15] Of these, 151 or 14 percent, were active skiers. Since research funds permitted only six weeks of telephone interviewing and at least 200 active skier interviews were required, a decision was made to modify the interview procedure. During the last ten days of telephone surveying only active skiers were interviewed. Concentration on active skiers proved to be highly effective. An additional 78 active skiers were identified and interviewed during the last ten days of the survey, bringing the total number of

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[14]Green and Tull (1975, p. 275) contend that editing should be done as quickly as possible after the data has been collected.

[15]A successful contact occurred when someone over 18 in a household was reached by phone and agreed to answer questions.

active skiers interviewed to 229.[16] However, because the interview procedure had been dramatically altered, only the survey findings from the first four weeks can be used to estimate the percentage of active, inactive, dropout and potential skiers in the sample population. This information is provided in Table 2.

Of the 1,069 households successfully contacted, 44 percent (476) contained no one 18 years of age or older who had ever downhill skied or was interested in taking up the activity. Fourteen percent (151) of the households had one or more active skiers. Fourteen percent of the households had at least one inactive skier, while 12 percent had one or more persons who had dropped the sport. Table 2 also reveals that 123 (9 percent) of the 1,277 households which were called could not be reached and in seven percent (85) of the households reached, respondents refused to be interviewed.

MAILED QUESTIONNAIRE

At the close of each interview with active skiers, respondents were gratefully acknowledged for the information

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[16]During the last week, 557 households were contacted. The fact that only active skiers were surveyed permitted interviewers to make a large number of screening calls.

Table 2.--Response Rates on the Telephone Survey by Category - Active, Inactive, Dropout, Potential - of Skier.

Skier Type	Percent of Sample	Percent of Those Contacted	Percent of Those Successfully Interviewed
Active	12% (151)	13% (151)	14% (151)
Inactive	12% (148)	13% (148)	14% (148)
Dropout	10% (126)	11% (126)	12% (126)
Potential	13% (168)	15% (168)	16% (168)
Never Skied and Have No Interest in Skiing	37% (476)	41% (476)	44% (476)
Refused to be Interviewed	7% (85)	7% (85)	--
Not Reachable	9% (123)		
TOTAL	100% (1,277)	100% (1,154)	100% (1,069)

they provided and asked if they would be willing to complete a brief, follow-up questionnaire. Of the 229 active skiers who were successfully interviewed, only 21 (5 percent) responded negatively to this request. Only those respondents who expressed a willingness to complete a mailed survey, were sent one.

The mailed questionnaire was intended to supplement the telephone survey by procuring information from active skiers, that could not be easily collected over the telephone. The main objective of the mail survey was to gather skier preference data on which to base the attributes sought segmentation analysis.

Survey Instrument

Formulation of the mail questionnaire commenced in October, 1977. At that time, an exploratory mail survey (see Appendix D) was sent to 100 members of the Michigan State University Ski Club. The questions were open-ended and specifically designed to gather information by which to develop questions and to formulate appropriate response categories which were to be included on the mail questionnaires sent to active skiers. By November, a rough draft of the questionnaire had been developed and circulated among faculty members of Michigan State University to enlist critical comments with

regard to wording, clarity and sequential ordering of questions and to seek their advice about questionnaire length and format. Faculty response assisted in developing the preliminary survey instrument.

A sample of active skiers enrolled at Michigan State University was selected for pretesting the survey instrument. Based on both the verbal and written feedback received from individuals who participated in the pretest, certain questions were rephrased for clarity.

The final, revised questionnaire was printed on oversized paper and folded into a four page booklet (see Appendix E). The questions were designed to elicit the following categories of information:

1. The relative importance skiers place on seven general ski area attributes when selecting a ski area to visit. These attributes included:
    (a) after ski entertainment
    (b) lodging facilities
    (c) restaurant facilities
    (d) amount of crowding at lift lines
    (e) slope quality
    (f) price of lift tickets
    (g) driving distance from home to the area.
2. The relative importance of specific slope

attributes (e.g., grooming, length and vertical drop) dining styles (e.g., cafeteria, snack bar and sit down dining); and entertainment options (e.g., pool, saunas or bars).

3. The number of hours the skier generally travels to reach a ski area for an overnight or weekend trip, and the maximum distance he/she would be willing to travel.

4. The amount a skier usually pays for a daily lift ticket, and the maximum amount he/she would be willing to pay.

Administration of the Mail Survey

Questionnaires were sent to active skiers the next working day following the night which they were interviewed.[17] Each questionnaire was given an identification number. The following supplementary material accompanied each questionnaire:

1. A stamped, return addressed envelope
2. An introductory letter which:
   (a) thanked them for their cooperation during the phone survey,

[17]Personnel responsible for mailing out questionnaires worked from active skier mailing lists, completed during the previous night's interviewing.

(b) guaranteed the confidentiality of their responses,

(c) explained the purpose of the identification number, and

(d) appealed for a quick response.[18]

Monitoring Returns

As the completed questionnaires were returned, they were examined for completeness and legibility. The data were then transferred to precoded answer sheets (see Appendix F).

Follow-up Procedures

The follow-up procedure, aimed at increasing the rate of response, employed a combination of successive mailings and phone calls.[19] Potential respondents, who failed to return a completed questionnaire within ten days, received by mail a duplicate copy of the questionnaire, a stamped, return addressed envelope and a letter of appeal which stressed the significance of their

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[18]Weintz (1972, p. 88) recommends follow-up mailings as an effective method for increasing response rates in mail surveys.

[19]Babbie (1973, p. 164) maintains that follow-up mailings are most effective when another copy of the questionnaire is sent along with the follow-up letter.

expeditious response (see Appendix F).[20]

If within seven days after the follow-up mailing was sent, a completed survey had not yet been received, the individual was then contacted by telephone. During the course of the conversation he/she was asked (1) if either of the two questionnaires had been received, and if received, (2) whether or not he/she had, or intended to complete and return the questionnaire.[21] Interviewers engaged in follow-up calling were instructed to encourage, but not to pressure respondents to complete and return the survey.

Response Rate

Of the 217 active skiers who were mailed a questionnaire, 193 (89%) returned a completed survey.[22] The high response rate was likely due to a combination of

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[20]Unless the original mailing was returned as non-deliverable, the follow-up mailing was sent to the same address as the first mailing.

[21]Several respondents claimed that they had not received a questionnaire. A phone follow-up was the only effective means of learning about such problems.

[22]Twelve active skiers who were interviewed were not mailed a survey because they expressed an unwillingness to complete one during the phone interview.

the following factors:[23]

1. Potential respondents were asked if they would be willing to complete the survey after being familiarized with the purpose of the questionnaire during the phone interview.

2. The questionnaire was relatively brief requiring little writing on the part of the respondent.

3. The mailed survey provided the respondent with an opportunity to express his preferences of ski area offerings.

4. The effectiveness of the follow-up procedure.

DATA PREPARATION

This section deals with the methods which were employed to prepare the data for analysis. The section is divided into two parts: (1) coding and verification, and (2) computational algorithms.

Coding and Verification

The edge-coded answer sheets which were developed to record survey data greatly reduced both work hours needed for processing and the number of personnel needed

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[23]Babbie (1973, p. 165) states that a response rate of 50% is adequate, 60% is good, and 70% or more is very good for a mailed survey.

for coding.[24] The majority of the questions on the telephone surveys as well as those on the mailed questionnaires, were closed-ended. This facilitated precoding the answer sheets.[25]

A coding scheme was drawn up for open-ended questions on the basis of the responses to surveys administered during the first three weeks of interviewing. Code assignments were recorded in a code book prepared for this study.[26] Answer sheets, sorted according to coded categories, were inspected for errors and then consigned to the Michigan State Computer Center for key-punching. Keypunchers worked directly from the answer sheets, thereby eliminating the need to transfer code assignments to a special code sheet.

Verification of the punched cards was then implemented through a two step procedure. First, coders

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[24]The outside margin of each answer sheet was marked with spaces corresponding to columns on a computer card. Code assignments for the responses to questions were recorded in the appropriate spaces (see Appendix F).

[25]According to Babbie (1973, p. 194), precoding results when codes are assigned to categories on standard questionnaires and data forms before data is collected.

[26]Babbie (1973, p. 195) maintains that even with the simplest survey, it is best to prepare a separate code book; and for complex questions, it is essential.

manually checked the punched cards against the edge codings on the appropriate answer sheets and corrected all obvious punching errors in the process. Frequency counts were then run on the data and the output was inspected for response categories that were outside a fixed range of acceptability for each question. Once all identifiable errors had been remedied the data were placed on a permanent file in the computer, examined for accurate filing, and then transferred to a magnetic tape for storage and use in the analysis.

Computational Algorithms

The analysis was accomplished using the Statistical Package for Social Sciences (SPSS) and selected FORTRAN programs, some of which were formulated especially for this study. All data analysis was performed on the CDC 6 5 00 computer at Michigan State University. The results of the analysis are presented in the succeeding two chapters. Chapter Four will present the general findings of both the telephone survey and mail questionnaire completed by active skiers. The results of the segmentation analyses will be reported in Chapter Five.

C H A P T E R I V

GENERAL SURVEY FINDINGS

This chapter will present the basic descriptive results from the telephone interview and mailed follow-up questionnaire which were administered to the 229 active skiers. Stynes, Mahoney and Spotts (forthcoming) compare Michigan's active, inactive, dropout and potential skiers. The results are presented in three sections. The first deals with the socioeconomic characteristics of the active skier respondents. The second section provides information about their participation characteristics and the third presents a summary of the product attribute findings.

SOCIOECONOMIC CHARACTERISTICS OF ACTIVE SKIERS

This section of the chapter deals with the socioeconomic characteristics of active skiers. Information is provided on six socioeconomic characteristics: (1) sex, (2) age, (3) education, (4) income, (5) occupation, and (6) marital status.

Sex

From 229 active skiers, 134 (60.7%) males and 90 (39.3%) females responded. Comparing these findings to

those of studies undertaken in 1968 indicates that the proportion of females among Alpine skiers has increased only slightly over the last ten years.[27]

Age

The mean age of the active skier respondents was 28 with a range of 18 to 62.[28] Figures 2 and 3 provide a comparison between the age distribution of the general population (18 years of age and older) in Michigan and active skiers who responded to the survey. Individuals between the ages of 18 and 29, inclusively, appeared in the sample at a much higher proportion, 71 percent, than in the general population, 30 percent. Seventy-one percent of active skiers were under 30 and 53 percent under 25 years of age. Conversely, the proportion of active skier respondents, 30 or older was significantly lower than in the general population. A total of 29 percent were found to be in this category in contrast to 70 percent of the general populace. Only 15 percent of the currently active skiers were 40 or older.

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[27]Leuschner (1968) reported 66.3% male, 33.7% female.

[28]Only individuals 18 or older were interviewed.

FIGURE 2.

AGE DISTRIBUTION OF MICHIGAN'S GENERAL POPULATION
SOURCE: U.S. CENSUS (1970)

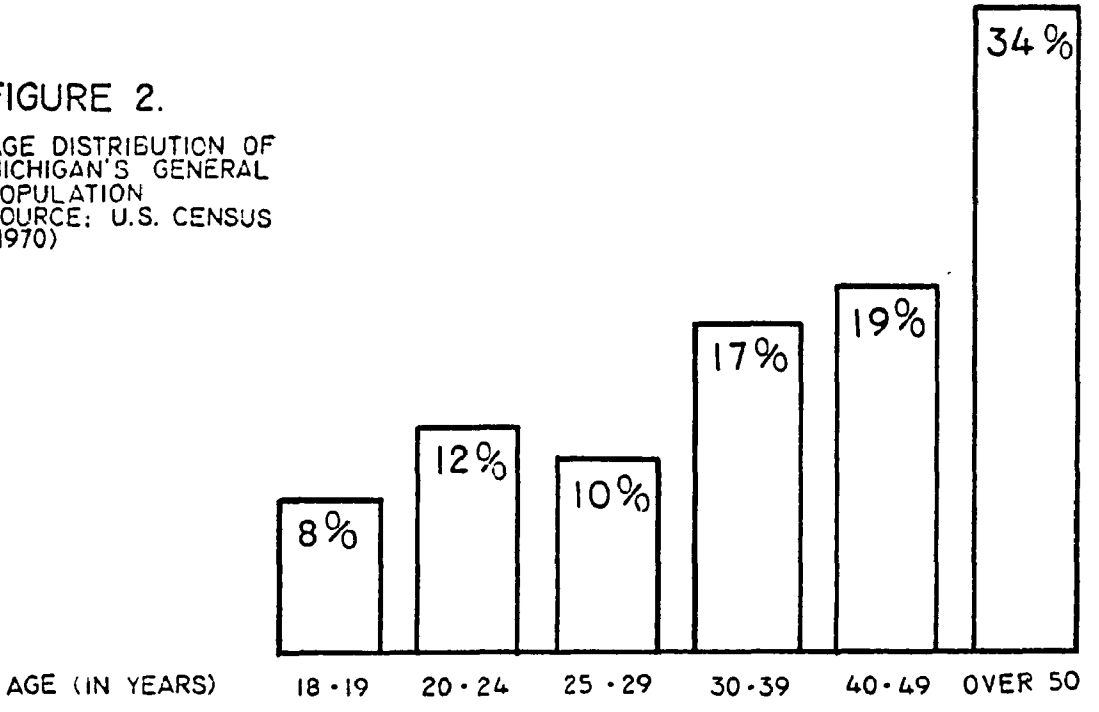
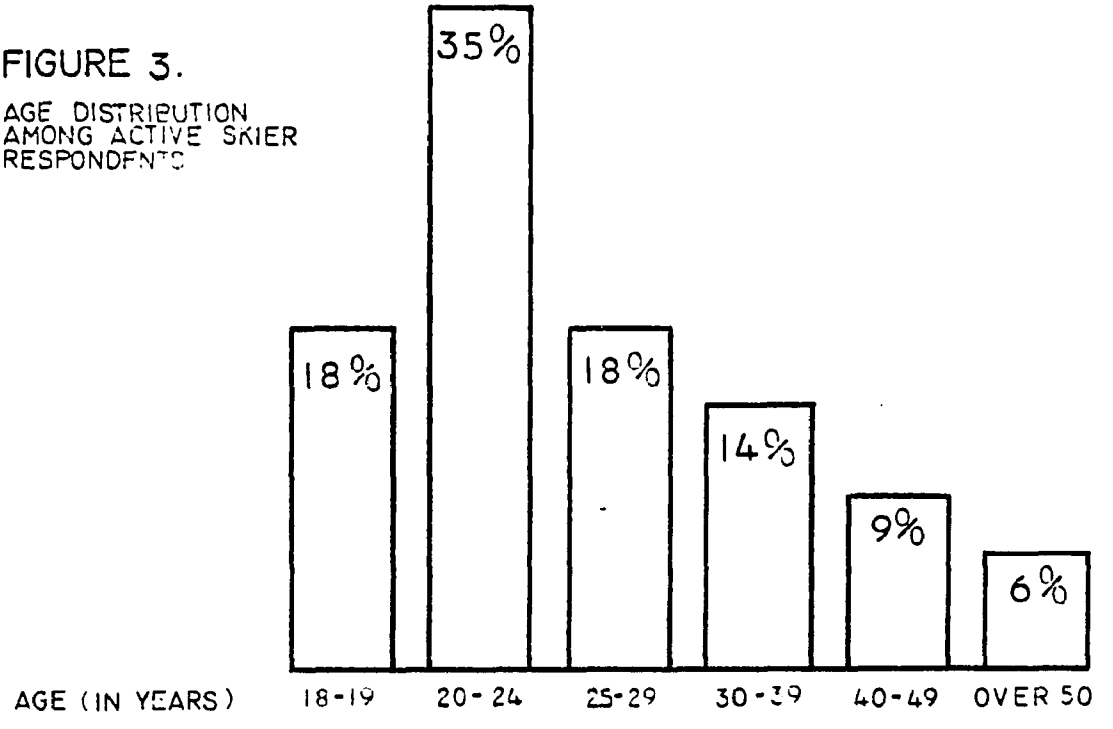


FIGURE 3.

AGE DISTRIBUTION AMONG ACTIVE SKIER RESPONDENTS



Education

The mean level of education attained by active skier respondents was 14.6 years and 15.8 years for those 25 years of age or older.[29] Table 3 presents the highest educational levels achieved by all active skiers interviewed, active skiers 25 years of age or older, and members of the general population 25 years of age or older. The findings indicate that, by and large, active skiers have a significantly greater degree of education than members of the general population. Individuals who pursued their education beyond a high school degree appeared among active skiers (85%) in a much higher proportion than in the general population (19%).[30] Sixty-four percent of the active skier respondents attained a four year college degree in contrast to 19 percent of the general population. It is also noteworthy that 35 percent of the active skiers interviewed continued their education beyond a four year college degree.

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[29]The U. S. Bureau of Census reports levels of educational achievement for individuals 25 years of age or older. To permit a comparison between active skiers and the general population, educational levels of skiers in this age group were reported.

[30]This is based on 1970 census data. Educational levels attained by members of the general population may have been higher at this particular time.

Table 3.--Highest Level of Education Achieved by Active Skier Respondents

Highest Level of Education Attained	Percent of All Active Skiers	Percent of Active Skiers 25 Years of Age or Older	Percent of Michigans General Population 25 Years of Age or Older[a]
Less than high school	0	0	25
Some high school	6	0	22
High school degree	26	15	34
Some college (1-3 years)	31	21	10
College degree (4 years)	24	29	5
Five or more years of college	13	35	4

[a]Bureau of the Census, 1970 Census, Michigan, Table 120. Educational and Family Characteristics for Counties: 1970.

Income

Figure 4 graphically displays the distribution of gross family incomes reported by "employed" active skiers. The findings reveal that skiers are in a relatively high income bracket. One half of the active skier respondents reported incomes of $20,000 or more with 38 percent having incomes of $25,000 or more. In contrast, only 19 percent of those interviewed had gross incomes of less than $10,000.

Occupational Characteristics

The occupational characteristics of the active skier respondents are displayed in Table 4. Categories derived from the U.S. Census Bureau were aggregated into blue and white collar occupational groupings.

The greatest percent (34.5%) of the respondents were students. This was not unexpected given the disproportionate representation of school aged individuals among active skiers (see Figure 3).

Three quarters (75.6 percent) of the wage earning active skier respondents were employed in a variety of white collar positions. Only 24.4 percent were employed in blue collar jobs. The greatest number of respondents, 36.2 percent, work within the professional or technical fields.

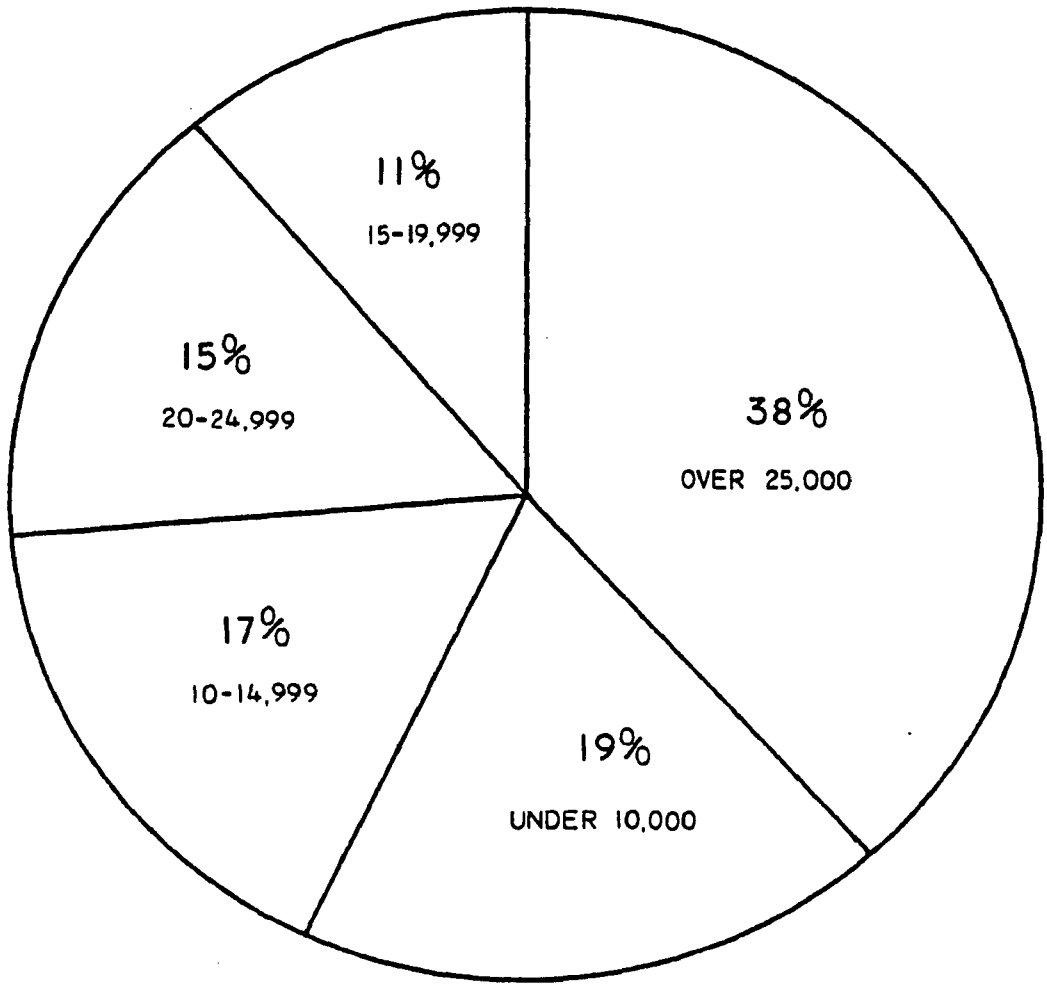

FIGURE 4.

GROSS FAMILY INCOME REPORTED BY ACTIVE SKIER RESPONDENTS

SECTOR SIZE REPRESENTS PROPORTION OF WAGE-EARNING SKIERS SAMPLED INCLUDED IN DESIGNATED GROSS FAMILY INCOME LEVELS. (IN DOLLARS)

Table 4.--Occupational Characteristics of Active Skier Respondents

Occupation	Frequency	Percent	Percent of Wage Earners
White Collar			75.6
Professional/Technical	46	20.1	36.2
Managers/Administrators	19	8.3	15.0
Sales	14	6.1	11.0
Clerical	17	7.4	13.4
Blue Collar			24.4
Craftsman	11	4.8	8.7
Operatives	2	.9	1.6
Laborers (including Farm laborers)	18	7.9	14.1
Homemakers	15	6.6	----
Students	79	34.5	----
Unemployed	8	3.5	----
Total	229	100.0	100.0

Marital Status and Profile of Family Skiers

Among those interviewed, 58 percent were single, 37 percent were married, and the remaining five percent were either divorced or widowed. Among those respondents who were married, 55 percent had spouses who also participated in downhill skiing (Table 5). Approximately the same percentage or 45 percent were married to spouses who were not downhill skiers. Findings also disclosed that 81 percent of the married respondents were parents, and that an average 1.9 children resided in households where at least one parent was an active skier. Sixty-three percent of these children also participated in downhill skiing.

To summarize, the findings presented in this section show that a majority of the active skiers surveyed are young, a mean age of 27.6; male, 61 percent; and single, 58 percent. Thirty-five percent are students and 45 percent are employed in white collar positions. Active skiers are relatively wealthy. One half of the employed skiers reported gross family incomes of $20,000 or more. Participation characteristics of active skiers will be examined in the next section.

Table 5.--Marital Status of Active Skier Respondents

Status	Frequency	Percent
Single	132	58.0
Married	85	37.0
Spouse is also an active skier	(47)	(55.0)[a]
Spouse is not an active skier	(38)	(45.0)
Divorced or widowed	12	5.0
Total	229	100.0

[a]Percent of married skiers

PARTICIPATION CHARACTERISTICS OF ACTIVE SKIERS

This section will present information regarding the participation characteristics and habits of active skiers. The information is presented in twelve parts, each dealing with different participation characteristics.

Extent of Participation

Active skier respondents averaged 11.9 days of participation during the 1976-1977 ski season (Table 6).[31] Nearly a quarter, 23 percent of the active skiers engaged in one or two days of skiing during the course of the season, while another 23 percent reported 20 or more days of participation. Fifty percent of the respondents skied seven or fewer days, and those who skied eight or more days embody the remaining 50 percent.

Trends in Participation

Active skiers, whether their participation in downhill skiing had increased, decreased, or remained constant over the previous two seasons (1975-1976 and

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[31] Respondents were instructed to consider any part of a day spent skiing as one "ski day."

Table 6.--Number of Days Skied During the 1976-1977 Ski Season by Active Skier Respondents

# of Days	Frequency	Percent	Cumulative Percent	# of Days	Frequency	Percent	Cumulative Percent
1	18	8	8	14	8	3	69
2	16	7	15	15	13	6	75
3	18	8	23	16	1	0	75
4	16	7	30	17	2	1	76
5	17	7	37	18	3	1	77
6	19	8	45	19	1	0	77
7	12	5	50	20	21	9	86
8	6	3	53	24	2	1	87
9	3	1	54	25	5	2	89
10	17	7	61	27	1	0	89
11	1	0	61	30	8	3	92
12	11	5	66	40 or more	9	8	100
13	1	1	66	Total	229	100.0	

Mean = 11.9 Median = 7.375 Standard Deviation = 13.86

1976-1977), are displayed in Table 7. The findings reveal that 37 percent of the respondents had curtailed their downhill skiing during the previous two seasons. Reasons most often specified for decreased participation (Table 8) included less free time, 49 percent; less money or reduced income, 17 percent; and poor health or injuries accounted for 9 percent. Conversely, 25 percent of the active skier respondents indicated that they had increased their participation in Alpine skiing. The three most frequently cited reasons for this increased involvement were more free time, 26 percent; additional money income, 24 percent; and a heightened interest, 20 percent (Table 9).

Participation Patterns

Respondents were asked a series of questions in order to determine:

1. the number of active skiers who undertake the majority of their skiing trips on weekends as opposed to weekdays
2. the number of skiers who accomplish the greatest part of their skiing while on day-long versus overnight trips
3. the number of skiers who ski primarily while on "day trips" of no less than five hours, which includes both travel and ski time.

Table 7.--Participation Trends of Active Skier Respondents Over the Past Two Seasons (1975-1976, 1976-1977).

Trend	Frequency	Percent
Constant	81	38
Decreased	77	37
Increased	53	25
Missing	19	missing
Total	229[a]	100.0

[a]The 18 missing respondents had not participated in two complete seasons of skiing.

Table 8.--Reasons Cited by Active Skier Respondents for Decreased Participation in Downhill Skiing.

Reason	Frequency	Percent
Less free time	37	49
Less money/income	13	17
Poor health/injury	7	9
Losing interest	6	8
Young children to care for	4	5
Moved/ski areas less accessible	3	4
Involvement in cross country skiing	3	4
Age/too old	1	2
Skiing is too expensive	1	2
Missing	2	missing
Total	77	100

Table 9.--Reasons Cited by Active Skier Respondents for Increased Participation in Downhill Skiing.

Reason	Frequency	Percent
More free time	13	26
More money/increased income	12	24
Heightened interest	10	20
Children older/left home	3	6
Moved/ski areas more accessible	3	6
Purchased new equipment	3	6
Met friends that skied	3	6
Joined a ski club	2	4
Better health/no injuries	1	2
Missing	3	missing
Total	53	100

Compilation of findings to these three questions is displayed in Table 10. The "majority of participation" patterns are presented in the different cells. Sixty-four percent of the respondents spent the greatest percentage of their skiing time during weekends in contrast to 36 percent who participated more on weekdays. Almost half, 47 percent, of the active skiers reported that the majority of their skiing occurred while on "day trips" lasting more than five hours. Twenty-three percent of the respondents reported that a major portion of their skiing took place on sojourns of less than five hours. A total of 33 percent of the active skiers indicated that a majority of their skiing involved overnight trips.

Overnight Ski Trips

Respondents, who indicated that a majority of their skiing excursions involved overnight trips, were questioned to determine the average length of the overnight trips and the type of lodging facilities they secured. The average overnight trip lasted 2.7 nights. More than half, 59 percent, of all overnight excursions involved either one or two nights (Table 11). Forty percent of the "overnight skiers" reserved lodging facilities at downhill areas while 27 percent stayed in hotels or motels located in close proximity to downhill ski

Table 10.--"Majority of Participation" Patterns of Active Skier Respondents

Length of Trips	Weekdays	Weekend Days	Totals
Day trips lasting less than 5 hours	11% (25)	12% (26)	23% (51)
Day trips lasting more than 5 hours	18% (41)	28% (64)	47% (105)
Overnight trips	7% (16)	24% (54)	30% (70)
Totals	36% (82)	64% (144)	100% (226)

Table 11.--The Number of Nights Overnight Ski Trips Taken by Active Skier Respondents Usually Lasted.

Number of Nights	Frequency	Percent	Cumulative Percent
1	9	12.7	12.7
2	32	46.5	59.2
3	17	23.9	83.1
4	2	2.8	85.9
5	4	5.6	91.5
6	1	1.4	92.9
7	4	5.6	98.5
or more	1	1.4	100.0
Total	70	100.0	

Mean = 2.70 Median = 2.30 Standard Deviation = 1.61

operations (Table 12), Another 26 percent of the respondents who undertook the majority of their skiing excursions while on overnight trips stayed in second homes which they or other family members owned.

Ski Vacations

Data regarding the number, length and destinations of ski vacations taken during the 1976-1977 season by the active skier disclosed that 31 percent of the active skier respondents managed to take one or more ski vacations during the 1976-1977 season (Table 13).[32] The average length of a ski vacation was 6.3 days (Table 14). Thirty-one percent of the respondents limited themselves to mini-vacations of either two or three days. Seventy-seven percent of all ski vacations lasted seven days or less. Vacations lasting eight or more days were undertaken by 20 percent of the active skier respondents. It is noteworthy that 73 percent of the respondents confined their vacations to destinations within Michigan, while 69 percent limited their skiing vacations entirely to locations in the lower peninsula (Table 15). Ten percent of the active skiers who managed

[32]A ski vacation was defined as any vacation in which downhill skiing was the primary activity.

Table 12.--The Type of Lodging Usually Used by Active Skier Respondents While on Overnight Ski Trips.

Type	Frequency	Percent
Lodging facilities at the ski area	28	39.4
Motel or hotel located near the ski area	19	26.8
Second home	18	25.4
Friends or family	5	8.4
Total	70	100.0

Table 13.--The Number of Ski Vacations Taken by Active Skier Respondents During 1976-1977 Ski Season.

Number	Frequency	Percent
0	158	69
1	54	24
2	10	4
3 or more	7	3
Total	229	100

Table 14.--The Duration of Ski Vacations Taken by Active Skier Respondents During the 1976-1977 Ski Season.

Number of Days	Frequency	Percent	Cumulative Percent	Number of Days	Frequency	Percent	Cumulative Percent
2	7	10	10	8	4	6	83
3	15	21	31	9	1	1	84
4	8	11	42	10	2	3	87
5	4	6	48	12	2	3	90
6	6	9	57	14	5	7	97
7	14	20	77	15 or more	2	3	100
				Total	70		

Mean = 6.3 Median = 5.7 Standard Deviation = 4.08

Table 15.--The Destination of Ski Vacations Taken by Active Skier Respondents During the 1976-1977 Ski Season.

Location	Frequency	Percent
Lower peninsula	48	69
Upper peninsula	3	4
East (e.g. New England)	7	10
West (e.g. Rockies)	10	14
Outside of the U.S.	2	3
Missing	1	missing
Total	71	100

to arrange a ski vacation traveled east (e.g., New England), while 14 percent journeyed to western states to ski. Three percent of the respondents skied while vacationing outside the United States.

Brand (area) Loyalty

Data were collected on two frequently used measures of brand (area) loyalty:[33] (1) The number of ski areas visited during the course of a season,[34] and (2) the percent of skiing accomplished at the area visited most frequently during the 1976-1977 season.[35] Findings disclosed that, by and large, active skiers exhibited a high degree of loyalty to one or a relatively small number of downhill ski areas.[36] Forty percent of the

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[33]Different measures of brand loyalty are often employed as indicators of the quality of potential target markets (see Chapter III).

[34]Farley (1964) used the number of brands bought by a family during a specified period of time as a measure of "brand loyalty."

[35]Brown (1952) and Cunningham (1953) measured "brand loyalty" in terms of the extent to which customers concentrated their purchases on one or relatively few brands.

[36]Brown (1952) and Cunningham (1956) conceived the possibility of loyalty to more than one brand.

active skier respondents restricted the sum total of their skiing during a season to one area, with 74 percent patronizing no more than three areas during the 1976-1977 season (Figure 5). On the average, active skiers expended 78 percent of their skiing time at only one ski area, while 94 percent of the active skier respondents concentrated a minimum of 50 percent of their participation time at the area they frequented most often (Figure 6). These findings indicate that active skiers engage in a modicum of "brand switching." Building "brand loyalty," based on the findings of this study, does not appear to be a major marketing problem confronting managers of downhill ski operations in Michigan.

Lift Ticket Prices

Price is a critical element in the marketing mix of downhill ski areas. Deciding on a lift ticket that will not deter target market customers, yet will permit the ski area to realize a profit, is difficult, but nonetheless an essential task for management. In an effort to assist area managers in their pricing decision, information was collected relating to the prices respondents currently pay for a daily lift ticket while on an overnight ski trip, and the maximum amount that active skiers would be willing to spend.

FIGURE 5.

NUMBER OF SKI AREAS VISITED BY ACTIVE SKIER RESPONDENTS DURING 1976-77 SEASON

SECTOR SIZE REPRESENTS THE PROPORTION OF SAMPLE DIVIDING SKIING DAYS AMONG DESIGNATED NUMBER OF SKI AREAS.

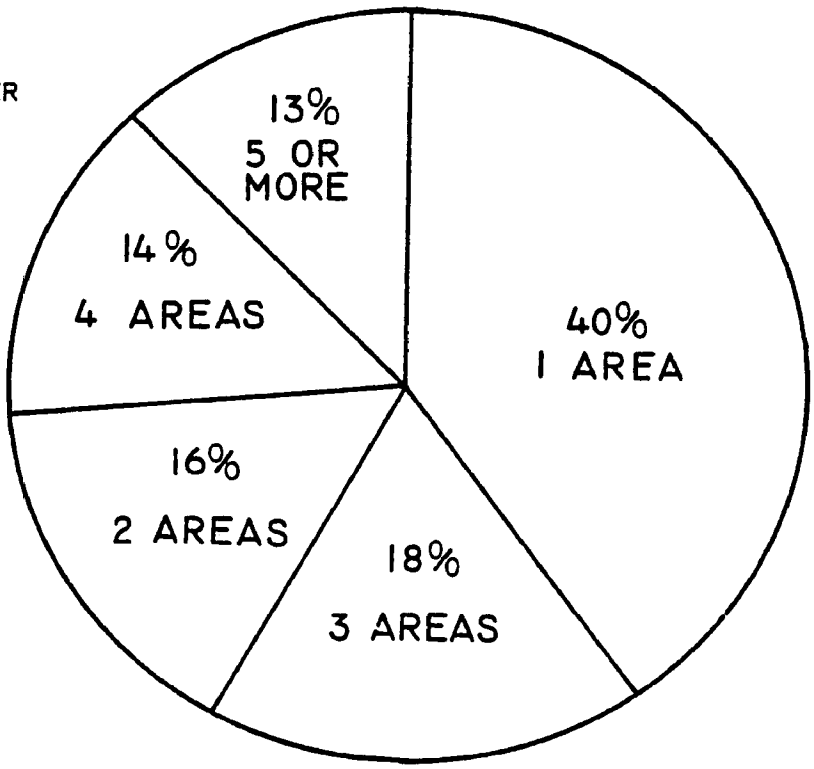
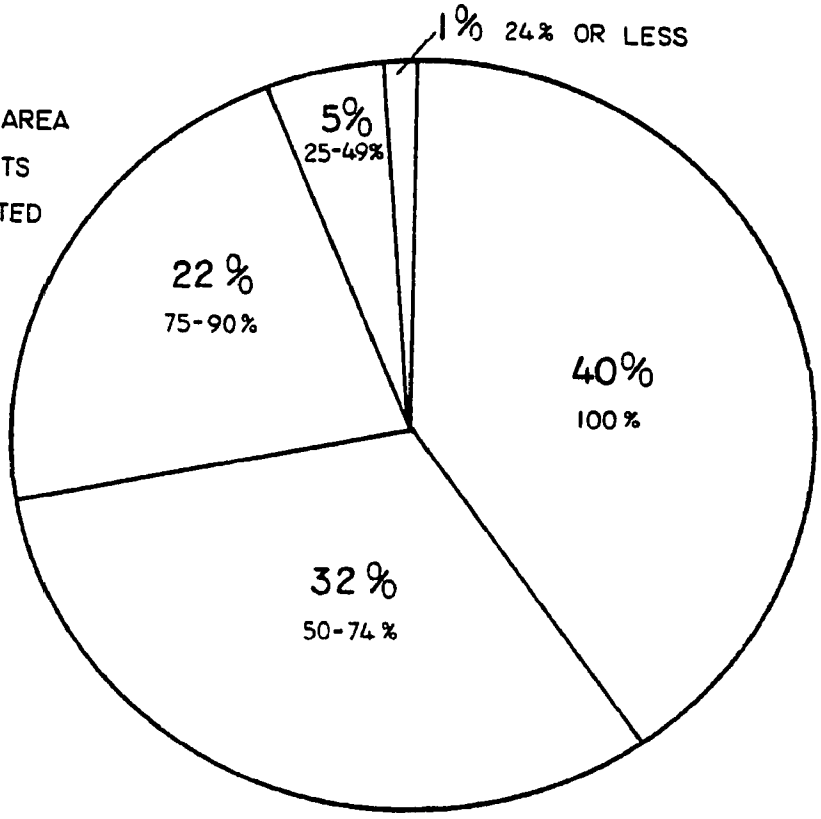


FIGURE 6.

PERCENT OF SKIING ACCOMPLISHED BY RESPONDENTS AT THEIR MOST FREQUENTED SKI AREA

SECTOR SIZE REPRESENTS PROPORTION OF SAMPLE ACCOMPLISHING DESIGNATED PERCENTAGE OF SKIING AT A SINGLE FAVORED SKI AREA.



Active skier respondents currently pay an average of $9.70 for a daily lift ticket with more than half, 56.5 percent, indicating that fees start at $10.00 (Figure 7). The findings disclose that respondents would agree to spend significantly more for a lift ticket than what they currently pay, although not necessarily for the same areas. On the average, active skiers are inclined to spend a maximum of $12.15 for a daily lift ticket (Figure 8). Eighty-eight percent of the respondents expressed a willingness to spend $10.00 or more for a day-long lift pass, while 29 percent were willing to spend in excess of $13.00.

Travel Time

The distance over which skiers are willing to travel limits the market area from which different ski areas can expect to draw its customers. Respondents were queried about the distance they usually drive one way to reach a ski area for an overnight skiing trip and the maximum time which they would be willing to drive. Active skier respondents currently travel an average of 3.7 hours to arrive at a ski area for an overnight ski outing and sixty-two percent drive four or more hours (Table 16).

FIGURE 7.

USUAL DAILY LIFT TICKET PRICE PAID BY RESPONDENTS WHILE ON A WEEKEND OR OVERNIGHT SKI TRIP

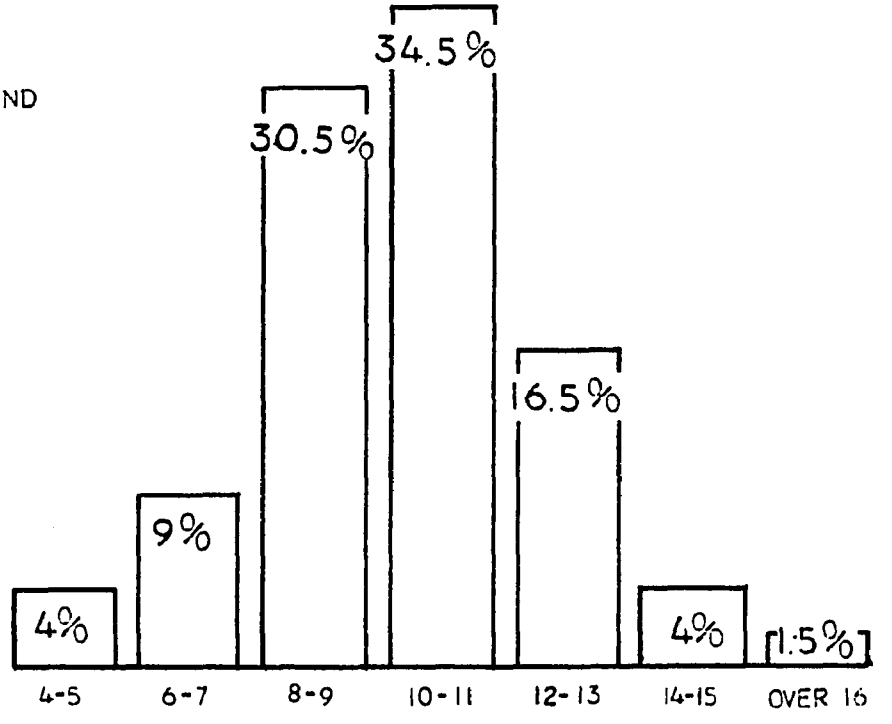


FIGURE 8.

MAXIMUM PRICE RESPONDENTS WOULD WILLINGLY PAY FOR A DAILY LIFT TICKET WHILE ON A WEEKEND OR OVERNIGHT SKI TRIP

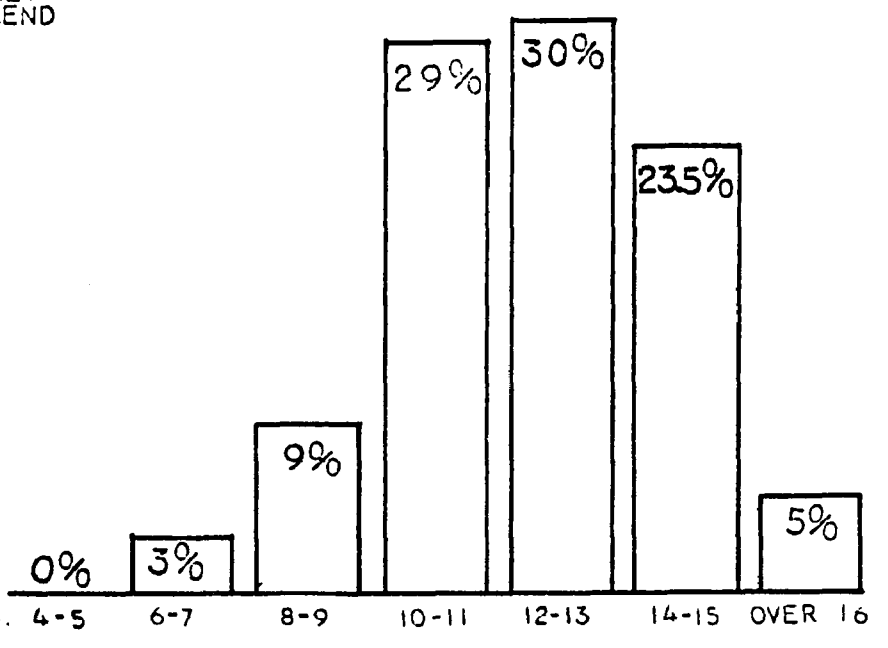


Table 16.--The Number of Hours Active Skier Respondents Usually Drive (One Way) to Reach a Ski Area for an Overnight Trip.

Number of Hours	Frequency	Percent	Cumulative Percent
Less than 1 hour	3	2	2
1 - 1.5	15	8	10
2 - 2.5	15	8	18
3 - 3.5	39	20	38
4 - 4.5	62	32	70
5 - 5.5	43	22	92
6 - 6.5	12	6	98
7 or more hours	4	2	100
Total	193	100	

Mean = 3.7 Median = 4.0 Standard Deviation = 1.50

Table 17.--The Maximum Number of Hours Active Skier Respondents Are Willing to Drive (One Way) to Reach a Ski Area for an Overnight Ski Trip.

Number of Hours	Frequency	Percent	Cumulative Percent
1 - 1.5	1	1.0	1.0
2 - 2.5	4	2.0	3.0
3 - 3.5	12	6.0	9.0
4 - 4.5	50	26.0	35.0
5 - 5.5	53	28.0	63.0
6 - 6.5	44	23.0	86.0
7 - 7.5	9	4.0	90.0
8 - 8.5	9	4.0	94.0
9 - 9.5	2	1.0	95.0
10 or more	9	5.0	100.0
Total	193	100.0	

Mean = 5.2 Median = 5.0 Standard Deviation = 1.69

Respondents would be willing to travel, on the average, a maximum of 5.2 hours to reach a ski area for an overnight trip. Ninety-two percent of the active skiers expressed a willingness to travel four or more hours, while 37 percent are willing to travel six or more hours (Table 17).

When Respondents Took Up Skiing

Active skier respondents were asked to report the age when they first attempted downhill skiing. The findings are included in Figure 9. Eighteen was the mean age at which respondents first took up skiing. Sixty-seven percent skied before age 20 and 85 percent before age 25. One third of the active skier respondents attempted downhill skiing for the first time between the ages of four and fourteen. It was also interesting to find that only 15 percent of the active skiers adopted the activity after 24; nine percent after 29; and only four percent after age 39. These findings are particularly significant in light of forecasts regarding the changing age structure of the population (Table 18). The apparent trend toward an older population could possibly have a major impact on the number of downhill skiers in the future.

The survey also uncovered information worthy of mention regarding those individuals who have become

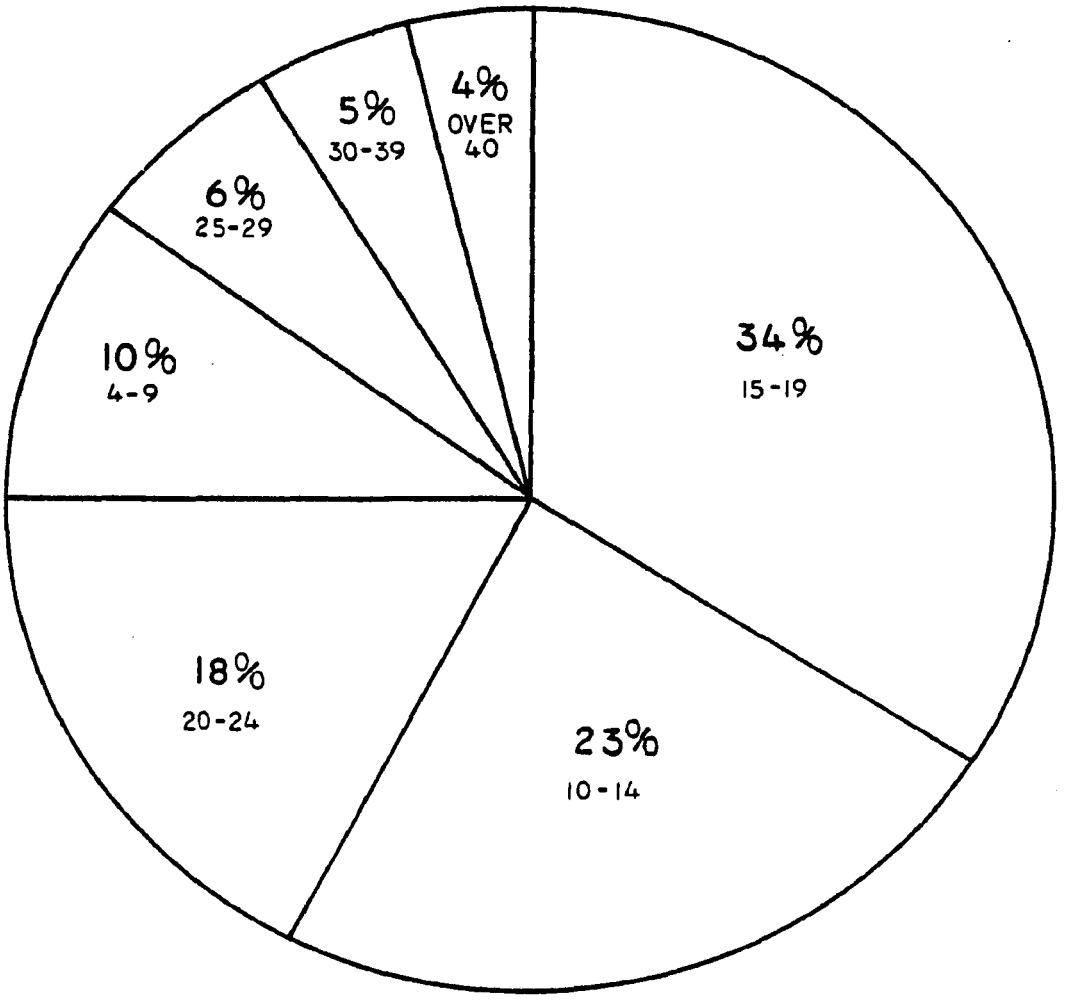


FIGURE 9.

AGE AT WHICH RESPONDENTS ADOPTED DOWNHILL SKIING

SECTOR SIZE REPRESENTS PROPORTION OF SAMPLE HAVING ADOPTED DOWNHILL SKIING DURING DESIGNATED AGE PERIOD (IN YEARS).

Table 18.--Population Shifts in the United States, 1960-2000.[a]

Age	Population in Millions					Percentage Change			
	1960	1970	1980	1990	2000	1960-1970	1970-1980	1980-1990	1990-2000
Under 20	69	77	93	77	81	-11.1%	-5.2%	+5.7%	+ 4.3%
20-24	11	17	21	18	19	+54.3	+22.6	-15.4	+ 7.8
25-34	23	26	37	42	36	+10.4	+10.4	+46.1	-14.6
35-44	24	23	26	37	41	- 4.5	+ 9.6	+45.5	+13.0
45-54	21	23	22	25	36	+13.3	- 3.9	+ 9.9	+45.1
55-64	16	19	21	20	22	+19.4	+13.0	- 3.4	+10.6
65 and over	17	20	24	28	29	-20.4	+19.8	+15.4	+ 3.9
	181	205	224	247	264	+13.4%	+ 9.4%	+10.0%	+ 7.2%

[a]Source: Lazer et. al., 1973, p. 54.

involved with the activity for the first time--"new adopters." Only 17 percent of the currently active skiers reported having one or more parents who also downhill skied (Table 19). This is very noteworthy given the fact that a plurality of skiers indicated "first time" participation at a relatively young age. This information indicates generally that young people have ample opportunity to engage in downhill skiing, regardless of whether or not their parents ski.

Since a majority of the respondents began skiing prior to "adulthood," it was not surprising that 83 percent of new adopters are single (Table 20). Of the 17 percent of the respondents who adopted skiing after marriage, only eight percent are married to partners who skied prior to their marriage. Forty-six percent of the married "new adopters" took up downhill skiing along with their husbands or wives. The marriage partners of the remaining 46 percent of "married new adopters" remained non-skiers.

Length of Involvement

The year in which respondents first engaged in skiing and the corresponding number of years of participation are presented in Figure 10. By referring to the graph, the reader can select any year between 1938

Table 19.--Skiing Status of the Parents of Active Skier Respondents.

Status	Frequency	Percent
At least one parent downhill skied	34	17.0
Neither parent downhill skied	188	83.0
Missing	2	missing
Total	229	100.0

Table 20.--Marital Status of Active Skier Respondents When They First Picked-Up Downhill Skiing.

Status	Frequency	Percent
Single	190	83.0
Married: Spouse was already an active skier	3	1.0 (8.0)[a]
Married: Spouse took up skiing at the same time	18	8.0 (46)
Married: Spouse remained a non-skier	18	8.0 (46)
Total	229	100.0

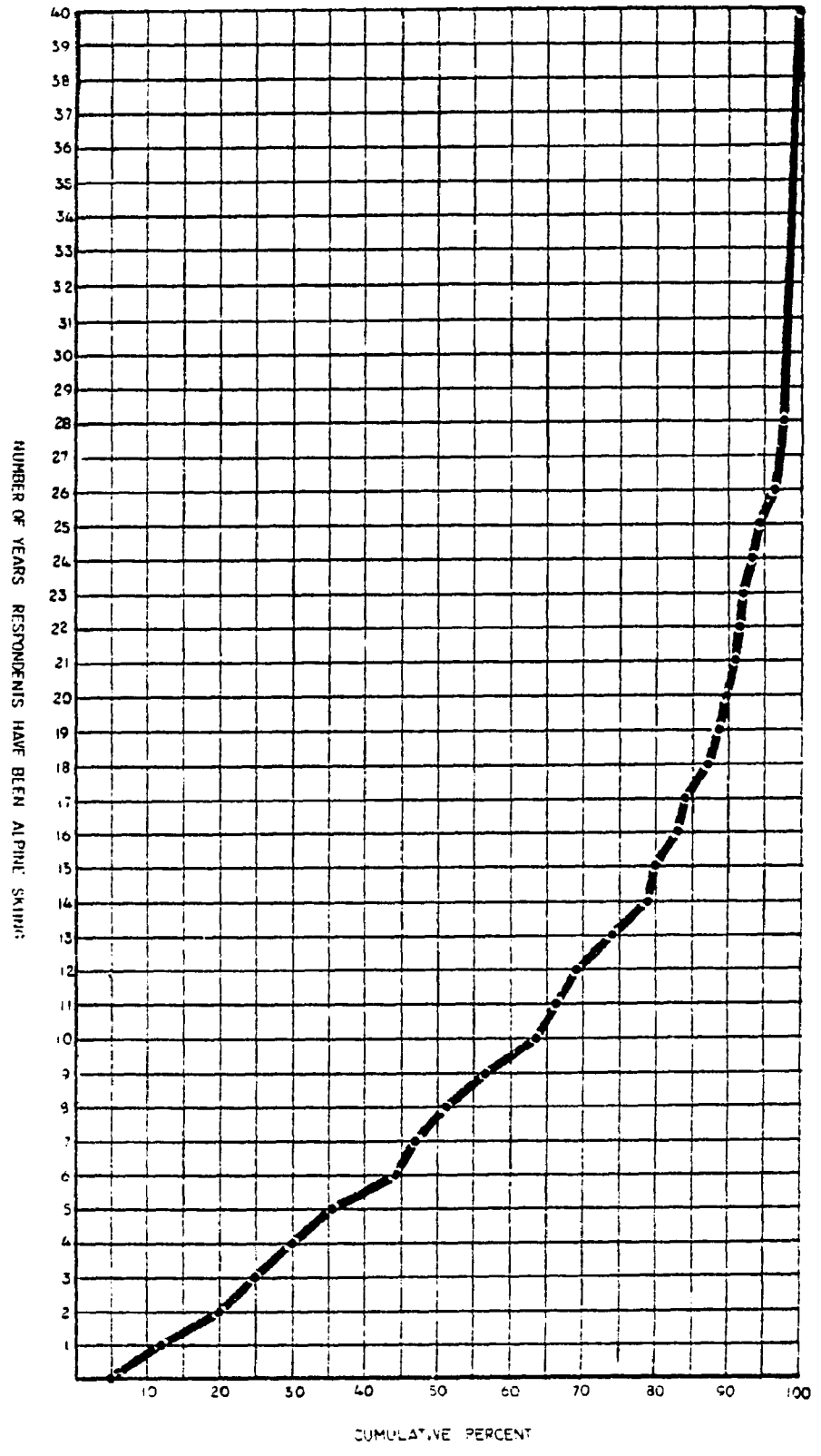


FIGURE 10. PERCENTAGE OF SKIERS WITH A GIVEN NUMBER OF YEARS OF ALPINE SKIING EXPERIENCE

and 1978 to determine what percent of the active skier respondents adopted prior to or after any given year. For example, the graph shows that 65 percent (100-35) of the respondents have been participants for five or more years. Twenty-five percent of the active skiers interviewed had skied three or fewer seasons and five percent reported they downhill skied for the first time in 1978. It is significant that 37 percent (100-63) of the active skier respondents have been skiing at least 10 years and that 21 percent have skied for 15 or more years, while 11 percent have been active in the sport for 20 or more years.

Skill Level

Access to information regarding the skill level of skiers who make up the market and its segments is important for arriving at decisions with respect to slope design--degree of difficulty-- and program offerings such as instruction. Skill levels of active skier respondents are presented in Table 21. The largest percent, 46.5 percent, of the respondents regarded their skiing skills to be at an intermediate level. There were twice as many advanced skiers, 32.5 percent, as compared to beginners. Only five percent of the respondents classified themselves to be expert skiers.

Table 21.--Skill Levels of Active Skier Respondents.

Skill Level	Frequency	Percent
Beginner	37	16.0
Intermediate	106	46.5
Advanced	74	32.5
Expert	12	5.0
Total	229	100.0

Equipment Rental/Ownership and Ski Club Membership

Ski equipment rentals represent a significant source of revenues for downhill ski operations. Information on the number of active skiers who rent, rather than own their equipment, was gathered to provide area managers with an estimate of the size of the rental market. Findings disclose that 25 percent of the active skier respondents rent all or a portion of their equipment (Table 22). Seventy-five percent reported that they possess all the necessary skiing equipment to engage in the sport. Finally, the findings show that approximately one sixth of active skiers hold membership in an organized ski club (Table 23) whereas 83 percent have no current affiliation with a skiing organization.

In summary, the findings presented in this section reveal that active skiers participated on the average of 11.9 days during the 1976-1977 season; a majority of these skiing outings taking place on day trips during weekends. Thirty-one percent of the skiers managed to take a ski vacation which lasted on an average of 6.3 days. Finally, it was discovered that skiers exhibit a high degree of loyalty to one or a few ski areas. Forty percent of the skiers surveyed restricted the entirety of their 1976-1977 skiing to one area. The next section will present information regarding

Table 22.--Percent of Active Skier Respondents Who Rent or Own Their Downhill Ski Equipment.

Type	Frequency	Percent
Rent all or part of their equipment	56	24.5
Own all their equipment	173	75.5
Total	229	100.0

Table 23.--Percent of Active Skier Respondents Who Belong to a Ski Club.

Type	Frequency	Percent
Belong	37	17.0
Do not belong	192	83.0
Total	229	100.0

skier preferences for different ski area attributes.

ATTRIBUTE PREFERENCE FINDINGS

Ski Area Attributes

A major objective of this study is to apply and evaluate attributes sought segmentation as a means of segmenting Michigan's downhill ski market. To accomplish this required that information be collected on skiers' preferences for different ski area attributes. They included:

1. after ski entertainment (bars, discotheques, pools, etc.)
2. lodging facilities at the ski area
3. restaurant facilities at the ski area
4. amount of crowding at lift lines
5. slope quality (degree of vertical drop, length of slope, number and difficulty of slopes, etc.)
6. price of lift tickets, and
7. driving distance from home to the area.

Respondents were confronted with a series of 21 paired attribute comparisons and asked to indicate which of the two attributes in each pair they considered more important when selecting a downhill area to visit on an overnight or weekend ski trip (see Mail Questionnaire,

Appendix E).[37] Scores for each attribute were then assigned based on the number of times each attribute was favored. If an attribute was preferred above all others, it received a rank of six, and if it was never preferred, a rank of zero. The aggregate findings are shown in Table 24.

One half, 49.7 percent, of the respondents regarded slope quality as the single most important criteria on which to base their choice of ski areas. The criteria which most influenced ski area selection for 24.7 percent of the active skiers was the degree of crowding at lift lines. Driving distance from home and the price charged for a daily lift ticket were ranked third and fourth respectively, in order of their importance. Amenities including restaurants, lodging facilities, and after ski entertainment received considerably less weight by the respondents.

Slope Attributes

As stated, slope quality was listed as the most important selection criteria employed by active skier

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[37] to effect a rank ordering of seven attributes required $\binom{7}{2}=\frac{7 \cdot 6}{2}$ = 21 choices. For more information on paired comparisons see: Kernan (1967, pp. 67-72); Cohen (1967, pp. 67-72), Green and Tull (1975, pp. 176-178).

Table 24.--Importance Rankings Assigned Seven Ski Area Attributes by Active Skier Respondents

Ski Area Attributes	Rankings (Six Being the Most Important)														Mean Ranking	Median
	6		5		4		3		2		1		0			
Slope quality	49.7	(96)	25.4	(49)	17.1	(33)	6.7	(13)	0.0	(0)	.5	(1)	.5	(1)	5.15	5.49
Amount of crowding at lift lines	24.7	(48)	37.1	(72)	18.0	(35)	9.3	(18)	7.2	(14)	2.6	(5)	.5	(1)	4.53	4.83
Driving distance from home	8.8	(17)	18.6	(36)	24.2	(47)	18.0	(35)	13.4	(26)	8.8	(17)	7.7	(15)	3.34	3.57
Price of lift tickets	2.1	(4)	11.3	(22)	20.1	(39)	30.9	(60)	10.8	(21)	13.4	(26)	10.8	(21)	2.79	2.98
Lodging facilities	1.0	(2)	7.2	(14)	10.8	(21)	13.4	(26)	24.2	(47)	18.6	(36)	24.2	(47)	1.94	1.94
Restaurant facilities	0.0	(0)	1.0	(2)	8.2	(16)	13.9	(27)	31.4	(61)	29.4	(57)	15.5	(30)	1.73	1.66
After ski entertainment	1.5	(3)	3.6	(7)	7.2	(14)	11.9	(23)	16.5	(32)	27.3	(53)	31.4	(61)	1.53	1.17

respondents when choosing a ski area for an overnight or weekend ski trip. Although identification of this fact is significant, the finding provides little in the way of information on which to base either slope design or management decisions. In an attempt to gain greater insight as to what skiers desire in the way of ski slopes, respondents were asked to rank in order of their importance, as selection criteria, seven different slope characteristics. Respondents considered the extent of slope crowding and the length of ski runs to be the most significant slope characteristic (Table 25). Steep runs, lighted slopes to permit night skiing, and moguled runs were of lesser importance to a majority of the active skier respondents. When interpreting the table, the reader is cautioned against assigning an excessive amount of significance to the mean rankings caluclated for each slope attribute. The mean rankings can be misleading. For example, well groomed slopes received an average ranking of 3.05, making it third in order of importance. However, 20.2 percent of the respondents regard grooming to be the most important slope factor to consider when deciding on which ski area(s) to patronize. Thus, a response to only the top two

Table 25.--Importance Rankings Assigned Seven Slope Attributes by Active Skier Respondents

Slope Attributes	Rankings (One Being the Most Important)														Mean Ranking	Mode	Median
	1		2		3		4		5		6		7				
Uncrowded slopes	19.7	(38)	22.8	(44)	23.8	(46)	18.7	(36)	7.3	(14)	5.2	(10)	2.6	(5)	2.97	3.0	2.82
Slopes with long runs	23.3	(45)	20.2	(39)	19.7	(38)	71.1	(33)	15.0	(29)	3.6	(7)	1.0	(2)	2.96	1.0	2.83
Well groomed slopes	20.2	(39)	19.7	(38)	18.1	(35)	25.4	(49)	10.4	(20)	5.2	(10)	1.0	(2)	3.051	3.0	2.82
Slopes with varying degrees of difficulty	28.5	(55)	22.8	(44)	14.0	(27)	19.3	(18)	6.7	(13)	12.4	(24)	6.2	(12)	3.052	1.0	2.43
Slopes with steep runs	3.6	(7)	7.3	(14)	10.4	(20)	7.3	(14)	16.6	(32)	33.2	(64)	21.8	(42)	5.12	6.0	5.65
Lighted slopes for night skiing	2.6	(5)	4.1	(8)	8.3	(16)	14.0	(27)	20.7	(40)	9.3	(18)	40.9	(79)	5.38	7.0	5.53
Moguled slopes	2.6	(5)	4.1	(8)	5.7	(11)	7.8	(15)	23.3	(45)	31.1	(60)	25.4	(49)	5.39	6.0	5.71

attributes could be costly if the result displeases 20.2 percent of the market. Also, it is a package of these that skiers consider and not simply one or two individual attributes.

Entertainment Options

Ski entertainment is becoming increasingly important as a component in the overall product mix offered by downhill ski resorts. In an effort to assist area managers in decisions regarding what entertainment options to provide, information reflecting skier attitudes about a variety of entertainment alternatives was gathered. Respondents were asked to rank in order of preference, one being the most desirable, from the following six options: heated pools, discotheques, quiet bar/lounge with fireplace, saunas, game rooms, and indoor tennis facilities. The results presented in Table 26 show that 51 percent of the respondents listed quiet bars as their most preferred form of entertainment. Heated pools and saunas were ranked second and third respectively.

The reader is again cautioned not to rely entirely on the mean rankings as indicators of the overall attractiveness of the different entertainment options. There appears to be different "entertainment sought" segments.

Table 26.--Preference Rankings Assigned Six Entertainment Options by Active Skier Respondents.

Entertainment Options	Rankings (One Being the Most Desirable)						Mean Ranking	Mode	Median
	1	2	3	4	5	6			
Quiet bars with fireplace	51.3 (99)	21.2 (41)	12.4 (24)	7.8 (15)	3.1 (6)	4.1 (8)	2.02	1.0	1.48
Heated pool	18.7 (36)	22.8 (44)	25.4 (49)	19.7 (38)	7.8 (15)	5.7 (11)	2.92	3.0	2.84
Saunas	10.9 (21)	19.7 (38)	23.8 (46)	23.3 (45)	16.1 (31)	6.2 (12)	3.32	3.0	3.32
Discotheques/ Dance bars	13.5 (26)	21.8 (42)	13.5 (26)	17.1 (33)	14.0 (27)	20.2 (39)	3.57	2.0	3.58
Game rooms	1.0 (2)	9.3 (18)	11.4 (22)	19.2 (37)	33.2 (64)	25.9 (50)	4.52	5.0	4.77
Indoor tennis	4.7 (9)	5.2 (10)	14.0 (27)	13.0 (25)	25.4 (49)	37.8 (73)	4.63	6.0	4.02

For example, discotheques received a mean ranking of 3.5. However, 13.5 percent of the respondents considered this to be the most preferable form of after ski entertainment.

Dining Styles

Skiers were also requested to rank their preferences deciding from three individual types of dining styles commonly found at ski areas. The findings reveal that more than half, 58.5 percent, of the active skier respondents considered the "sit down/you are served" style dining to be preferable to either cafeteria or fast food eating options. However, a sizable segment of the market, 23.7 percent, claimed partiality to cafeteria style arrangements (Table 27). Fast food (e.g., snack bars) offerings were ranked least desirable by 63 percent of the respondents. In contrast, only seven percent of the active skiers regard the fast food alternative as having the most appeal.

To summarize, the findings presented in this section reveal that one half, 49.7 percent of the active skiers consider slope quality to be the most important factor to take into consideration when selecting which ski areas to visit. The extent of slope crowding and the length of ski runs are considered to be the most important

Table 27.--Importance Rankings Assigned Three Different Dining (eating) Styles by the Active Skier Respondents

Dining (Eating) Styles	Rankings (One Being Most Important)						Mean Ranking	Mode	Median
	1		2		3				
Sitdown/You are served style	58.5	(114)	23.3	(45	17.6	(34)	1.58	1.00	1.35
Cafeteria style	33.7	(65)	47.2	(91)	19.2	(37)	1.86	2.00	1.85
Fastfood/Snack-bar style	7.3	(14)	29.5	(57)	63.2	(122)	2.56	3.00	2.70

slope attributes. Over half, 58.5 percent, of the respondents prefer quiet bars to other forms of after ski entertainment. Finally, it was disclosed that the "sit down/you are served" style of dining is considered preferable to either cafeteria style or snack bars by 58.5 percent of the respondents. The next chapter will present the findings of both the heavy half and attributes sought segmentation analyses.

C H A P T E R V

THE SEGMENTATION ANALYSES

This chapter will present the results of the segmentation analyses which were performed on the sample of active skiers. The findings have been divided into two sections. Section one will report the results of the heavy half segmentation analysis. Section two will deal exclusively with the formation and analysis of the attributes sought segments.

THE HEAVY HALF SEGMENTATION ANALYSIS

Presentation of the heavy half segmentation analysis is divided into four parts: (1) the formation of the light and heavy half segments, (2) the socio-economic characteristics of heavy and light half skiers, (3) the importance heavy and light half skiers assign to different ski area attributes, and (4) the participation characteristics of heavy and light half skiers. The results of tests performed on hypotheses dealing with heavy half segmentation are also presented in this section.

Formation of the Heavy and Light Half Segments

For the purpose of this study, respondents were classified as either heavy or light skiers on the basis of the number of days they participated in downhill skiing during the 1976-1977 ski season. Respondents were first arranged in order of the number of days they skied and then bisected at the median, 7.4 days.[38] Respondents who skied seven or fewer days comprised the light half of the sample and those who skied eight or more days constituted the heavy half. The light half accounted for 17 percent of the total number of days skied by respondents; the heavy half, 83 percent or nearly five times as many days (see Figure 11).[39]

Socioeconomic Characteristics of Light and Heavy Half Skiers

The classification of respondents into heavy and light halves does not in itself provide a sufficient base of information on which to develop effective ski area marketing strategies (Scissors, 1966). The exploitability of the heavy half segment--that is, the ability of ski areas to effectively focus its marketing efforts on heavy volume skiers--depends to a large extent on

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[38] This method of splitting consumers into heavy and light halves was employed by LaPage (1968, p. 2) in a study of campers.

[39] Twedt (1967) reported that for many product markets, heavy half consumers accounted for seven to ten times as many purchases as light half members.

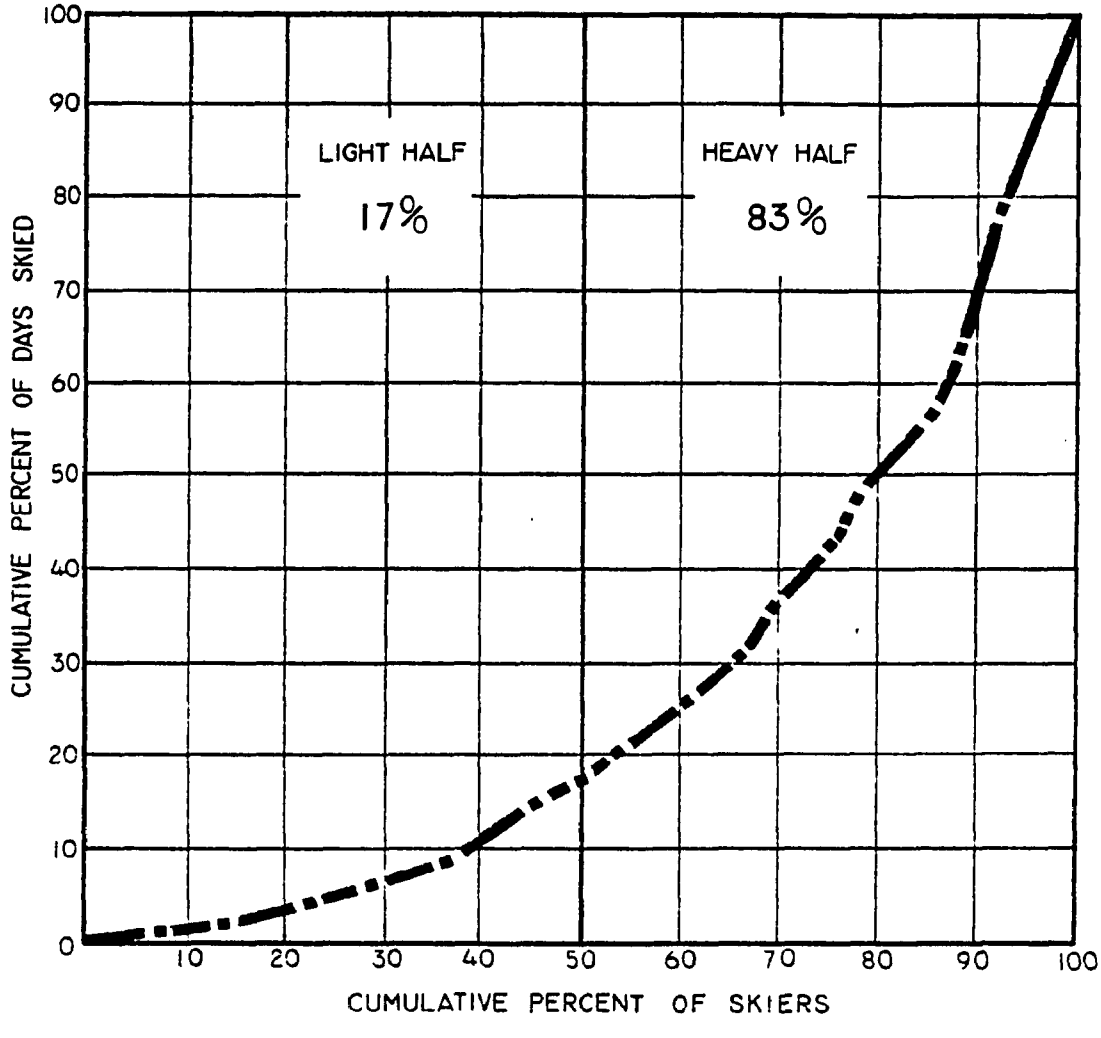

FIGURE 11. HEAVY AND LIGHT HALVES OF THE MARKET

whether or not they can be socioeconomically distinguished from light volume skiers. In this respect, heavy half findings have been discouraging. Research efforts aimed at developing differential socioeconomic profiles of heavy half consumers have been notably unsuccessful (Frank, 1972, p. 137). Consequently, many practitioners have questioned the effectiveness of usage/purchase rate as a basis for segmentation (Dhalla and Mahatoo, 1976). In an effort to determine whether heavy half members can be socioeconomically distinguished from respondents comprising the light half, the following hypothesis was formulated and tested:

> H_o: Skiers comprising the "heavy half segment" do not differ from light half skiers in terms of their socioeconomic characteristics.

To test the hypothesis, a separate Chi Square analysis was performed on six socioeconomic characteristics to determine which if any were statistically associated with volume of days skied. The characteristics included (1) sex, (2) marital status, (3) family status, (4) age, (5) occupation, and (6) income. For each test the null hypothesis is that the characteristic is independent of segment membership. Based on the results of the Chi Square tests (shown in Table 28) the null hypothesis could not be rejected--at the .05 significance level--for

Table 28.--Socioeconomic Characteristics of Heavy and Light Half Skiers.

Socioeconomic Characteristics	Percent: Light Half N=116	Percent: Heavy Half N=113	Chi Square Statistic	Significance Level
Sex			.000	.980
Male	60.3	61.1		
Female	39.7	38.9		
Marital Status			.730	.694
Single	56.9	59.3		
Married	38.8	34.5		
Divorced/Widowed	4.3	6.2		
Have Children			.509	.475
Yes	74.0	65.2		
No	26.0	34.8		
Age			5.644	.343
18-19	16.5	20.4		
20-24	35.7	33.6		
25-29	20.9	15.0		
30-39	10.4	17.7		
40-49	8.7	9.7		
50+	7.8	3.5		
Occupation			.861	.835
White Collar	46.6	44.2		
Blue Collar	12.9	14.2		
Housewife	5.2	8.0		
Student	35.3	33.6		
Income[a]			.355	.986
Less than 10,000	47.4	44.0		
10-14,999	11.4	12.8		
15-19,999	7.9	7.3		
20-24,999	9.6	10.1		
25,000+	23.7	25.7		

H_o: $p_1 \neq p_2$
H_a: $p_1 = p_2$
Reject if: $\alpha \leq .05$

[a]Students and housewives are included in these percentage figures.

any of the six socioeconomic characteristics. Further examination of the distribution of heavy and light half members on each of the socioeconomic variables reveals that on the average, heavy half and light half skiers have virtually identical socioeconomic profiles. It can therefore be concluded that the data strongly support the hypothesis that heavy and light half skiers do not differ with respect to their socioeconomic characteristics.

Attributes Sought by Light and Heavy Half Skiers

Some questions have been raised as to whether or not firms can develop products that will differentially attract heavy half consumers (Baumwoll, 1974). Doubts concerning the exploitability of the heavy half segment are predicated on research findings which have shown that (1) often, heavy volume consumers cannot be distinguished from light volume consumers with respect to what they desire in a product, and (2) heavy half members do not ordinarily share similar preferences toward product attributes. This inability to differentiate heavy half and light half in terms of their product preferences has proven to be a major obstacle to the development and implementation of segmentation strategies aimed at the heavy half. In an attempt to ascertain whether heavy volume skiers can be distinguished from light half skiers in

relation to their particular ski area preferences, the following hypothesis was formulated and tested:

> H_o: Skiers comprising the heavy half segment do not differ from light skiers in terms of the importance they assign different ski area attributes.

The hypothesis was tested by examining the relationship between segment membership and the average importance rankings assigned seven ski area attributes, seven slope attributes, six entertainment alternatives and three dining options. The results of these tests are presented in the next three subsections.

Ski Area Attributes

Heavy and light half members were first compared on the mean importance rankings assigned seven "ski area" attributes: (1) after ski entertainment, (2) lodging facilities, (3) restaurant facilities, (4) crowding at lift lines, (5) slope quality, (6) price of lift tickets, and (7) driving distance from home. Separate analyses of variances were performed on each attribute. The null hypotheses are that the mean rankings of importance do not differ between segments: H_o: $u_1 = u_2$. The results of the statistical analysis (see Table 29) show that on the average, light half and heavy half members do not differ significantly on the importance assigned six of the seven

Table 29.--Mean Importance Rankings Assigned Seven Ski Area Attributes by Heavy and Light Half Skiers.

Ski Area Attributes	Mean Importance Rankings[a] Light Half N=96[b]	Heavy Half N=97	F Ratio	Significance Level (α)
After ski entertainment	1.45	1.61	.535	.465
Lodging facilities at the ski area	1.95	1.93	.008	.931
Restaurant facilities at the ski area	1.68	1.78	.385	.536
Amount of crowding at lift lines	4.67	4.40	1.894	.170
Slope quality	4.86	5.42	14.147	.002 *
Price of lift tickets	2.92	2.66	1.307	.254
Driving distance from home to the area	3.48	3.20	1.352	.246

$H_o: u_1 = u_2$
$H_a: u_1 \neq u_2$
Reject if: $\alpha \leq .05$

[a]Zero being the least important and six being the most important ski area attribute.

[b]Only those heavy and light half skiers who returned a mail questionnaire are included in these percentage figures.

attributes--the single exception being slope quality. Heavy half skiers assigned substantially more importance to slope quality as a selection criteria than did members of the light half. The greater import ascribed to slope quality may, in part, be a function of the fact that heavy half skiers are more highly skilled than those comprising the light half of the sample. Collateral analysis revealed that respondents having greater skill generally assign significantly more importance[40] to slope quality when selecting which ski area to visit than do less advanced skiers.[41] It should be added, however, that although heavy half and light half skiers differed significantly on the magnitude of the average importance ranking assigned slope quality, members of both segments consider slope quality to be the most important factor to consider when selecting which ski areas to visit.

Slope Attributes

Heavy and light members were then compared to determine whether they differ with respect to the importance they place on the following six slope attributes: (1)

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[40]An analysis of variance was performed with skill as the independent variable and slope quality rankings as the dependent variable. The null hypothesis ($H_o: u_1=u_2=u_3=u_4$) was rejected (α level = .001).

[41]The average ranking assigned slope quality was as follows: Beginner=4.56; Intermediate=5.08; Advanced=5.14, Expert=5.66.

steep runs, (2) moguled slopes, (3) uncrowded slopes, (4) well-groomed slopes, (5) slopes of varying degrees of difficulty, (6) long runs and, (7) lighted slopes. The results, presented in Table 30, reveal that on the average, light half skiers place significantly more importance on the degree of slope crowding and whether or not the area offers a range of slopes having different degrees of difficulty than do heavy half skiers. Conversely, skiers comprising the heavy half place more importance on whether or not moguled and steep-run slopes are available.

Entertainment Options and Dining Styles

The next step in the analysis was aimed at determining whether heavy and light volume skiers differed with regard to their particular preferences relating to entertainment and restaurant options. The findings reveal that on the average, members of the light and heavy half segments do not differ in any significant way with respect to their partiality for any of the six entertainment options shown in Table 31. Members of both segments ranked quiet bars and heated pools to be the most desirable forms of after ski entertainment. Similarly, heavy and light volume skiers are not significantly different with respect to their preference for the three dining options (see Table 32). Both light and heavy half skiers consider sit down

Table 30.--Mean Importance Rankings Assigned Seven Slope Attributes by Heavy and Light Half Skiers.

Slope Attributes	Mean Ranking[a] Light Half N=96	Mean Ranking[a] Heavy Half N=97	F Ratio	Significance Level (α)
Steep runs	5.55	4.70	12.685	.000*
Moguled slopes	5.85	4.99	19.057	.000*
Uncrowded slopes	2.74	3.20	4.285	.039*
Well-groomed slopes	3.01	3.10	.178	.673
Slopes of varying degrees of difficulty	2.58	3.52	11.446	.001*
Long runs	3.07	2.84	1.134	.288
Lighted slopes for night skiing	5.15	5.60	3.655	.057

$H_o: u_1 = u_2$
$H_a: u_1 \neq u_2$
Reject if: $\alpha \leq .05$

[a]One being most important and seven the least important slope attribute.

Table 31.--Mean Preference Rankings Assigned Six Entertainment Options by Heavy and Light Half Skiers.

Entertainment Options	Mean Desirability Ranking[a] Light Half N=96	Heavy Half N=97	F Ratio	Significance Level (α)
Heated pools	2.83	3.01	.366	.546
Discotheques	3.65	3.49	.614	.434
Quiet bar - lounge with fireplace	2.10	1.95	.116	.733
Saunas	3.29	3.36	.092	.762
Game rooms (pinball, etc.)	4.49	4.55	.013	.907
Indoor tennis	4.61	4.64	.755	.386

$H_o: u_1 = u_2$
$H_a: u_1 \neq u_2$
Reject if: $\alpha \leq .05$

[a]One being the most desirable and six the least desirable entertainment option.

Table 32.--Mean Preference Rankings Assigned Three Dining (Eating) Styles by Heavy and Light Half Skiers.

Restaurant/Eating Options	Mean Desirability Ranking[a] Light Half N=96	Heavy Half N=97	F Ratio	Significance Level (α)
Cafeteria (you serve yourself) style	2.583	2.536	.272	.602
Sit down (you are waited on) style	1.552	1.701	1.217	.271
Fast food (snack bar) style	1.865	1.845	.035	.852

H_o: $u_1 = u_2$
H_a: $u_1 \neq u_2$
Reject if: $\alpha < .05$

[a]One being the most desirable and three the least desirable restaurant (eating) option.

dining most desirable and snack bars to be the least desirable.

In summary, heavy half and light half skiers only differed significantly with respect to the importance assigned slope attributes. They did not differ significantly with respect to the importance placed on lodging and restaurant facilities, the amount of crowding at lift lines, price of lift tickets or driving distance. These findings generally support the hypothesis that heavy half skiers do not differ from light half skiers in terms of the importance they place on different ski area attributes. The implications of these findings will be discussed in Chapter six. Next, the participation characteristics of heavy and light half skiers will be examined.

Participation Characteristics of Light and Heavy Half Skiers

A priori, there was no evidence to indicate that heavy and light half skiers would differ with regard to their participation characteristics. Therefore, it was hypothesized that:

> H_o: Skiers comprising the heavy half segment do not differ from light half skiers in terms of their participation characteristics.

The hypothesis was tested by comparing light and heavy halves

on the following eight participation characteristics: (1) "majority of participation" patterns; (2) participation in ski vacations; (3) brand loyalty, i.e., number of areas visited, percent of skiing accomplished at one area; (4) distance generally traveled, and maximum distance willing to travel to reach a ski area for an overnight or weekend trip; (5) amount generally paid for a lift ticket, and maximum willing to pay for a lift ticket while on an overnight or weekend ski trip; (6) equipment ownership; (7) skill level; and (8) ski club affiliation. Chi Square analysis was used to test for association between segment membership and nominally scaled participation variables. Analyses of variance were employed to compare the two segments on intervally scaled variables. The findings of these analyses comprise the remainder of this section.

Participation Patterns

Heavy and light half members were first compared to determine if they differ with respect to when they accomplish most of their skiing--on weekends or weekdays; on overnight or day trips. A summary of the contingency table analysis and results of the Chi Square tests which were performed are shown in Table 33. The analysis shows a significant association between segment membership and

Table 33.--"Majority of Participation" Patterns of Heavy and Light Half Skiers.

	Percent		Chi Square Statistic	Significance Level (α)
	Light Half N=116	Heavy Half N=113		
Weekend/Weekdays			5.048	.025 *
Weekends	56.5	71.7		
Weekdays	43.5	28.3		
Overnight/Day Trips			7.3165	.007 *
Overnight Trips	22.4	39.8		
Day Trips	77.6	60.2		

H_o: $p_1 = p_2$
H_a: $p_1 \neq p_2$
Reject if: $\alpha \leq .05$

and "majority of participation" patterns. A significantly higher proportion of heavy half skiers do most of their skiing on overnight trips and during weekends than do light half skiers. A relatively high percent of light half skiers, 43.5 percent, ski most often during weekdays as compared to only 28.3 percent of the heavy half skiers.

Ski Vacations

A contingency table analysis was undertaken to determine if there was a significant association between segment membership and whether or not a respondent took a ski vacation during the 1976-1977 season. The results, shown in Table 34, indicate a statistically significant relationship between volume of days skied and participation in a ski vacation. A higher proportion of heavy half members--almost three times as many--took a skiing vacation than did light half members. Supplementary analyses of variances revealed that on the average, heavy half skiers take significantly more and longer ski vacations than do light half skiers.

Brand (Area) Loyalty

Research findings have revealed that heavy half consumers tend to buy more of a variety of brands and are less brand loyal than light half consumers (Twedt, 1967,

Table 34.--Percent of Heavy and Light Half Skiers That Took a Ski Vacation During the 1976-1977 Ski Season.

	Percent			
	Light Half N=116	Heavy Half N=113	Chi Square Statistic	Significance Level (α)
Participated in a ski vacation	16.4	46.4	22.614	.001 *
Did not participate in a ski vacation	83.6	53.6		

H_o: $p_1 = p_2$
H_a: $p_1 \neq p_2$
Reject if: $\alpha \leq .05$

p. 95). To test skiers, separate analyses of variances were performed comparing heavy and light half skiers on both the number of ski areas they visited during the 1976-1977 season and the percent of skiing accomplished at the area they frequented most often. The findings, presented in Table 35, show that heavy half skiers are, in fact, less loyal than skiers comprising the light half of the sample. Heavy half members skied at significantly more areas and skied significantly less at one area than light half skiers.

Travel Distance and Lift Ticket Prices

Heavy and light half members were compared to determine whether or not they differed with respect to (1) the number of hours they generally drive to reach a ski area, and (2) the maximum number of hours they would be willing to travel. A comparison of the means, presented in Table 36, reveals that heavy half skiers generally travel further and are willing to travel greater distances than light half members. However, the difference is not statistically significant at the .05 significance level.

An analysis, similar to the one reported above, was performed to determine whether heavy and light half skiers differ with respect to the amount they usually pay

Table 35.--Mean Number of Areas Visited and Percent of Skiing Accomplished at One Area by Heavy and Light Half Skiers During the 1976-1977 Ski Season.

	Light Half N=116	Heavy Half N=113	F Ratio	Significance Level (α)
Mean number of areas visited during the 76/77 season	1.69	3.74	55.117	.001 *
Mean percent of skiing undertaken at the most frequented ski area	85.79	70.47	30.552	.001 *

H_o: $u_1 = u_2$
H_a: $u_1 \neq u_2$
Reject if: $\alpha < .05$

Table 36.--Average Number of Hours Heavy and Light Half Skiers Usually Drive (One Way) to Reach a Ski Area for an Overnight or Weekend Ski Trip and Average Number of Hours They Would be Willing to Drive.

	Average Number of Hours		F Ratio	Significance Level (α)
	Light Half N=96	Heavy Half N=97		
Number of hours usually driven (one way) to reach a ski area for an overnight/weekend ski trip	3.6	3.9	1.495	.2230
Maximum number of hours willing to drive (one way) to reach a ski area for an overnight/weekend ski trip	5.1	5.4	1.422	.2345

H_o: $u_1 = u_2$
H_a: $u_1 \neq u_2$
Reject if: $\alpha \leq .05$

fora daily lift ticket while on an overnight or weekend ski trip and the maximum amount they would be willing to pay. The findings, presented in Table 37, show that heavy half members pay more and would be willing to pay a greater amount for a lift ticket on the average than light half skiers. Again, however, the difference is not significant at the .05 significance level.

Equipment Ownership, Skill Level and Ski Club Membership

Separate contingency table analyses were performed to determine whether or not heavy and light half skiers differed with respect to (1) whether they owned or rented their equipment, (2) their skill levels, and (3) membership in a ski club. For each analysis the null hypothesis was that a respondent's classification was independent of segment membership. The findings, shown in Table 38, reveal a statistically significant association between equipment ownership or rental and segment membership. Three times as many light half members rent all or a portion of their equipment as do heavy half skiers. Only 12.4 percent of the heavy half rent their equipment in contrast to 36.4 percent of the light half.

A statistically significant association was also found to exist between segment membership and skill level.

Table 37.--Average Amount Heavy and Light Half Skiers Pay for a Daily Lift Ticket While on an Overnight or Weekend Ski Trip and Maximum Amount They Are Willing to Pay.

	Mean Amount ($)		F Ratio	Significance Level (α)
	Light Half N=96	Heavy Half N=97		
Amount usually paid for a daily lift ticket	9.50	10.00	2.679	.1033
Maximum amount willing to pay for a daily lift ticket	11.75	12.60	3.095	.0802

H_o: $u_1 = u_2$
H_a: $u_1 \neq u_2$
Reject if: $\alpha \leq .05$

Table 38.--Equipment Ownership, Skill Level and Ski Club Membership of Heavy and Light Half Skiers.

	Percent		Chi Square Statistic	Significance Level (α)
	Light Half N=116	Heavy Half N=113		
Equipment Ownership			16.310	.001 *
Rent (all or a portion)	36.2	12.4		
Own	63.8	87.6		
Skill Level			38.978	.011 *
Beginner	30.2	2.2		
Intermediate	44.8	47.8		
Advanced	22.4	42.0		
Expert	2.6	8.0		
Ski Club Membership			.196	.658
Belong	12.9	19.5		
Do not belong	87.1	80.5		

Heavy half members are generally more highly skilled than light half skiers. More than 50 percent of heavy half skiers have achieved either advanced or expert status as compared to only 25 percent of the light half skiers. Finally, the analysis reveals that a higher porportion, 19.5 percent, of heavy half respondents belong to a ski club compared to only 12.0 percent of light half skiers. However the difference is not statistically significant at the .05 significance level.

A summary of the heavy half segmentation findings and discussion of their possible implications will be presented in Chapter six. The next section will deal with the attributes sought segmentation analysis.

ATTRIBUTES SOUGHT SEGMENTATION ANALYSIS

Presentation of the attributes sought segmentation analysis is divided into (1) the formation of the attributes sought segments, (2) the specific ski area attributes desired by members of the different segments, (3) the socioeconomic characteristics of segment members, and (4) the participation characteristics of segment members. The findings of tests performed on hypotheses dealing with attributes sought segmentation are also reported in this section.

Formation of the Attributes Sought Segments

The attributes sought segments were formulated on the basis of the importance rankings respondents assigned to seven ski area attributes:[42]

1. after ski entertainment (bars, discotheques, pools, etc.)
2. lodging facilities at the ski area
3. restaurant facilities at the ski area
4. amount of crowding at lift lines
5. slope quality (degree of vertical drop, length of slope, number and difficulty of slopes, etc.)
6. price of lift tickets
7. driving distance from home to the area

A non-hierarchical,[43] heuristic clustering technique[44] based on a "minimum squared error" criterion was used to identify the attributes sought segments. The

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[42]The importance rankings were calculated from the responses to the 21 paired attribute comparisons included on the mailed questionnaire. (See page 112 of this dissertation for a more detailed discussion of how the rankings were calculated).

[43]The program generates an entire sequence of clusters which are not hierarchically related.

[44]Clustering techniques attempt to group points (respondents, objects) in a multi-dimensional space in such a way that each object is more like other objects in its group than objects outside the group. According to Green and Tull (1975, p. 565) cluster analysis is concerned with: 1. Description rather than inference. 2. Objects rather than variables; and, 3. Relationships among the whole set of data rather than criterion predictor relationships.

clustering program first treats each respondent or pattern as a separate point in a seven dimensional space. The coordinates of that point are the importance rankings assigned each of the seven attributes (j=1, 2, . . . 7). The clustering is accomplished in two phases. Phase 1 creates a sequence of clusterings containing 2, 3, . . . , K_c clusters where K_c is specified by the user. The initial cluster centers in the first two-cluster clustering are the centroid of the patterns, and the pattern farthest removed from the centroid, not counting outliers. Given a clustering with K clusters, a clustering with K + 1 clusters is formed by identifying the pattern most removed from the clustering as a potential cluster center.[45] Each pattern is then tried in every cluster to minimize squared error.[46] Phase 2 merges clusters two at a time to produce a sequence of clusterings containing K_c -1, K_c-2, ---, 2 clusters, Phases 1 and 2 are alternated until a pass through both

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[45]Before the grouping began, the distribution of respondents on each attribute dimension was standardized to mean zero and a standard deviation of one so that the outcome would not be distorted by differences between dimensions.

[46]Every pattern in a cluster is moved into every other group other than the one it is in. This is accomplished one cluster at a time in sorted order (Friedman and Rubin, 1967, p. 1159). The process continues until no further movement of patterns will reduce the squared error.

decreases the squared error of none of the clusterings.[47] The best clustering ever achieved for each K is retained (Dubes and Jain, 1975, p. 251).

As stated above, the cluster analysis program permits specification of the number of clusterings to be created, from 2 . . . K_{max} clustering solutions. For the purposes of this study, 2, 3, 4 . . . 10 clustering solutions were created.[48] After examining the nine different solutions it was subjectively determined that

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[47] The i^{th} pattern, i = 1, ,,,. n is written as $x_i = (x_{i1}\ x_{i2}---x_{iN})^T$. A clustering is a partition $[C_1, C_2, \ldots, C_k]$ of the integers [1, 2, . . . , n] that assigns each pattern a single cluster label. The patterns corresponding to the integers in C_k form the k^{th} cluster, whose center is: $c_k = (c_{k1}c_{k2}\cdot\ \ldots\ c_{kN})^T$, where $c_{kj} = (1/M_k) \sum_{i\ C_k} x_{ij}$ and M_k is the cardinality of C_k, or the number of patterns in cluster k. Thus, a cluster center is simply the centroid, or sample mean, of all patterns in the cluster. The squared error for cluster k is:

$$e_k^2 = \sum_{i\ C_k} (x_i - c_k)^T (x_i - c_k),$$

and the squared error for the clustering is:

$$E_k^2 = \sum_{k=1}^{k} e_k^2.$$ (Dubes and Jain, 1975, p. 249).

[48] The "cluster" program prints a history of the best clusters for each clustering solution (2, 3, 4,. . .10). After examining each solution, the user can then select the one which results in the most meaningful clusters. The decision as to which solution to use is a subjective one.

the five cluster solution resulted in the most discrete clusters while still allowing follow-up descriptive analysis and comparison of the clusters. Solutions involving more than five clusters resulted in some clusters with too few members to permit further statistical analysis.

In addition to providing information on cluster memberships, the cluster analysis program provides the following descriptive statistics: a listing of the number of patterns in each cluster, cluster centroids in botn original and scaled feature space, Euclidean distances between each cluster center and the other cluster centers, and the average and minimum Euclidean distances separating each cluster centroid. These statistics are presented in Tables 39, 40, 41, 42, 43 respectively.

Description of the Five Attributes Sought Segments

Having decided on the five cluster ($K_c = 5$) solution, the next step was to describe each of the clusters in terms of the importance rankings skiers assigned each attribute. The centroids, the average ranking of importance assigned to an attribute by respondents contained in each cluster, served as the basis for developing this description. An examination of the cluster centroids, shown in Table 40 and graphically presented in

Table 39.--The Number of Respondents in Each of the Five Clusters.

Cluster	Number of Respondents	Percent of Sample
1	31	16.1
2	65	33.7
3	15	7.7
4	47	24.4
5	35	18.1
TOTAL	193[a]	100.0

[a]The information needed to accomplish the clustering was collected on the mailed questionnaire. Consequently, only the 193 respondents who completed a questionnaire could be grouped into clusters.

Table 40.--Cluster Centroids in Original Feature Space.[50]

	Entertainment	Lodging	Restaurant	Crowding at Lift Lines	Slope Quality	Price of Lift Tickets	Driving Distance from Home
Cluster 1	2.1613	4.0644	2.9032	4.0323	5.6774	.6452	1.5161
Cluster 2	.7727	1.8333	1.5152	5.3939	4.9848	2.2576	4.2424
Cluster 3	4.6000	2.4000	.8000	3.0667	4.6667	4.1333	1.3333
Cluster 4	1.5217	.7826	1.7826	5.1522	5.4565	3.8261	2.4783
Cluster 5	1.0857	1.5714	1.4286	3.1714	4.7714	3.7429	5.2286

[50]Rankings ranged from 0 to 6, 6 being the most important and 0 the least important attribute.

Table 41.--Cluster Centroids in Scaled Feature Space.[51]

	Entertainment	Lodging	Restaurant	Crowding at Lift Lines	Slope Quality	Price of of Lift Tickets	Driving Distance From Home
Cluster 1	.6328	2.1267	1.1727	- .5014	.5323	-2.1424	-1.8207
Cluster 2	- .7558	- .1045	- .2154	.8603	- .1602	- .5300	.9056
Cluster 3	3.0715	.4522	- .9306	- 1.4670	- .4784	1.3458	-2.0035
Cluster 4	- .0068	-1.1552	.0520	.6185	.3114	1.0385	- .8585
Cluster 5	- .4428	- .3564	- .3020	- 1.3623	- .3736	.9553	1.8918

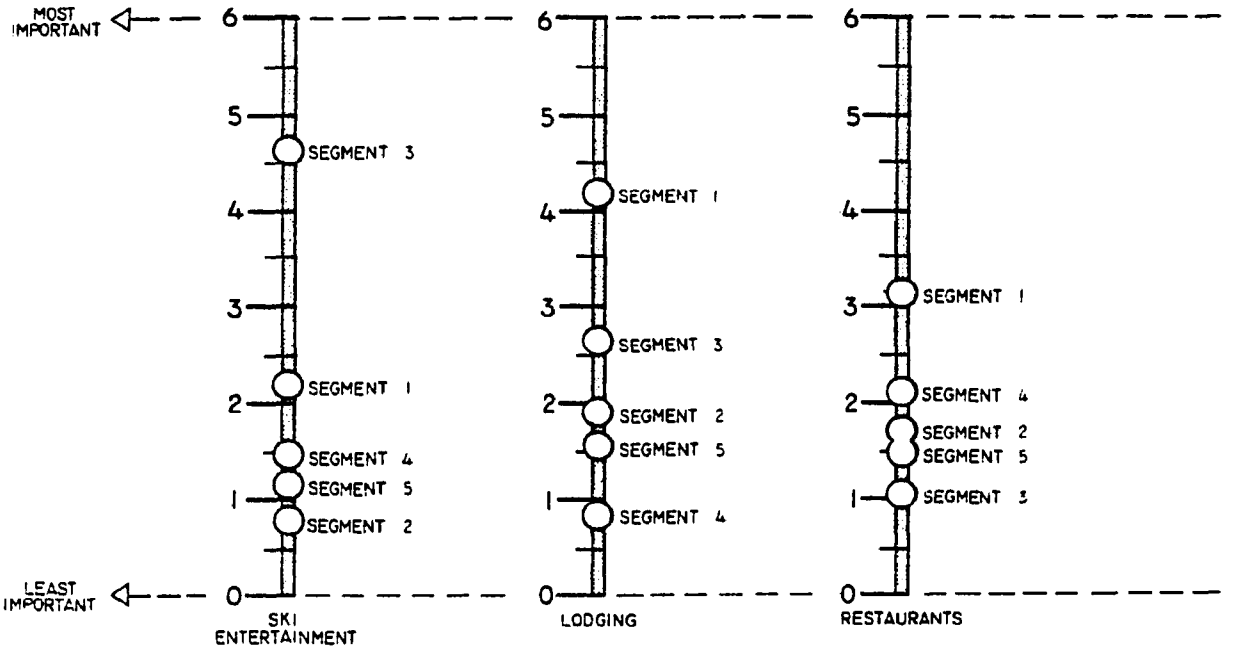
[51]Standardized to mean zero and a standard deviation of one.

Figure 12, led to the following characterizations:

Cluster One members attach more importance to slope quality, lodging facilities, and restaurant offerings than members of the other four segments. They are relatively unconcerned with both the price of lift tickets and the travel time they must incur to reach a ski area. This cluster constitutes 16.1 percent of the respondents and has been named the *Quality Conscious* segment.

Cluster Two is comprised of respondents who are seriously concerned with the amount of crowding they may encounter at lift lines. Lift line crowding is the most important criterion they take into consideration when selecting which ski area to patronize. A significant amount of attention is also given to driving distance as a factor in their selection process. Skiers of this segment display relatively little concern for either the cost of lift tickets or the amenities offered at ski areas. Because of its apparent aversion to crowding, this cluster has been named the *Crowding Conscious* segment.

Cluster Three is made up of those respondents who attach a high degree of importance to the price of lift



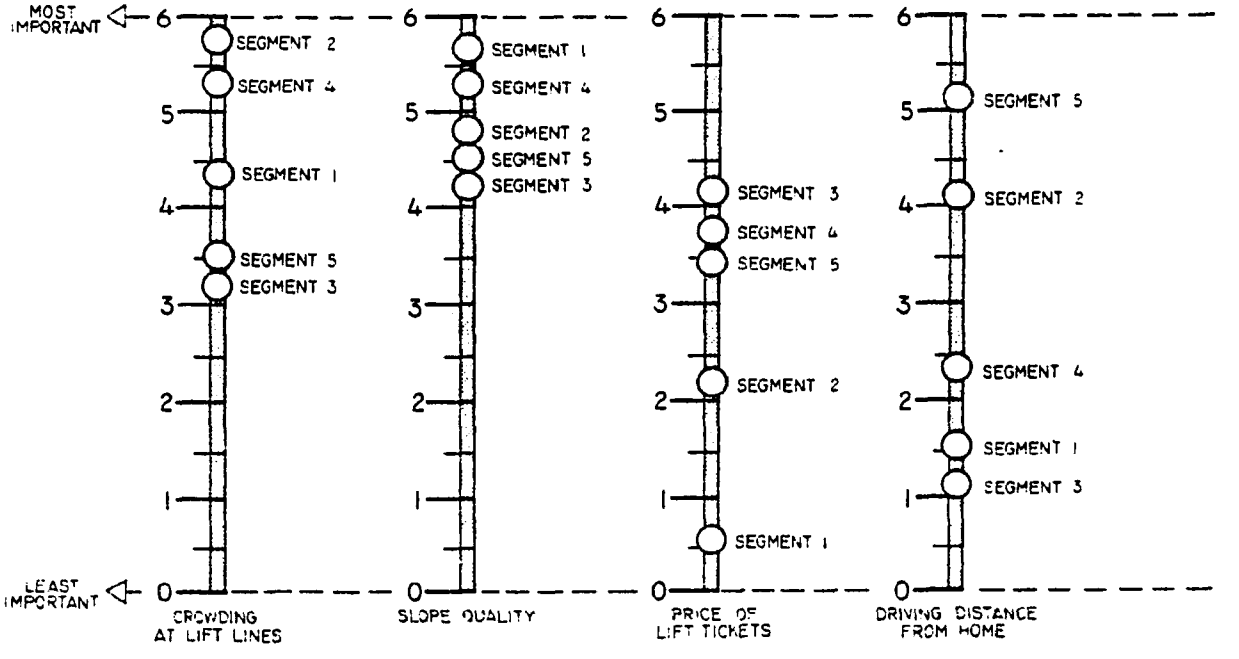


FIGURE 12. OVERALL SCALE VALUES OF THE SEVEN ATTRIBUTES FOR THE FIVE SEGMENTS

tickets when deciding on which ski areas to patronize. They appear willing to travel greater distances and tolerate slopes of lesser quality in exchange for lower lift ticket prices. Members of this segment attach the least amount of importance to crowding at lift lines when selecting a ski area but show comparatively more concern for entertainment than do other skiers. In light of the significance they place on lift ticket price as a selection criterion this cluster will, henceforth be known as the *Price Conscious* segment.

Cluster Four members show a strong similarity to the members of segment one with regard to the importance they attach to slope quality but are quite different with respect to the degree of concern shown for both the price of lift tickets and degree of crowding encountered at lift lines. They attach relatively greater significance to these two attributes. Amenity offerings are ranked low and a moderate amount of importance is attached to driving distance as a selection factor. Because of the importance placed on skiing aspects of the total ski area offerings, this cluster has been named the *Strictly Skiing Conscious* segment.

Cluster Five includes skiers whose primary concern is with the distance they must travel to reach a ski area. In exchange for a reduction in travel time, members of this segment appear willing to tolerate some crowding at lift lines and slopes of lesser quality. For this reason, this group which accounts for 18.1 percent of the respondents has been named the *Travel Conscious* segment.

The information contained in Tables 42 and 43--Euclidean distances separating the centroids of the five clusters and, the average and minimum Euclidean distances between each cluster centroid and the other cluster centroids--provides insight with respect to the location of the different clusters in attribute space. It shows that clusters two, four and five are closely positioned to one another whereas, clusters one and three are set apart from all other clusters.

Specific Attributes Sought by the Different Attributes Sought Segments

Further analysis was undertaken to determine more specifically what the members of the different attributes sought segments considered to be important when choosing particular ski areas to patronize. The five segments were compared on the mean importance rankings assigned slope attributes, entertainment options, and dining

Table 42.--Euclidean Distances Separating the Centroids of the Five Clusters.[a]

	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
Cluster 1	0.	4.60	5.22	4.98	5.87
Cluster 2	4.60	0.	5.74	2.75	2.89
Cluster 3	5.22	5.74	0.	4.41	5.36
Cluster 4	4.98	2.75	4.41	0.	3.95
Cluster 5	5.87	2.89	5.36	3.59	0.

[a]The Euclidean Distance between Cluster K and Cluster M is given by:

$$\sum_{j=1} (C_{k(j)} - C_{m(j)})^2$$

where $C_{k(j)}$ is the cluster center for cluster k in dimension j

Table 43.--Average and Minimum Euclidean Distance Between Each Cluster Centroid and the Other Cluster Centroids.

	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
Average Distance	5.17	4.00	5.19	3.93	4.43
Minimum Distance	4.60	2.75	4.41	2.75	2.89

styles.[49] Separate analyses of variance were performed on each of the seven slope attributes, six entertainment options and three dining styles.[50] For each ANOVA test, the null hypothesis was that the mean rankings are equal across the five segments: H_o: $u_1 = u_2 = u_3 = u_4 = u_5$. If a null hypothesis was rejected, post hoc T-tests were performed to determine which pair or pairs of means contributed to the significance of the overall F-ratio.[51] The results of the analyses of variance are presented in Tables 44, 45, and 46.

Findings presented in Table 44 reveal significant differences among the five segments with regard to the mean importance rankings assigned three of the seven slope attributes--uncrowded slopes, lighted slopes, and steep slopes. Follow-up T-tests disclosed that the

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[49] Respondents were asked (on the mailed survey) to: rank seven slope attributes in order of their importance (1 being the most important, 7 the least important) and rank six entertainment options and three restaurant options in order of the desirability.

[50] Analysis of variance is a statistical tool for studying the relationship between an intervally scaled dependent variable and one or more independent variables. The independent variables may be qualitative or intervally scaled. See Neeter and Wasserman (1974, pp. 419-633).

[51] A T-test is a statistical technique that can be used to compare the differences between sample means to determine if the difference is significantly large. The null hypothesis for each T-test is that the means are not statistically different (H_0 $u_1 = u_2$).

Table 44.--Mean Importance Rankings Assigned Seven Slope Attributes by Members of the Five Attributes Sought Segments.

	Mean Importance Rankings[a]							
	Quality Conscious Segment 1 N=31	Crowding Conscious Segment 2 N=65	Price Conscious Segment 3 N=15	Strictly Skiing Conscious Segment 4 N=47	Travel Conscious Segment 5 N=35	Skiers as a Whole N=193	F R Ratio	Significance level (α)
Steep runs	4.42	5.38	5.33	4.87	5.51	5.12	2.54	.041 *
Moguled slopes	4.93	5.54	5.13	5.43	5.66	5.39	3.74	.248
Uncrowded slopes	3.68	2.48	3.33	2.98	3.09	2.97	1.36	.006 *
Well-groomed slopes	2.87	3.22	3.20	2.94	3.03	3.06	.39	.810
Slopes of varying degrees of difficulty	3.45	2.88	2.60	3.34	2.83	3.05	1.01	.401
Long runs	2.90	2.82	3.53	3.06	2.86	2.95	.74	.559
Lighted slopes for night skiing	5.77	5.69	4.27	5.28	5.05	5.38	3.09	.017 *

H_o: $u_1 \neq u_2 \neq u_3 \neq u_4 \neq u_5$
H_a: H_o is not true
Reject if: $\alpha \leq .05$

[a]One being the most important and seven the least important slope attribute.

members of the Crowding Conscious Segment ranked slope crowding to be the most important slope attribute and significantly more important than other skiers. Members of this segment are seriously concerned with the crowding they encounter both at lift lines and on the ski slopes. Quality Conscious skiers assigned significantly more importance to steep slopes than members of the other segments. Finally, the results of the t-tests disclosed that skiers comprising the Price Conscious segment consider lighting for night skiing to be significantly more important than other skiers.

The findings presented in Table 45 reveal no significant differences among segments with respect to the mean desirability rankings assigned any of the six entertainment options. Members of all five segments ranked quiet bars to be the most desirable form of after ski entertainment. However, results presented in Table 46 reveal that segment members differ significantly with respect to the preference rankings they assign one of the three dining alternatives. The post hoc T-tests disclosed that skiers comprising the Quality Conscious segment ranked sit down dining to be significantly more desirable--at the .05 significance level--on the average than other skiers. Members of the Price Conscious segment differed from all other skiers in that they ranked cafeteria

Table 45.--Mean Preference Rankings Assigned Six Entertainment Options by Members of the Five Attributes Sought Segments.

	Mean Rankings[a]							
	Quality Conscious Segment 1 N=31	Crowding Conscious Segment 2 N=65	Price Conscious Segment 3 N=15	Strictly Skiing Conscious Segment 4 N=47	Travel Conscious Segment 5 N=35	Skiers as a whole N=193	F Ratio	Significance level (α)
Heated pools	2.87	2.80	3.87	3.11	2.54	2.92	2.73	.056
Discotheques	3.19	3.89	2.80	3.40	3.85	2.03	1.46	.216
Quiet Bar - with fireplace	1.68	2.05	1.68	2.10	2.37	3.33	1.50	.240
Saunas	3.51	3.09	3.93	3.22	3.48	4.52	2.17	.074
Game rooms (pin-ball, etc.)	4.84	4.43	4.27	4.81	4.11	4.62	.650	.628
Indoor tennis	4.84	4.74	4.53	4.36	4.63	2.92	2.73	.056

H_o: $u_1 \neq u_2 \neq u_3 \neq u_4 \neq u_5$
H_a: H_o is false
Reject if: $\alpha \leq .05$

[a]One being the most desirable and six the least desirable form of after ski entertainment.

Table 46.--Mean Preference Rankings Assigned Different (Eating) Styles by Members of the Five Attributes Sought Segments

	Mean Rankings[a]							
	Quality Conscious Segment 1 N=31	Crowding Conscious Segment 2 N=65	Price Conscious Segment 3 N=15	Strictly Skiing Conscious Segment 4 N=47	Travel Conscious Segment 5 N=35	Skiers as a whole N=193	F Ratio	Significance level (α)
Cafeteria (you serve yourself) style	2.00	1.78	1.60	1.89	1.91	1.89	1.05	.382
Fast food (snack bar) style	2.81	2.52	2.60	2.53	2.43	2.56	1.70	.152
Sit down (you are waited on) style	1.19	1.69	1.80	1.57	1.89	1.63	2.65	.035 *

H_o: $u_1 \neq u_2 \neq u_3 \neq u_4 \neq u_5$
H_a: H_o false
Reject H_o if: $\alpha \leq .05$

[a] One being the most desirable and three being the least desirable restaurant (eating) style.

style dining to be the most desirable dining option.

Each of the five segments were then analyzed with regard to the socioeconomic and participation characteristics of their members. The findings of these analyses comprise the remainder of the chapter.

Socioeconomic Characteristics of Skiers Comprising the Different Attributes Sought Segments

In several of the studies surveyed in Chapter Three, researchers were able to identify segments seeking distinct benefits or attributes but were unable to differentiate between segment members on the basis of socioeconomic characteristics. This inability to develop discriminative socioeconomic profiles of segment members severely restricts the capacity of firms to focus promotional efforts around interests of the segments.[52] In order to determine if and to what extent members of each of the five attributes sought segments can be identified in terms of their socioeconomic characteristics, the

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[52]According to Frank (1967, p. 28), "If customers belonging to different segments have virtually identical profiles, the effectiveness of segmentation, based on this dimension (e.g. "benefits sought") is severely constrained; because there is no way to tailor promotion to any one segment. It has to be directed, instead, to the entire customer population. For many promotional vehicles (radio, newspapers) data is available on audience socioeconomic characteristics. If socioeconomic profiles can be developed for each segment, the firm can match these characteristics against those of different promotional vehicles and select the one that most effectively reaches the segment(s) of interest.

following hypothesis was formulated and tested:

> H_o: Individuals comprising the different "attributes sought" segments do not differ from one another in terms of their socioeconomic characteristics.

The hypothesis was tested by examining the relationship between segment membership and the following six socioeconomic variables: (1) sex, (2) marital status, (3) family status, (4) age, (5) income, (6) occupation. Separate Chi Square tests were performed on each of the six variables to determine if they were statistically associated with membership in any of the five "attributes sought" segments. The findings, shown in Table 47, reveal a statistical association between segment membership and two of the socioeconomic variables which were tested--marital status and income. No significant association--at .05 significance level--was found to exist between segment membership and the remaining four socioeconomic variables which included sex, family status, age and occupation. A further examination of the distributional breakdowns of the five segments on each of the socioeconomic variables resulted in the formation of the following socioeconomic summary profiles:

> The Quality Conscious Segment contains a higher proportion of women skiers, 41.9 percent, and single persons, 61.3 percent, than among skiers as a whole. The segment is divided nearly

Table 47.--Socioeconomic Characteristics of the Members of the Five Attributes Sought Segments.

	Percent[a]							
	N=31	N=56	N=15	N=47	N=35	Skiers as a Whole N=193	Chi Square Statistic	Significance level (α)
Sex							2.220	.695
Male	58.1	55.4	66.7	68.1	62.9	61.1		
Female	41.9	44.6	33.3	31.9	37.1	38.9		
Marital Status							16.624	.034*
Single	61.3	41.5	86.7	55.3	66.7	56.0		
Married	32.3	53.8	13.3	42.6	24.7	39.4		
Divorced/Widowed	6.4	4.7	0.0	2.1	8.6	4.6		
Children[b]							5.562	.2344
No	46.2	23.7	50.0	23.8	41.7	31.7		
Yes	53.8	76.3	50.0	76.2	58.3	68.3		
Gross Family Income[c]							25.999	.050*
Less than 10,000	51.7	32.8	73.3	42.6	48.6	44.2		
10-14,999	0.0	14.1	0.0	14.9	20.0	12.1		
15-19,999	3.5	7.8	13.4	9.2	5.8	7.4		
20-24,999	3.4	15.6	0.0	12.1	2.9	9.5		
25,000+	41.4	29.7	13.3	21.2	22.9	26.8		
Age							23.943	.245
18-19	22.6	10.9	46.7	14.9	28.6	19.8		
20-24	41.8	28.1	33.3	36.2	22.9	31.8		
25-29	6.5	23.4	13.3	21.3	22.8	19.2		
30-39	19.4	17.2	0.0	12.7	11.4	14.0		
40-49	6.5	14.1	6.7	8.5	5.7	9.4		
50+	3.2	6.3	0.0	6.4	8.6	5.8		
Occupation							6.654	.880
White Collar	41.9	52.3	33.3	40.3	48.6	45.3		
Blue Collar	13.0	7.7	13.4	17.7	11.4	12.0		
Housewife	6.4	7.7	0.0	8.6	5.7	6.8		
Student	38.7	32.3	53.3	33.4	34.3	35.9		

[a]These are percents of skiers who returned a mailed questionnaire and therefore differ to some extent from the percentages reported in the general findings chapter.

[b]Reported in percent of married respondents.

[c]Percentage figures include students and housewives.

evenly between individuals with family incomes under $10,000, 51.7 percent, and those with incomes over $25,000, 41.4 percent. The mean age of skiers comprising the segment is 26.8 years with 64.4 percent of the membership either 24 years of age or younger.

The Crowding Conscious Segment contains a higher proportion of women, 44.6 percent, and married persons, 53.8 percent, than any other segment. A high percentage, 76.3 percent, of the married skiers have children. Over half of the individuals, 53.1 percent, comprising this segment have annual gross family incomes in excess of $15,000 while 29.7 percent have incomes exceeding $25,000. In addition, this segment is characterized by a higher proportion of older skiers. The mean age is 29.9 years with 37.6 percent of the members 30 years of age or older.

The Price Conscious Segment contains a higher proportion of single people, 86.7 percent. This segment also has the highest percentage of young skiers and students. The mean age is 22 years with individuals under 20 comprising 46.7 percent of the segment.

The Strictly Skiing Conscious Segment contains a higher proportion of male skiers, 68.1 percent. Over half, 57.5 percent, of the members have gross family incomes under $15,000. This segment contains a higher proportion of blue collar workers, 17.7 percent, and housewives, 8.6 percent. The mean age of skiers comprising this segment is

Among the Travel Conscious Segment are 62.9 percent male skiers and 39.9 percent females. Two thirds of this segment are single while 24.7 percent are married with 8.6 percent either divorced or widowed. Married skiers with children make up only 17.1 percent of the segment. The mean age of member skiers is 27.1 years with individuals 50 years of age or older comprising a greater percentage of this segment than any other.

Participation Characteristics of the Different Attributes Sought Segments

The next step in the analysis was aimed at determining whether or not members of the five attributes sought segments differed with respect to their participation patterns and habits. It was hypothesized that:

H_o: Skiers comprising the five attributes sought segments do not differ in terms of their participation characteristics.

The hypothesis was tested using two different statistical techniques. Chi Square tests were used to check for statistically significant relationships between segment membership and the six nominally scaled participation variables shown in Table 48.[53] For each Chi Square analysis, the null hypothesis is that the number of respondents that fall into various specified classes of the participation variables are statistically independent of segment membership: H_o: $p_1=p_2=p_3=p_4=p_5$. In addition, separate analyses of variance were performed on the nine intervally scaled participation variables shown in Table 49. The null hypothesis for each ANOVA test is that the mean values for the variable do not differ across the five segments: H_o: $u_1=u_2=u_3=u_4=u_5$.[54]

The Chi Square tests revealed a significant

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[53]Chi Square tests can be used to test for a systematic relationship between two or more nominally scaled variables, where the data consists of counts i.e., the number of cases that fall into various specified classes of each combination of categorical variables (Green and Tull, 1975, p. 353). The Chi Square statistic implies a systematic relationship between the two variables - but not the strength of the relationship.

[54]T-tests were performed comparing the means of each possible pair of segments in order to determine which pair or pairs of means contributed to the significance of the overall F-ratio. The results of these tests were included in the formulation of the "participation characteristic" profiles of the five segments.

Table 48.--Results of Chi Square Tests Aimed at Determining the Significance of the Relationship Between Membership in the Attributes Sought Segments and Six Nominally Scaled Participation Characteristics.

	Segment 1 N=31	Segment 2 N=65	Segment 3 N=15	Segment 4 N=47	Segment 5 N=35	Skiers as a Whole N=193	Chi Square Statistic	Significance level (α)
Weekend/Weekdays							10.096	.038*
Weekend	58.1	78.5	60.0	51.1	60.0	63.7		
Weekdays	41.9	21.5	40.0	48.9	40.0	36.3		
Overnight/Day Trips							11.037	.026*
Overnight trips	45.2	42.0	19.0	21.3	20.0	31.6		
Day long trips	54.8	58.0	81.0	78.7	80.0	68.4		
Ski Vacations							4.593	.385
Yes	43.3	35.4	20.0	28.0	24.7	31.8		
No	56.7	64.6	80.0	72.0	75.3	68.2		
Skill Level							7.559	.819
Beginner	16.1	15.4	20.0	19.1	14.3	16.6		
Intermediate	35.5	43.1	60.0	44.7	51.4	45.1		
Advanced	41.9	33.8	20.0	31.9	33.8	33.7		
Expert	6.5	7.7	0.0	4.3	0.0	4.7		
Equipment Ownership/Rental							4.228	.376
Rent	20.0	18.5	26.7	29.8	34.3	24.9		
Own	80.0	81.5	73.3	70.2	65.7	75.1		
Ski Club Membership							2.764	.598
Belong	22.6	13.8	13.3	12.8	22.9	16.6		
Do not belong	77.4	86.2	86.7	87.2	77.1	83.4		

Table 49.--Results of Analyses of Variance Aimed at Determining the Strength of the Association Between Membership in the Attributes Sought Segments and Nine Intervally Scaled Participation Characteristics.

	Segment 1 N=31	Segment 2 N=65	Segment 3 N=15	Segment 4 N=47	Segment 5 N=35	Skiers as a whole N=193	F Ratio	Significance level (α)
Number of days skied	18.4	9.0	11.7	10.2	11.3	11.4	3.484	.009*
Number of ski areas visited	3.7	2.5	2.5	2.8	2.2	2.7	2.116	.080
Percent of skiing accomplished at their most frequented area	74.9	77.8	78.1	79.8	81.2	78.51	.3897	.815
Amount usually paid for a daily lift ticket while on an overnight/weekend ski trip	10.80	9.80	9.00	9.50	9.10	9.70	3.039	.018*
Maximum willing to pay for a daily lift ticket while on an overnight/ weekend ski trip	14.10	12.40	10.90	11.70	11.50	12.20	5.084	.001*
Number of hours driven (one-way) to reach a ski area for an overnight/ weekend ski trip	4.0	3.6	3.7	3.9	2.7	3.7	2.307	.050*
Maximum number of hours willing to drive (one-way) for an overnight/ weekend ski trip	5.1	5.0	5.8	5.7	4.8	5.2	2.830	.026*
Age first adopted skiing	18.0	18.9	16.8	18.3	16.9	16.9	.529	.715
Number of years of involvement	8.9	10.5	5.2	9.1	10.6	9.51	1.392	.239

H_o: $u_1 \neq u_2 \neq u_3 \neq u_4 \neq u_5$
H_a: H_o false
Reject if: $\alpha \leq .05$

association between segment membership and two participation variables both of which deal with when respondents accomplish a majority of their skiing--on overnite or day trips; on weekends or weekdays. The analyses of variances disclosed significant differences among segments on five of the nine intervally scaled participation variables including (1) number of days skied, (2) amount usually paid for a daily lift ticket while on an overnight or weekend ski trip, (3) maximum willing to pay for a daily lift ticket while on an overnight or weekend ski trip, (4) maximum number of hours willing to drive (one way) for an overnight or weekend ski trip, and (5) number of hours driven, one way, to reach a ski area for an overnight or weekend trip. Examination of the distributional breakdowns of the five segments also resulted in the formation of the following participation profiles:

> Individuals comprising the Quality Conscious Segment skied significantly more days on the average, 18.7 days, than other skiers. A higher proportion, 45.2 percent, of this segment did a majority of their skiing while on overnight trips than members of any other segment. Skiers comprising this segment visited significantly more areas on the average and accomplished less of their skiing at

one area. A higher percent, 45.2 percent, of the members of this segment took a ski vacation than any other segment. "Quality Conscious" skiers pay significantly more, on the average for a daily lift ticket--$9.80--and are willing to pay more than other skiers--up to $14.10.

Members of the Crowding Conscious Segment skied less days on the average during the 1976-1977 season than other skiers. Over a third or 35.4 percent of the skiers comprising the segment took a ski vacation which lasted an average of 5.5 days. A higher proportion, 81.5 percent, of the skiers comprising this segment own all their equipment. Finally, members of this segment picked up skiing at an older average age, 18.9 years.

Individuals comprising the Price Conscious Segment skied an average of 11.6 days during the 1976-1977 season. Eighty-one percent of the members skied most during day trips as opposed to overnight trips. A smaller proportion, 20 percent, of this segment took a ski vacation than any other segment.

Concern for the price of lift tickets is reflected in the fact that individuals comprising this segment pay less--$9.00--and are willing to pay less--$10.90--on the average for a daily lift ticket than other skiers. Skiers of this segment picked up the sport at a younger average age than skiers of the other four segments.

Members of the Strictly Skiing Conscious Segment skied on the average of 10.2 days during the 1976-1977 ski season. Nearly half, 48.9 percent, accomplished a majority of their skiing on weekdays which is a higher proportion than any other segment. A relatively high percent, 29.8 percent, of the member skiers rent all or part of the equipment needed to downhill ski.

Individuals comprising the Distance Conscious Segment skied on the average of 11.3 days during the 1976-1977 season. "Distance Conscious" skiers visited fewer areas and did proportionately more of their skiing at one area than skiers in any of the other segments. Concern for travel distance is reflected in the fact that individuals

comprising this segment generally drive significantly fewer hours--2.7 hours--on the average and are willing to travel less--4.8 hours--to reach a ski area for an overnight or weekend trip than other skiers. A higher proportion, 34.3 percent, of this segment rent a portion or all of their equipment. Finally, members of this segment have been skiing a greater length of time--10.6 years--on the average than other skiers.

These profiles provide ski area managers with information which will be useful both in selecting target markets from among the five segments and designing product offerings to attract them. A summary and discussion of the implication of these and other findings presented in this chapter is the subject of Chapter Six.

C H A P T E R V I

SUMMARY, IMPLICATIONS AND RECOMMENDATIONS

This study was designed with two main purposes in mind; first, to provide ski area managers with a multi-dimensional overview of the current downhill ski market in Michigan; second, to apply and evaluate two different approaches to segmenting this market--heavy half and attributes sought segmentation. Chapter One provides information on both the "demand" and "supply" sides of the downhill ski market in Michigan. The concept of market segmentation is introduced along with a discussion of the practical problems associated with segmenting markets. Also presented in this chapter are the objectives and hypotheses which guided the course of the study. Chapter Two reviews literature dealing with the subject of market segmentation. Topics covered include market segmentation theory, different approaches to segmenting markets, and the findings of empirical segmentation studies. Chapter Three presents an overview of the research methods employed in the data collection phase of the study. The fourth chapter reports on the general findings of both the telephone survey and mail questionnaire which were administered to active skier

respondents. It provides information on the socioeconomic and participation characteristics of active skiers as well as their preferences for different ski area attributes. Chapter Five reports on the findings of both the heavy half and attributes sought segmentation analysis.

This the sixth and final chapter is divided into two major sections. The first section includes a summary of the heavy half segmentation findings, a discussion of the implications these findings have for marketing, and recommendations as to how heavy half segmentation can be made more effective. The second section is also divided into three parts. The first part summarizes the attributes sought segmentation findings. The next part concerns the role that these findings can play in developing more effective marketing strategies. The third and last part discusses the limitations inherent in the methodology used to derive the attributes sought segment along with recommendations as to how it can be improved.

HEAVY HALF SEGMENTATION ANALYSIS: SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

Objective one of this study was to apply and evaluate heavy half segmentation as a means of segmenting the downhill ski market in Michigan. From this objective the

following three subobjectives were formed: (1) determine if skiers comprising the heavy half segment can be distinguished from light skiers on the basis of socioeconomic characteristics, (2) determine if skiers comprising the heavy half segment differ from light half skiers on the basis of participation characteristics/habits, and (3) determine if skiers comprising the heavy half segment differ from light half skiers with respect to the importance they place on various ski area attributes.

The empirical analysis which was designed to achieve the aforementioned objectives consisted of (1) dividing active skier respondents into heavy and light halves on the basis of the number of days they skied during the 1976-1977 season, and (2) comparing heavy and light half skiers on socioeconomic and participation characteristics and the importance they assign various ski area attributes. The findings of these analyses are summarized in the first part of this section.

Summary of the Heavy Half Segmentation Analysis

The heavy half segment consists of active skiers who skied eight or more days during the 1976-1977 season; skiers who engaged in seven or fewer days of downhill skiing comprised the light half. The heavy half skiers

accounted for 83 percent of the total number of days skied by active skier respondents--nearly five times as many days as the light half segment.

Comparative analyses revealed no significant differences between heavy and light half skiers on socioeconomic characteristics. Heavy and light half skiers have virtually indistinguishable socioeconomic profiles. Further analysis revealed few significant/exploitable differences between heavy and light half skiers regarding the importance they assign various ski area attributes. The exceptions being that heavy half skiers place more importance on whether a ski area affords them the opportunity to ski steep runs and moguled slopes. Light half skiers assign more importance to the degree of crowding they may encounter and whether an area offers a range of slopes with varying degrees of difficulty.

The analysis did reveal a number of significant and potentially exploitable differences between heavy and light skiers on participation characteristics/habits. Not only did heavy half skiers average more days of skiing but they also took more and longer ski vacations. The findings also disclose that heavy half skiers visited significantly more ski areas and did significantly less of their skiing at any one area. Heavy half skiers also pay

more for daily lift tickets and travel greater distances to reach ski areas (while on overnight or weekend ski trips) than light half skiers. In addition, skiers comprising the heavy half are generally more highly skilled than their light half countertypes. Finally, the findings disclose that heavy half skiers are more likely to belong to a ski club and own all their equipment than members of the light half. The implications of heavy half segmentation findings have for designing marketing strategies will be discussed in the next part of this section.

Implications of Heavy Half Segmentation Findings for Developing Ski Area Marketing Strategies

In a recent article published in Ski Area Management (Greenberg, 1978, p. 3), the author maintains that the best target for ski areas is, "one of the 3.6 million serious skiers who ski six or more days a year." The findings of this study corroborate Greenberg's assertion that "serious" or heavy half skiers are the ski industry's most valuable customers. Heavy half skiers ski more days, take more and longer ski vacations, and pay more for daily lift tickets than do light half skiers. Hence, focusing effort on the heavy half is a logical first consideration when designing marketing strategies for downhill ski areas. However, targeting marketing effort

toward the heavy half skier is a formidable task.

Two major obstacles confront ski areas in their efforts to develop marketing strategies aimed at attracting heavy half skiers. First, the fact that there is little meaningful difference between heavy and light half skiers in the importance they assign to various ski area attributes makes it exceedingly difficult to design products and promotional messages that will differentially attract the heavy half. In addition, heavy half skiers are not likely to be equally good prospects for any one type of ski area since they differ among themselves with respect to what they prefer in a ski area. Second, the inability to distinguish between heavy and light half skiers on socioeconomic characteristics makes it difficult to identify promotional vehicles which will effectively reach heavy half skiers. Instead, ski areas must direct their promotion at the whole market, which increases promotional waste.

These two obstacles, coupled with the fact that heavy half skiers tend to be less loyal than light half skiers--they ski more areas and do less of their skiing at any one area--raise questions regarding the ability of Michigan's ski areas to differentially attract heavy half or "serious" skiers. It also raises questions as to the value of heavy half segmentation findings in ski area

marketing

The inability to discriminate between heavy and light half skiers on either their preference patterns or socioeconomic characteristics will complicate efforts aimed at attracting the heavy half segment. However, the findings did reveal some significant and potentially exploitable differences between heavy and light half skiers with respect to their participation characteristics/habits. Heavy half skiers are, on the average, more highly skilled and place greater importance on whether an area offers slopes designed for the more skillful skiers. This suggests that ski areas may be more successful in attracting heavy half skiers if they provide slopes which will challenge skiers with higher than average skills. Promotional messages could also be designed with the purpose of attracting the more highly skilled skier. For example, "Ski Mt. Himilaya where the challenge of steep runs and moguled slopes awaits you." In addition findings showing that heavy half skiers are more likely to own all their equipment and belong to a ski club suggest that ski areas may effectively reach heavy half skiers by distributing their promotional brochures through ski clubs, equipment dealers and at ski shows (La Page, 1968, p. 3). Ski areas might also be more successful in attracting heavy half skiers if they allocate more of their promotional dollars to on site promotion.

Although the above suggestions may increase the

likelihood of drawing heavy half skiers, the fact that heavy and light half skiers differ little in terms of their socioeconomic characteristics or preferences remains as a serious obstacle to efforts aimed at attracting heavy half skiers. The next part of this section will discuss possible ways heavy half segmentation findings can be made more actionable.

Recommendations for Future Heavy Half Segmentation Research

There are several ways heavy half segmentation can be made more effective in terms of producing exploitable marketing information. First, in future heavy half segmentation studies, information should be gathered on the media habits and informational sources used by skiers when deciding upon which ski areas to visit. This information would aid in selecting the blend of promotional media which would have the greatest exposure to heavy half skiers. This may, in part, overcome the problems related to the inability to distinguish between heavy and light half skiers on socioeconomic characteristics.

Second, researchers should give consideration to alternative schemes of segmenting the market based on purchase rate. It may not be the top fifty percent but the top ten percent of skiers that represent the most valuable and exploitable segment of the downhill ski market.

Finally, researchers should also consider using a two-step segmentation process which blends heavy half and attributes sought segmentation. Skiers could first be aggregated into heavy and light halves much in the same way it was accomplished in this study. Then, attributes sought segmentation could be performed on the heavy half segment. This approach would yield groups/segments of heavy half skiers who share similar aspirations with respect to what they desire in a ski area. Of course, this approach would require a much larger sample size than was used in this study but the additional insight gained would place managers in a much better position to design ski areas likely to attract heavy half skiers.

The next section is devoted to a discussion of the attributes sought segmentation analysis--a summary of its findings, a discussion and recommendations for improving attributes sought segmentation methodology.

THE ATTRIBUTES SOUGHT SEGEMENTATION ANALYSIS: SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

The second major objective of this study was to apply and evaluate attributes sought segmentation as a means of segmenting the downhill ski market in Michigan. This objective was comprised of three more specific

subobjectives: (1) determine if skiers can be aggregated into market segments on the basis of the relative importance they attach different ski area attributes when selecting which ski areas to visit; (2) if attributes sought segments can be derived, develop socioeconomic profiles of their memberships; and (3) if attributes sought segments can be derived, develop participation characteristic profiles of their memberships. The first part of this section will summarize the findings of the attributes sought segmentation analysis.

Summary of the Attributes Sought Segmentation Analysis

The first step in the attributes sought segmentation analysis was to group skiers into attributes sought segments. A nonhierarchical clustering technique was employed to aggregate skiers into segments on the basis of the importance they assigned seven ski area attributes: (1) after ski entertainment, (2) lodging facilities, (3) restaurant facilities, (4) amount of crowding at lift lines, (5) slope quality, (6) price of lift tickets, and (7) driving distance from home to the area. The cluster analysis resulted in the identification of five relatively distinct attributes sought segments. Based on the principal attribute sought by its membership, each segment was assigned a descriptive label. They are as follows:

A Quality Conscious Segment, A Crowding Conscious Segment, A Price Conscious Segment, A Strictly Skiing Conscious Segment, and A Travel Conscious Segment.

The second step in the analysis was aimed at obtaining a more precise specification of what members of the five segments look for in a ski area. This was achieved by comparing the five segments on the mean importance rankings assigned various slope attributes, entertainment options and dining styles. The findings revealed significant differences among the segments with respect to the importance assigned three of the seven slope attributes examined--uncrowded slopes, lighted slopes for night skiing, steep slopes--and one of the dining styles--sit-down dining. No statistically significant differences were found among segments on the importance assigned the six entertainment options which were examined.

The next step was intended to determine whether skiers comprising the different attributes sought segments differed with respect to their socioeconomic characteristics. Six socioeconomic variables were examined for association with segment membership. The findings disclosed statistically significant associations between segment membership and marital status, and income. Some interesting, but not statistically significant associations

were found to exist between segment membership and four of the six socioeconomic variables--sex, family status, age and occupation.

The last step in the analysis was aimed at finding out whether members of the different attributes sought segments differed with regard to their participation characteristics. Fifteen different participation characteristics were examined. The analysis revealed significant differences among segments on seven of the fifteen characteristics including (1) number of days skied, (2) amount usually paid for a daily lift ticket while on an overnight or weekend ski trip, (3) maximum willing to pay for a daily lift ticket while on an overnight or weekend ski trip, (4) number of hours driven one way to reach a ski area for an overnight or weekend ski trip, and (5) maximum number of hours willing to drive (one way) to reach a ski area for an overnight or weekend ski trip.

The findings from each step in the analysis were used to formulate attributes sought, socioeconomic, and participation characteristic profiles for each of the five segments. Excerpts from these profiles served as the basis for the following characterizations.

The Quality Conscious Segment is particularly concerned with slope quality, lodging facilities and

restaurant offerings. It includes a high proportion of women and single people. Members of this segment ski significantly more days, take more and longer ski vacations, and pay more and are willing to pay significantly more for daily lift tickets than other skiers. They also visit more areas and do less of their skiing at any one area. A high percentage of this segment are either advanced or expert skiers. The Quality Conscious Segment contains 16.1 percent of the downhill skiers.

The Crowding Conscious Segment shows significantly more concern for the degree of crowding they encounter at lift lines and on the ski slopes. It contains a higher proportion of women and married skiers. Crowding Conscious skiers skied less days than average. A disproportionately large number of beginner and intermediate skiers are found in this segment. This is the largest of the five segments comprising 33.7 percent of the market.

The Price Conscious Segment comprises 7.7 percent of the market. It contains a higher proportion of young skiers and single people. The largest proportion of students can be found in this segment. Price Conscious skiers assign more importance to lift ticket price as a selection criteria than other skiers. They pay less and are willing to pay less for daily lift tickets. In

addition, members of this segment are more concerned with entertainment offerings than other skiers.

The Strictly Skiing Conscious Segment is seriously concerned with the quality of ski slopes. They also attach major importance to the price charged for lift tickets and the degree of crowding encountered at lift lines. A higher proportion of males, blue collar workers, and housewives are found in this segment than in any other segment. Almost a quarter of all downhill skiers, 24.4 percent, are contained in this segment.

The Travel Conscious Segment is comprised of persons who are especially concerned with the distance they must travel to reach a ski area. Skiers contained in this segment drive fewer hours and are willing to drive fewer hours to reach a ski area than other skiers. They visit fewer areas and do more of their skiing at one area. A higher proportion of this segment rent all or part of the equipment needed to downhill ski. This segment contains 18.1 percent of the downhill skiers.

This part of the section has summarized the findings of the attributes sought segmentation analysis. The next part will discuss the uses and implications of these findings.

Implications of Attributes Sought Segmentation Findings for Developing Ski Area Marketing Strategies

A number of implications can be drawn from and uses made of the findings of the attributes sought segmentation analysis; the primary managerial implication being that downhill skiers in Michigan are quite heterogeneous with respect to the criteria they employ when selecting which ski areas to patronize--there is no "average skier." In addition, attributes sought segmentation can be used to identify segments that (1) have adequate sales potential, (2) differ with respect to what they seek in a ski area, and (3) can be distinguished on the basis of their socioeconomic and participation characteristics and, therefore, have value in designing marketing strategies. The findings further imply that the segments differ to the extent that it is unlikely that they are all equally good prospects for any one type of ski area. Members of the Price Conscious Segment are not apt to be as good prospects for a high priced resort type ski area as skiers comprising the Quality Conscious Segment. Therefore, it is improbable that any one ski area can effectively satisfy the preferences of skiers comprising all five attributes sought segments.

The most important test of the managerial usefulness of a segmentation analysis is whether or not the

understanding gained about customers can be used to design more satisfying products. In this regard, attributes sought segmentation provides a fresh and insightful view of the downhill ski market in Michigan. Unlike segmentation based on either socioeconomic variables or purchase rate, attributes sought segmentation provides managers with an understanding of the motivations which lead skiers to patronize some ski areas and ignore others. The insight gained places management in a better position to design ski areas and promotional messages that more closely match the desires of those skiers they wish to attract. By matching their ski area against the attributes sought by skiers comprising different attributes sought segments, managers can learn what changes need to be made to attract them.

The manager who observes that his ski area does not coincide with the preferences of a segment he wishes to attract has three general strategies available to him. First, he can attempt to reposition his area in closer proximity to the preferences of the segment(s) he desires to draw by making actual changes in the physical attributes of the area. For example, a manager attempting to attract the Crowding Conscious Segment should take all possible steps to reduce crowding both at the lift

lines and on the ski slopes. This could be accomplished, among other ways, by (1) limiting the number of skiers permitted to ski at any one time, (2) opening additional ski runs and increasing lift capacity, (3) charging higher lift ticket prices, and/or (4) developing more effective differential pricing schemes.

In addition to the preference data, the information generated on the participation characteristics/habits of skiers will also assist managers in repositioning their areas. To illustrate, it was disclosed that over a third, 34.3 percent, of the skiers comprising the Strictly Skiing Conscious Segment rent all or a part of the equipment needed for downhill skiing. This suggests that a ski area interested in attracting this segment should offer a reasonably priced, high quality, rental service as part of their overall offering. Likewise, a manager attempting to attract Quality Conscious skiers might provide opportunities to ski slopes which will challenge advanced and expert skiers since they comprise almost half, 48.4 percent of this segment.

Second, ski area managers may also be able to reposition their areas closer to a particular segment they wish to attract through specially designed promotional appeals--without actually changing the physical characteristics of the area. An understanding of the attributes

sought by skiers comprising different segments will permit managers to devise promotional appeals that present their area in the most favorable light possible with respect to the skiers they are attempting to draw. For example, a manager who wishes to attract the Quality Conscious Segment might develop promotional messages which emphasize the quality of his area's ski slopes, restaurant offerings and lodging facilities.

Information dealing with the participation characteristics of skiers will also be useful in designing promotional appeals aimed at repositioning products. For instance, the findings disclosed that Quality Conscious skiers take significantly more and longer vacations, on the average, than other skiers. This suggests that managers may be more effective in attracting Quality Conscious skiers if their promotional messages also emphasize the vacation opportunities their area can afford skiers.

Not only did this study result in findings which will be useful in designing promotional campaigns, but also information which will assist in the selection of promotional medias. By matching the socioeconomic profiles of the market segments they wish to attract against the audience characteristics of different promotional media, managers will be in a better position to identify

those media which will help reduce promotional waste caused by excess exposure.

Finally managers can, instead of repositioning their ski areas, attempt to alter the values skiers attach to various ski area attributes. That is, reeducate skiers by telling them what they should be looking for in a ski area. For example, assume that a manager wants to attract the Distance Conscious Segment, however, his area is located further away from a majority of skiers comprising this segment than they are normally willing to travel. Seeing that it is infeasible to relocate his area closer to skiers, he might instead try to convince them--through promotional messages--that what his area has to offer is worth the additional travel. To illustrate, "Ski Mt. Himilaya. Its quality slopes and uncrowded conditions make it well worth the trip" or "Why ski crowded areas charging high lift ticket prices when by traveling a little further, you can ski Mt. Himilaya."

Prior to selecting which attributes sought segment(s) to pursue, a ski area manager should first assess the quality/profitability of each segment. A number of factors must be weighed as part of this assessment. They include (1) the cost of developing and operating the type of ski area which matches the preferences of the different segments, (2) the number and strength of ski areas competing

for the different segments (3) the compatability of different segments, (4) the percent of the segment the area can reasonably expect to attract, and (5) the revenues which can be expected at various levels of investment.

In addition to generating facts which will be useful in designing products and promotional messages, this study has provided data which will aid managers in assessing the profitability of the different attributes sought segments. This data includes (1) the size of each attributes sought segment in terms of percentage of the overall market, (2) the average number of days skied by persons comprising the different segments, (3) the degree of loyalty exhibited by skiers in each segment, and (4) the average amount skiers pay and are willing to pay for a daily lift ticket.

To summarize, this part of the chapter has briefly touched on some of the implications of the attributes sought segmentation as well as some of the uses ski area managers can make of the findings. These uses include (1) assessing the profitability of the different segments, (2) designing products that more closely match the preferences of skiers comprising the different segments, (3) formulating promotional messages aimed at attracting particular segments. The next and final part of this section is devoted to a discussion of some of the

limitations of the methodology used to derive the attributes sought segments along with recommendations as to how they might be overcome in future studies.

Recommendations for Future Attributes Sought Segmentation Research

This study provides evidence which indicates that attributes sought segmentation can be employed to identify segments that are substantial, exploitable and reachable. However, as with any empirical research effort, there were important limitations/weaknesses to the methodology which was employed in this study. Many conceptual and computational problems must be resolved to make attributes sought segmentation more effective and relevant. The most important of these problems will be discussed in this part of the chapter along with suggestions as to how they may be overcome.

One of the major problems encountered in setting up the study was the dearth of information regarding the important attributes by which skiers fashion their preferences and discriminate among ski areas. To the author's knowledge, no definitive work has yet been published regarding the attributes skiers consider most important when selecting which they will patronize. As a consequence, the selection and specification of attributes may be the weakest component in the attributes sought segmentation analysis.

Although the attributes which were used to aggregate skiers into market segments were derived from a survey of active skiers, some significant attributes may have been left out while some, which were included, may be inconsequential in the decision process used by a majority of the state's downhill skiers. If such is the case, the value of the attributes sought segmentation findings for designing marketing strategies is greatly reduced.

Substantial research effort needs to be directed at identifying ski area attributes that are important to skiers and operationally significant from the standpoint that ski area managers can relate them to controllable product and promotional variables. Unstructured, indepth interviews with downhill skiers and people involved in ski area management is one possible way to approach the problem of attribute identification.

Another major limitation was the inability to statistically assess the reliability of the clusters which were formulated. No fully defensible procedure is available to test the statistical reliability of clusters which result from the application of clustering algorithms (Green and Tull, 1975). This is a major problem since clustering techniques have the tendency to capitalize on specific characteristics of a sample, often leading to results

that are not stable over the replication of the same technique or over different techniques (Green and Tull, 1975).

In recognition of this problem researchers undertaking attributes sought segmentation analyses in the future should employ samples large enough to allow for "split half analysis." The reliability of clusters can be checked by splitting a sample in half and performing separate clusterings on each half using the same clustering algorithm. If the data are well clustered similar results will be obtained across sub-samples. However, if a sufficient sample cannot be obtained, researchers can check reliability by applying different clustering algorithms on the same sample and then comparing the results across algorithms. Again, similar clusters should be obtained if the data are well clustered. The use of either of the above approaches provides some assurance against arriving at purely spurious clusters.

Another major weakness in the study was the method used to elicit importance weights for the various ski area attributes. The paired comparison approach does not explicitly consider the possible interaction effects among attributes nor the tradeoffs skiers are willing to make regarding different attributes. For example, skiers comprising the Price Conscious Segment may be willing

to pay more than they are normally accustomed to paying for a daily lift ticket if an area offers high quality slopes and a wide variety of entertainment alternatives.

One promising approach to dealing with the possibility of interaction effects is "benefit/attribute bundle analysis." (Green et. al., 1972, p. 372) This approach entails having consumers rank different bundles/collections of attributes. For example, skiers might be asked to rank, in order of their preference, a number of ski areas having different attribute profiles. One area might charge high lift ticket prices but offer high quality slopes, restaurants, and lodging. Another might charge significantly lower lift ticket prices but have lower quality slopes, restaurants and lodging. Using conjoint measurement, it is possible to measure the separate or part worth of each attribute comprising the different bundles. The overall preference rankings which result can then be used to aggregate skiers into attributes sought segments. Since ski areas are multi-attribute in nature, it would make more sense to use a technique such as attribute bundle analysis which permits simultaneous measurement of the individual and joint effects of different attributes.

In addition to the above recommendations, it would

be useful to develop a function for assigning new skiers--those not included in the original sample--to attributes sought segments. This may be accomplished by combining discriminant analysis procedures with cluster analysis. A"multiple group" discriminant function could be developed using socioeconomic and participation characteristics as predictors and cluster membership as the dependent variable. If a reliable function could be derived, it would then be possible to assign skiers to attributes sought segments without having information regarding their preferences for various ski area attributes.[55]

Finally, in recognition of the fact that the downhill ski market is constantly changing it is recommended that a continuous panel study be used in conjunction with future attributes sought segmentation analyses. Resurveying the original sample of skiers at regular intervals would generate a continuous set of data regarding their preferences for various ski area attributes. Performing attributes sought segmentation analyses on this

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[55]The reliability of discriminant functions can be checked through a "split half" analysis. The discriminant function is first developed using one half of the sample and then it's reliability is checked by applying the function to the other half and observing the number of times it assigns skiers to the correct segments.

data would be useful in detecting trends and shifts in the preference structure of the market and provide a means of assessing the stability of attributes sought segments over time.

In conclusion, this study has been successful in accomplishing its objectives. Both heavy half and attributes sought segmentation analyses were performed and evaluated in terms of their value for developing marketing strategies. It can be said that through this study, a more complete knowledge of the current downhill ski market has been gained. Ski area managers have been provided with important information which can be useful in designing their future marketing strategies.

SELECTED BIBLIOGRAPHY

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BOOKS

Arndt, Johan. Market Segmentation. Oslo: Norwegian School of Economics and Business Administration, 1974.

Babbie, Earl R. Survey Research Methods. Belmont, California: Wadsworth Publishing Company, Inc., 1973.

Bell, Martin L. Marketing: Concepts and Strategies. 2d ed. Boston: Houghton Mifflin Co., 1972.

Brigham, Eugene, and Pappas, James L. Managerial Economics. Hinsdale, Illinois: Dryden Press Inc., 1972.

Cichetti, C. Forecasting Recreation in the U.S. Lexington, Massachusetts: D.C. Heath and Company, 1973.

Cravens, David; Hills, Gerald; and Woodruff, Robert. Marketing Decision Making: Concepts and Strategies. Homewood, Illinois: Richard D. Irwin, Inc., 1976.

Drucker, Peter. Management: Tasks, Responsibilities and Practices. New York: Harper and Row Publishers, 1974.

Drucker, Peter. The Age of Discontinuity. New York: Harper and Row Publishers, 1969.

Engel, James F.; Fiorillo, Henery; and Cayley, Murray A. (eds.). Market Segmentation: Concepts and Applications. New York: Holt, Rinehart and Winston, Inc., 1972.

Gonzalez-Arce, Jorge F. Market Segmentation by Customer Perception: A Case Study in Mexico. East Lansing, Michigan: Graduate School of Business, Michigan State University, 1975.

Green, Paul E., and Tull, Donald S. Research for Marketing Decisions. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1975.

Kelly, Eugene. "Marketing Planning for the Firm" in Managerial Marketing. Edited by Eugene Kelly and William Lazer. Homewood, Illinois: Richard D. Irwin, Inc., 1973.

Kelly, Eugene, and Lazer, William (eds.). Social Marketing. Homewood, Illinois: Richard D. Irwin, Inc., 1973.

Kelly, Eugene, and Lazer William (eds.). Managerial Marketing. Homewood, Illinois: Richard D. Irwin, Inc., 1973.

Kotler, Philip. Marketing for Non-Profit Organizations. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1975.

Kotler, Philip. Marketing Management. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1976.

Lessig, V.P. Personal Characteristics and Consumer Buying Behavior. Washington State University Press, 1971.

McCarthy, E. Jerome. Basic Marketing. Homewood, Illinois: Richard D. Irwin, Inc., 1975.

Nie, Norman H.; Hull, C.; Hadlai, Jenkins; Jean, G.; Steinbrenner, Karin; and Bent, Dale H. Statistical Package for the Social Sciences. New York: McGraw-Hill Book Company, 1975.

Oxenfeldt, Alfred R. "The Formulation of a Market Strategy" in Managerial Marketing. Edited by Eugene Kelly and William Lazer. Homewood, Illinois: Richard D. Irwin, Inc., 1973.

Robinson, Joan. The Economics of Imperfect Competition. London: MacMillan and Co., 1954.

Seibert, Joseph. Concepts of Marketing Management. New York: Harper and Row, 1973.

Stell, Robert G. and Torrie, James H. Principles and Procedures of Statistics. New York: McGraw-Hill Book Company, 1960.

Taylor, Jack and Robb, James. Fundamentals of Marketing: Additional Dimensions. New York: McGraw-Hill Book Company, 1975.

Wentz, Walter B. Marketing Research Management and Methods. New York: Harper and Row, 1972.

ARTICLES AND PERIODICALS

Assael Henry, and Roscoe, Sr., Marvin. "Approaches to Market Segmentation Analysis," Journal of Marketing Research, XIII (October 1976), 67-76.

Barker, Stephen, and Trost, John E. "Cultivate the High Volume Consumer," Harvard Business Review, XXV (March-April 1973), 118-122.

Barnett, Norman L. "Beyond Market Segmentation," Harvard Business Review, XLVII (January-February 1969), 152-156.

Bass, Frank M., and Tigert, Douglas S. "Market Segmentation: Group Versus Individual Behavior," Journal of Marketing Research, V (August 1968), 264-270.

Baumwoll, Joel P. "Segmentation Research - The Baker Vs. the Cookie Maker," Journal of Marketing, XXXIIX (December 1974), 14-20.

Bell, J.E.F. "Mobiles - A Neglected Market Segment," Journal of Marketing, XXXIII (April 1969), 37-44.

Bowman, B.F., and McCormick, F.E. "Market Segmentation and Marketing Mixes," Journal of Marketing, XXV (January 1961), 25-29.

Bradley, M.E., and Terry, R.R. "Rank Analysis of Incomplete Block Designs: The Method of Paired Comparisons," Biometrika, XXXIX (1952), 324-345.

Brandt, Steven C. "Dissecting the Segmentation Syndrome," Journal of Marketing, XXX (October 1966), 22-27.

Brown, G.N. "Brand Loyalty - Fact or Fiction?," Advertising Age, (June 1952), 53-55.

Burdge, W.R., and Field, D.R. "Methodological Perspective for the Study of Outdoor Recreation," Journal of Leisure Research, I, No. 4 (1972), 63-72.

Claycamp, Henry J., and Massy, William F. "A Theory of Market Segmentation," Journal of Marketing Research, V (November 1968), 388-394.

Cohen, Louis. "Use of Paired Comparison Analysis to Increase Statistical Power of Ranked Data," Journal of Marketing Research, IV (August 1967), 309-311.

Crissy, J.E.; Fischer, Paul; and Mossman, Frank. "Segmentation Analysis: Key to Marketing Profitability," M.S.U. Business Topics, XXI (Spring 1973), 43-49.

Cunningham, Ross. "Brand Loyalty - What, Where, How Much," Harvard Business Review, XXXIV (January-February, 1956), 116-128.

Day, George S., and Heeler, Roger M. "Using Cluster Analysis to Improve Marketing Experiments," Journal of Marketing Research, VIII (August 1971), 340-347.

Day, Ralph L. "Preference Tests and the Management of Product Features," Journal of Marketing, XXXII (July 1968), 24-29.

Day, Ralph L. "Systematic Paired Comparison in Preference Analysis," Journal of Marketing Research, II (November 1965), 406-412.

Dhalla, Nariman K., and Mahatoo, Winston K. "Expanding the Scope of Segmentation Research," Journal of Marketing XL (April 1976), 34-41.

Farley, John. "Brand Loyalty and the Economics of Information," Journal of Business, XXXVII (October 1964), 370-831.

Ferber, R. "Brand Choice and Social Stratification," Quarterly Review of Economic and Business, II (February 1962), 71-78.

Frank, R.E. "Is Brand Loyalty a Useful Basis for Market Segmentation?," Journal of Advertising Research, XII (June 1967), 27-33.

Frank, Ronald E., and Boyd, Harper. "Are Private-Brand-Prone Food Customers Really Different?," Journal of Advertising Research, V (December 1975), 27-35.

Frank, Ronald E., and Green Paul E. "Numerical Taxonomy in Marketing Analysis: A Review Article," Journal of Marketing Research, V (February 1968), 83-98.

Frank, Ronald E.; Massy, Frank; and Boyd, Harper. "Correlates of Grocery Product Consumption Rates," Journal of Marketing Research, IV (May 1967), 184-190.

Garfincle, N. "A Marketing Approach to Media Selection," Journal of Advertising Research, III (December 1963), 7-15.

Green, Paul E.; Wind, Yoram; and Jain, Aron K. "Benefit Bundle Analysis," Journal of Advertising Research, XII (April 1972), 31-35.

Green, Paul E.; Wind, Yoram; and Jain, Aron K. "Preference Measurement of Item Collection," Journal of Marketing Research, IX (November 1972), 371-377.

Greenberg, Al. "We're Bigger Than We Thought," Ski Area Management, Vol. XVII (Summer 1978), 32-48.

Gum, Russel L., and Martin, William E. "Structure of Demand for Outdoor Recreation," Land Economics, LIII (February 1977), 43-55.

Haley, Russel I. "Benefit Segmentation: A Decision Oriented Research Tool," Journal of Marketing, Vol. XXXII (July 1968), 30-35.

Hisrich, Robert D., and Peters, Michael P. "Selecting the Superior Segmentation Correlate," Journal of Marketing, XXXIIX (July 1974), 60-63.

Johnson, Stephen C. "Hierarchical Clustering Schemes," Psychometrica, XXXII (September 1976), 241-254.

Johnson, Richard M. "Market Segmentation: A Strategic Management Tool," Journal of Marketing Research, IIX (February 1971), 13-18.

Koponen, Arthur. "Personality Characteristics of Purchasers," Journal of Advertising Research, I (September 1960), 6-12.

Lansing, J.B., and Morgan, L. "Family Life Cycle as an Independent Variable," American Sociological Review, XXII (October 1957), 512-519.

Lapage, W.F., and Ragan, D.D. "Family Camping-An Eight Year Panel Study," Journal of Leisure Research, VI, No. 2 (1974), 101-112.

Levitt, Theodore. "Marketing Myopia," Harvard Business Review, XXXIIX (July-August 1966), 55-60.

Mainer, Robert, and Slayter, Charles C. "Markets in Motion," Harvard Business Review, XLII (March-April 1964), 75-82.

McCann, John. "Market Segmentation Response to Marketing Decision Variables," Journal of Marketing Research, II (November 1974), 339-347.

O'Dell, William F. "Theory or Research for the Marketing Decision-Maker?," Journal of Marketing, XXX (April 1966), 52-55.

Olsen, Robert M. "The Strategy of Market Segmentation," Kansas Business Review, XXII (September 1968), 65-72.

Plummer, Joseph T. "The Concept and Application of Lifestyle Segmentation," Journal of Marketing, XXXIIX (January 1974), 33-37.

Reynolds, W.H. "More Sense About Market Segmentation," Harvard Business Review, XLIII, No. 5 (September-October 1965), 107-114.

Rich, S.U., and Jain, Subastian C. "Social Class and Life Cycle as Predictors of Shopping Behavior," Journal of Marketing Research, (January 1968), 41-49.

Ritchie, J.R. "On the Derivation of Leisure Activity Types-A Perceptual Mapping Approach," Journal of Leisure Research, VII, No. 2 (1975), 128-140.

Roberts, A.A. "Applying the Strategy of Market Segmentation," Business Horizons, IV (Fall 1971), 65-72.

Romsa, Gerald H., and Girling Sydney. "The Identification of Outdoor Recreation Market Segments on the Basis of Frequency of Participation," Journal of Leisure Research, IIX, No. 4 (1976), 247-255.

Sissors, Jack Z. "What Is a Market?," Journal of Marketing, XXX (July 1966), 17-21.

Smith, Wendell R. "Product Differentiation and Market Segmentation as Alternative Marketing Strategies," Journal of Marketing, XIX (July 1956), 3-8.

Tatham, Ronald L., and Dornoff, Ronald J. "Market Segmentation for Outdoor Recreation," Journal of Leisure Research, III, No. 1 (1971), 5-16.

Tucker, W.T. "Future Decisions in Marketing Theory," Journal of Marketing, XXXIIX (April 1974), 30-35.

Twedt, D.W. "How Important to Marketing Strategy Is the Heavy User?," Journal of Marketing, XXIIX (January 1964), 95-100.

Waldo, C. "What's Bothering Marketing Chiefs Most? Segmenting," Advertising Age, IV (June 1973), 77-78.

Weiner, Jack B. "Myth of the National Market," Dun's Review and Modern Industry, XXCIII (May 1964), 40-41.

Winberg, C.B. "Market Segmentation," European Journal of Marketing, VI (January 1972), 60-63.

Yankelovich, Daniel. "New Criteria for Market Segmentation," Harvard Business Review, XVI (January-February 1964), 83-90.

REPORTS

A.C. Nielson Company. 1976 Sports Participation Study. A Confidential Report for the U.S. Department of Agriculture. 1976.

Carman, J.M. "The Application of Social Class in Market Segmentation," Institute of Business and Economic Research, University of California, Berkley. 1965.

Cunningham, Ross. "Measurement of Brand Loyalty," The Marketing Revolution. New York: American Marketing Association. December 27-29, 1955.

Domoy, Francis M. Segmentation: A Strategy for Campground Marketing. Michigan State University Cooperative Extension Report. Bulletin Number E-913. East Lansing, Michigan. September, 1975.

Domoy, Francis M. An Employment Analysis of the Michigan Ski Industry. Michigan State Agricultural Experiment Station Report. Report Number 329. East Lansing, Michigan. March, 1977.

Dubes, Richard. The Cluster Program. Michigan State University Department of Computer Science Report. East Lansing, Michigan. June, 1974.

Ehrenberg, A.S., and Goodhardt, G.S. Decision Models and Descriptive Models in Marketing. Marketing Science Institute Working Paper. Marketing Science Institute. Report Number 76-117. Cambridge, Massachusetts. December, 1976.

Guitinan, Joseph, and Sawyer, Alan. Managerial Considerations for Market Segmentation Research. Combined Proceedings of the American Marketing Association. Spring, 1974.

Lapage, W.F. Campground Marketing: The Heavy-Half Strategy. U.S. Forest Service Research Note NE-93. 1968.

Lapage, W.F. The Role of Fees in Camper's Decisions. U.S. Forest Service Research Paper NE-118. 1968.

Lapage, W.F. The Role of Customer Satisfaction in Managing Commercial Campgrounds. U.S. Forest Service Research Paper NE-105. 1968.

Pessimer, Edgar. Market Structure Analysis of New Product Markets. Marketing Science Institute. Cambridge, Massachusetts. 1976.

Stynes, Daniel J.; Mahoney, Edward M., and Spotts, Daniel M. Michigan Downhill Skiing Marketing Study: A Comparison of Active, Inactive, Dropout and Potential Skier Market Segments. To appear as a Michigan State University Agriculture Experiment Station Report.

Ted Farwell and Associates, Inc. Skiing Demand and Supply Study for the Lower Peninsula of the State of Michigan. A Report Prepared for the U.S. Forest Service. March, 1977.

Tucker, Ledyard R. Dimensions of Preference. Educational Testing Service. Research Memorandum RM-60-7. Princeton, New Jersey. 1960.

Wilkie, William L. Market Segmentation Research: A Conceptual Analysis. Institute for Research in the Behavioral, Economic and Management Science, Purdue University. Institute Paper No. 324. 1971.

UNPUBLISHED MATERIAL

Wilkie, William. "An Emperical Analysis of Alternative Bases of Market Segmentation." Unpublished Ph.D. dissertation, Stanford University, 1970.

APPENDIX A

MARKETING AND MARKET SEGMENTATION STRATEGY

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MARKETING AND MARKET SEGMENTATION STRATEGY

The purpose of this appendix to the dissertation is to familiarize the reader with marketing concepts and terminology. The intent is not to present an abbreviated course in marketing, but rather supplement Chapter II and introduce the reader to key phraseology which will be encountered throughout this dissertation. In addition it is hoped that the information presented will assist readers in evaluating findings of the study based on their implication for maximizing effective and efficient marketing strategies for the Michigan downhill ski areas.

MARKETING

Many people hold a variety of misconceptions as to what marketing entails. The preconceived notion that marketing and selling are synonomous can account for a portion of these misguided interpretations. According to Levitt (1960, p. 45):

> "Selling focuses on the needs of the seller, marketing on the needs of the consumer. Selling is preoccupied with the seller's need to convert his product into cash. Marketing--the idea of satisfying the needs of the consumers by means of the product and the

> whole cluster of things associated with creating, delivering, and finally consuming it."

Drucker (1973, p. 64), also emphasized the strong difference between selling and marketing when he stated:

> "Indeed, selling and marketing are antithetical rather than synonymous functions. There will always, one can assume, be a need for selling. But the aim of marketing is to make selling superfluous. The aim of marketing is to know and understand the customer so that the product or service fits the customer's needs and sells itself. Ideally marketing should result in a customer that is ready to buy. All that should be needed is to make the product or service available."

The question is then, if not selling, what is marketing? Modern marketing is, in essence, a philosophy for doing business and is based on what has come to be known as the "marketing concept." According to Kotler (1976, p. 15) the marketing concept is:

> "A customer needs oriented action backed by integrated marketing effort aimed at generating consumer satisfaction as the key to satisfying organizational objectives."

According to the "marketing concept" as defined above, a business has two key functions: the identification of consumer needs and preferences, and the development of a product offering and supporting marketing strategy to match and satisfy those desires. Modern marketing management is predicated on these two functions.

A substantial number of definitions for marketing

management have been formulated based upon the consumer oriented philosophy dictated by the marketing concept. Kotler (1976, p. 7) incitefully composed one of the most comprehensive and operational definitions of marketing management . . .

> "The analysis, planning, implementation and control of carefully formulated programs designed to bring about desired exchanges with target markets for the purpose of achieving organizational objectives. It relies heavily on designing the organization's offering in terms of target market's needs, and desires, and on using effective pricing, communication and distribution to inform, motivate and service the markets."

Therefore, Kotler placed a great deal of emphasis on his suggestion that product offerings should be designed to satisfy designated target markets, as opposed to the total or mass marekt. Selection of specific sectors or segments of the market on which to focus and consequently serve is a fundamental component of the philosophy suggested by the marketing concept and is referred to in the literature as "market segmentation strategy" (Cravens, et. al., 1976, p. 11). This strategy will be discussed in greater depth in the proceeding section.

MARKET SEGMENTATION STRATEGY

Market segmentation as a strategy may be defined as the process of adjusting marketing strategy and tactics

to the needs and wants of relatively homogeneous target markets (Arndt, 1974, p. 18). It represents an attempt on the part of management to design and implement marketing strategies and tactics that will match the significant differences in the way various customer groups respond or can be reasonably expected to react to marketing mix offerings (Cravens, et. al., 1976, p. 241). The strategy is predicated on four assumptions: first, that every product market is comprised of distinguishable segments or consumer groups with distinctive needs, preferences, product uses and responsiveness to marketing mix offerings (Kotler, 1976, p. 56); second, that these different buyers can be identified and aggregated into relatively homogeneous and distinguishable market segments (Engel, Fiorillo, Cayley, 1972, p. 2); third, since customer preferences are not likely to be congruent, a single product offering will not be equally appealing or satisfying to the entire market (Oxenfeldt, 1973, p. 243); and fourth, that firms can increase both the effectiveness and efficiency of their marketing effort by designing product offerings to appeal to specific market segments (Baumwoll, 1974, p. 15).

Proponents of segmentation strategy are of the opinion that by selecting and serving a particular group of consumers, as opposed to catering to the entire market,

a firm narrows its marketing function to more operational and achievable objectives (Cravens, et. al., 1976, p. 11: Kotler, 1976, pp. 141-143). Tailoring products to match the needs of specific segments of the market results in product offerings with deeper appeal and a sharper product image. Tailored product offerings have a greater tendency to effect repeat purchase and brand loyalty than products with broad, but shallow appeal. In addition, by serving customer segments in a more precise manner, the firm's ability to affix prices that yield greater than average margins might be augmented (Lazer, 1973, p. 398). Another major objective of market segmentation is to uncover opportunities for the repositioning of existing products or the development of new products to fill "gaps" that are prevalent in a particular product market (Yankelovich, 1965). A gap is said to exist when there is a substantial and accessible market segment which is not adequately serviced by available brand offerings. If these gaps can be identified, a firm can, after considering the profit potential, design a product and supporting "marketing mix" strategy that will satisfy the members of that segment.

Market segmentation strategy involves considerably more than simply aggregating consumers into homogeneous groupings or clusters. "Fundamentally market segmentation

is a managerial approach to organized decision making on target markets and on marketing offer strategy." (Cravens, et. al., 1976, p. 224). The process of developing a market segmentation strategy consists of three major components: (1) identification of market segments and development of segment member profiles, (2) profitability analysis and selection of target markets, (3) design of a "marketing mix strategy" to satisfy the needs and wants of customers comprising the target market(s). Each of the above components will be discussed below in the order they were introduced.

Identification of Market Segments and Development of Segment Member Profiles

The first step in the process of devising a segmentation strategy consists of the formulation and identification of strategically useful market segments. A market segment can be defined as a specific group of present and/or potential buyers with homogeneous characteristics (Kotler, 1976, p. 143). The consumers comprising a particular market segment should be aggregated such that they are relatively homogeneous with respect to their needs, desires and likelihood of responding in a similar fashion to a marketing mix offering (Oxenfeldt, 1973, p. 241). In addition, segments should be comprised of

customers who share analogous preferences for product offerings, while customers in different segments should have diverse propensities (Cravens, et. al., 1976, p. 243).

The act of formulating market segments is an aggregation process (Claycamp and Massy, 1968). Each customer is characterized by a distinct set of needs and preferences. If diseconomies did not exist, a firm could maximize profits by developing and marketing products particularly tailored for each customer in the market (Claycamp and Massy, 1968, p. 388). However, the costs associated with the formation, distribution, and promotion of unique products severely limits the product markets in which such a strategy could be profitably employed. The purpose of market segmentation is to aggregate a sufficient number of customers with similar needs and wants so that potential sale revenues justify those expenditures needed to develop and market a product tailored to attract and satisfy specific customer types (Arndt, 1974).

According to McCarthy (1975, p. 113), the process of aggregation:

> "continues as long as the firm is able to offer a product which would be reasonably satisfying to all consumers comprising the segment and at the same time the firm would be able to realize a profit from the sale of such a product."

McCarthy maintains that attention to cost will tend to prompt greater aggregation, while customer demand considerations will encourage the formulation of smaller segments. Profit should, in the opinion of Oxenfeldt (1973), determine how unique a marketing mix a firm can offer to a particular market segment.

Just as there are no hard rules governing the degree of aggregation there is no unique way to aggregate customers into market segments, nor does there appear to be a single approach which uniformly applies across all product markets (Baumwoll, 1974; Dhalla and Mahatoo, 1976). The segments which are constructed are a function of the segmentation "base," or criteria used to accomplish the grouping (Reynolds, 1965). A segmentation base refers to the particular consumer characteristic employed to aggregate individuals into market segments (Engel, et. al., 1972, p. 12). The decision as to which segmentation criteria to employ depends on managerial information needs; the underlying reason for employing market segmentation; the product; and the general characteristics of the market being segmented (Oxenfeldt, 1973, p. 243). The criteria selected should have significance from the standpoint of indicating what marketing strategy would be most effective in attracting the patronage of customers

comprising the various segments. Kotler (1976, p. 142) maintains that segmentation criteria should be measurable and should produce segments that are substantial and accessible.

Formulation of market segments does not provide much in the way of actionable information unless members of different segments can be distinguished (Scissors, 1966). Marketing managers must have a comprehensive understanding of what the typical customer is like in the different market segments. After segments are formulated, profiles must be developed which will allow managers to reach different segment members through the design of distribution and promotional strategies (Cravens, et. al., 1976, p. 264). While the criteria employed to aggregate customers into segments may provide some insight into their nature, it rarely furnishes an ample supply of information on which to make effective market strategy decisions (Scissors, 1966). Segment member profiles should consist of a number of different customer characteristics (e.g., age, sex, income, marital status) and should provide the marketing manager with enough information to effectively focus marketing effort on members of specific market segments (Brandt, 1966, p. 24; Kotler, 1976, p. 143). The next step in developing a market segmentation strategy will be discussed in the

following section.

Profitability Analysis and Target Market Selection

The identification of identifiable, substantial and exploitable market segments, although vital, is only the first step in the process of developing an effective segmentation strategy. After segments are formulated and profiled, the firm must then select the segment(s) which it will seek to attract. The segment chosen for cultivation is referred to as the "target market" (Kotler, 1976, p. 57).

Deciding upon a target market is perhaps the most significant determination management must make during the segmentation process (Cravens, et. al., 1976, p. 266). Every segment which is successfully identified will not present equally attractive potential for the firm (Oxenfeldt, 1973, p. 242). All substantial and accessible segments should be audited to determine which is likely to afford the firm the most promising opportunities for realizing a profit. Profit analysis is considered to be an essential requisite for selecting a target market (Oxenfeldt, 1973, p. 242) and involves the determination of (1) existing and prospective future sales potential of each segment, (2) the degree and extent of competition within each segment, (3) the cost of servicing different

market segments, and (4) the firm's technological and financial capability to produce and market the type of product desired by different market segments. Each of the above components will be discussed below.

Sales Potential: The current and future sales possibilities of potential target markets should be analyzed and compared with one another (Brandt, 1966). Sales potential is a function of two market factors--both the number of customers constituting the segment and the volume of purchases for which this group is responsible. It is conceivable that a relatively minor segment, in terms of the number of customers, may account for a disproportionately large percentage of total market sales.

Competition: A common misconception about market segmentation assumes that it is a competitive strategy when in fact, the purpose for undertaking such a strategy is to avoid competition (Smith, 1956). Avoidance of competition occurs when a firm is successful in identifying and positioning its product with respect to a segment which is not being served by any other producer. In terms of the percentage of market sales it represents, a relatively small segment may offer greater potential for profits provided that the entering firm does not have to engage in direct competition with alternative producers.

Cost: The third step in the profit analysis involves estimating costs associated with the tailoring of products to appeal to the different market segments. A major factor which should receive considerable attention prior to selecting a target market is the amount of investment required to develop and favorably position a product with respect to a potential target market (Smith, 1956). Certain market segments may seem extremely attractive in terms of sales potential, however, the cost of developing, promoting, and distributing the required product offering might be prohibitive.

Serviceability: The final step in profit analysis involves appraising target markets in regard to a firm's capacity to design, promote, and distribute the type of product offering necessary to attract and satisfy member customers (Oxenfeldt, 1973, p. 242). Businesses should seek to identify and focus their efforts on segments which they are financially and technologically most capable of serving. Identification of and concentration on these segments will increase the likelihood that the firm will gain a competitive advantage over other firms.

The information which results from the profit analysis enhances the likelihood that a firm will select, as a target market, that segment which offers the highest

potential toward achieving a competitive advantage and realizing a profit. After the target market has been selected, the firm's next task is to formulate operational marketing objectives which state what the firm intends to accomplish with respect to those target market(s). The objectives stated in quantitative terms (e.g., sales, market share) serve as guidelines for designing the marketing mix strategy for the target market. The process of developing a marketing mix strategy will be discussed in the next section.

Marketing Mix Strategy

A successful market segmentation strategy must link the formation and identification of market segments with effective use of a firm's marketing resources (Cravens, et. al., 1976, p. 241). Once the firm has selected a target market, emphasis must be directed toward the development of a marketing mix with the capacity to effectively attract those customers within that market. A firm's marketing mix is comprised of four submixes (Figure 3) commonly referred to as the four P's--Product, Place, Promotion, and Price (McCarthy, 1975, p. 78). Each of the four submixes will be discussed below.

A product may be defined as anything that can be offered to a market for attention, acquisition or consumption; it includes physical objects, places, organizations, and ideas (Kotler, 1976, p. 185). According to McCarthy (1975, p. 203), a product is more than just a physical product or service; it includes any accessories, installation, packaging, branding and performance guarantees that satisfy the needs of customers. A firm's product mix is the composite of products it offers for sale.

Distribution involves delivering the right product to the right place at the right time. According to Lazer (1973, p. 415), distribution strategy is aimed at "overcoming the forces of space and time to produce time and place utility for the target customers." Distribution strategy need not be limited to the movement of products from the producer to the consumer (Westfall, Mahoney, Holecek, 1977, p. 44). In the case of outdoor recreation (e.g., downhill skiing) which must be consumed on site, distribution strategy would involve elements such as (1) location of the site with respect to target market customers, and (2) mechanisms and tactics to facilitate travel by customers to the site.

Promotion is a critical element in a firm's marketing mix, but is not, as many people believe, the

whole of the promotion submix. The promotion submix is a blending of four types of promotion: (1) advertising, which is a paid form of non-personal presentation; (2) personal selling; (3) publicity, which is non-personal presentation not paid for by the sponsor; and (4) sales promotion, which includes displays, shows, and exhibitions.

Price is the fourth submix. Elements of the submix include (1) pricing objectives (e.g., profit maximization percent of market share), (2) pricing policies, which state how flexible prices will be, at what level they will be set and how prices will change during the course of a product's life cycle, (3) customer discounts, and (4) fee collection methods.

After each submix has been formulated, management must amalgamate the various strategic components into an effective marketing mix strategy to obtain optimum performance (Kelly, 1973, pp. 214-223). Some tradeoffs between submixes are inevitable in creating an overall marketing mix strategy that provides optimum potential for matching the needs and wants of targeted customers. The goal of the integration process is to determine what level and what combination of submix components will achieve the marketing objectives established by the firm. The end product should be a marketing plan which serves as the mechanism for assembling, integrating and implementing

the marketing mix strategy which will be brought to bear on the target market (Kotler, 1976, pp. 158-179; Cravens, et. al., 1976, pp. 444-447).

APPENDIX B

TELEPHONE SURVEY INSTRUMENT

ACTIVE SKIERS

I. Skiing Statistics

We would like to start out by getting some information on your current downhill skiing habits.

1. Approximately how many days did you downhill ski last season (76-77)? _____ (go to 2)

2. Would you say that your participation in downhill skiing (in other words the number of days you downhill ski) has increased, decreased or remained about constant over the past two seasons?

   remained constant ____ (go to 5)

   decreased ____ (go to 3)

   increased ____ (go to 4)

3. Could you tell us any reason why you have reduced the amount of downhill skiing you do?

   (open ended) _____

   _____

   _____

   (go to 5)

4. Could you tell us a possible reason why you have increased the amount of downhill skiing you do?

   (open ended) _____

   _____

   _____

   (go to 5)

5. Did the majority of your downhill skiing take place on overnight trips or day trips? Day____ (go to 10) Overnight ____ (go to 6)

6. Did the majority of your trips usually take place during weekends or on weekdays?

   weekends ____ (go to 7)

   weekdays ____ (go to 7)

7. How many nights did your trips usually last?

   _____# (go to 8)

8. Did you usually stay in lodging facilities at the ski area?

   Yes ____ (go to 12)

   No ____ (go to 9)

9. Where did you stay on overnight trips? (open ended)

   _____

   _____

   (go to 12)

10. Did the majority of your day trips occur on the weekends or during weekdays?

    Weekends ____ (go to 11)

    Weekdays ____ (go to 11)

11. Did the majority of your trips, including travel and ski time, take more or less than five hours?

    less than 5 hours ____ (go to 12)

    more than 5 hours ____ (go to 12)

12. Which downhill ski area in Michigan did you ski most frequently last season? _____(go to 13)

13. Approximately what percent of the downhill skiing you did last season occurred at (insert area given above)? _____(go to 14)

14. What is your favorite downhill ski area in Michigan?_____ _____(go to 15)

15. As close as you can recall, how many different downhill ski areas (including the one/ones mentioned above) did you visit last season (76-77)? _____ (go to 16)

16. Did you purchase a seasonal lift ticket last season?

Yes ____ (go to 17)

No ____ (go to 19)

17. How many seasonal lift tickets did you purchase? _____# (go to 18)

18. At which area(s) did you purchase a seasonal lift ticket? ____(go to 19)

19. Do you usually ski alone or with others? With others____ (go to 20)

Alone ____(go to 21)

20. Who do you usually ski with?

Spouse	____
Friends	____
Spouse and friends	____
Children	____
Spouse and children	____
Ski club	____

(go to 21)

21. Did you take a ski vacation last season?

Yes ____ (go to 22)

No ____ (go to 25)

22. How many ski vacations did you take? ____# (go to 23)

23. How many days did they last? ____(go to 24)

24. Where did you go?

lower peninsula	____
upper peninsula	____
west	____
east (NE)	____
outside U.S.	____

(go to 25)

25. Do you rent or own your equipment?

rent ____ (go to 26) own ____ (go to 26)

26. Do you belong to an organized ski club? Yes____ No ____ (go to 27)

27. Which of the following skill levels (interviewer will read) best describes your present level of ability?

Beginner ____
Intermediate ____
Advanced ____
Expert ____

(go to 28)

28. How old were you when you first picked up downhill skiing? _____Age
What year was that? _____Year

(If over 18, go to 29)

(If under 18, go to 32)

29. Were you married at the time?

Yes ____ (go to 30)
No ____ (go to 32)

30. Did your spouse downhill ski at the time?

Yes ____ (go to 32)
No ____ (go to 31)

31. Did she/he learn with you?

Yes ____ (go to 32)
No ____ (go to 32)

32. Did either one of your parents downhill ski? Yes ____ No ____ (go to 33)

33. Have there been any periods of two or more seasons when you did not downhill ski? Yes ____ (go to 34)

No ____ (go to 37)

34. When? _____years (go to 35)

35. Could you give us a reason for this period of inactivity? (open ended) _____

(go to 36)

27. Which of the following skill levels (interviewer will read) best describes your present level of ability?

Beginner ____
Intermediate ____
Advanced ____
Expert ____

(go to 28)

28. How old were you when you first picked up downhill skiing? _____Age
What year was that? _____Year

(If over 18, go to 29)

(If under 18, go to 32)

29. Were you married at the time?

Yes ____ (go to 30)
No ____ (go to 32)

30. Did your spouse downhill ski at the time?

Yes ____ (go to 32)
No ____ (go to 31)

31. Did she/he learn with you?

Yes ____ (go to 32)
No ____ (go to 32)

32. Did either one of your parents downhill ski? Yes ____ No ____ (go to 33)

33. Have there been any periods of two or more seasons when you did not downhill ski? Yes ____ (go to 34)

No ____ (go to 37)

34. When? _____years (go to 35)

35. Could you give us a reason for this period of inactivity? (open ended) _____

(go to 36)

36. Other than downhill skiing, what types of recreational activities do you participate in during the winter months?

____ cross country skiing (go to 37)
____ snowmobiling
____ indoor tennis, raquet ball, paddle ball
____ health spas
____ ice skating
____ indoor sports (basketball)
____ indoor swimming
____ hockey
____ sledding
_____ other

37. When did you first pick up cross country skiing?

____ year (go to 38)

38. Has the amount of cross country skiing you have done increased, decreased or remained constant over the past two seasons?

increased ____
decreased ____
constant ____

(go to 39)

39. Has your cross country skiing influenced the amount of downhill skiing you do?

Yes ____ increased ____
decreased ____

No ____

(go to 40)

SOCIO-ECONOMIC SECTION

Now we would like to ask you some general questions concerning yourself and your family. We need this information so we can generalize our findings to the entire population. Again, let me assure you that the information you give will remain confidential!

1. What is your current marital status?

   Married _____ (go to 2)
   Single _____ (go to 5)

5. What is your occupation?

   _____

6. Have you ever been married?

   Yes _____ No _____
   (go to 7)

2. What is your occupation?

   _____(go to 3)

3. What is your spouse's occupation?

   _____(go to 4)

4. Is your spouse an active downhill skier? (go to 7)

   Yes _____ No _____

7. Do you have any children?

   Yes _____ (go to 8)
   No _____ (go to 12)

8. How old is the oldest? _____ (go to 9)

9. How old is the youngest? _____ (go to 10)

10. How many live at home? _____ (go to 11)

11. How many of these downhill ski? (go to 12)

    _____

SOCIO-ECONOMIC SECTION - Page 2

12. What was the last grade you completed in school?

_____ number of years (go to 13)

13. Do you live in a house, condominium, or apartment?

_____ (go to 14)

14. Do you rent or own? _____ rent _____ own (go to 15)

15. How many times have you moved in the last five years? _____ (go to 16)

16. How old are you? _____ (go to 17)

17. Was your total family income before taxes less than $15,000?

Yes _____ (go to 18)
No _____ (go to 19)

18. Was it less than $10,000?
Yes _____ (go to closing)
No _____ (go to closing)

19. Was it less than $25,000?

Yes _____ (go to 20)
No _____ (go to closing)

20. Was it less than $20,000?
Yes _____ (go to closing)
No _____ (go to closing)

21. Sex: Male _____ Female _____

22. Location of residence _____

APPENDIX C

THE SCREENING MECHANISM

SCREENING QUESTIONNAIRE

Introduction:

I. A young child answers:

Hello, my name is _____ and I am calling for Michigan State University. May I speak to someone 18 or over?

Yes _____ May I speak with one of them? (go to Intro. III)

No _____ When will they be home? _____

II. Not sure how old respondent is:

Hello, my name is _____ and I am calling for the Department of Park and Recreation Resources at Michigan State University. We are conducting a statewide survey concerning downhill skiing and would like to ask some questions to someone in your household eighteen or over. Are you eighteen or over?

No _____

Is anyone 18 or over at home?

Yes _____ May I speak with one of them? (go to Intro. III)

No _____ When will someone 18 or over be home?

Yes _____

Your household was selected at random from the telephone directory covering your area. Any information you provide us will remain strictly confidential. The survey should only take about ten minutes. Would you be willing to answer some questions for us?

Yes _____ (go to question #1)

No _____ Thank you anyway, good-bye.

III. Respondent obviously is eighteen or over:

Hello, my name is _____ and I am calling for the Department of Park and Recreation Resources at Michigan State University. We are conducting a state-wide survey concerning downhill skiing. You could help us a great deal if you would answer some questions for us.

Your household was drawn at random from the phone book covering your area. The survey should only take about ten minutes and any information you provide us will remain strictly confidential. Would you help us out by answering some questions?

Yes _____ Go to question #1.

No _____ Thank you anyway, good-bye.

1. Have you ever downhill skied?

Yes _____ (go to #2)

No _____ (go to #12)

2. Have you downhill skied more than one season?

Yes _____ (go to #3)

No _____ (go to #8)

8. Have you just recently tried downhill skiing?

Yes _____ (go to #9) No _____ (go to #10)

9. Do you think you will continue downhill skiing?

Yes _____ (go to Active)

No _____ (go to Dropout)

10. Do you think you will ever downhill ski again?

Yes _____ (go to Dropout)

No _____ (go to Dropout)

3. Did you downhill ski last season (76-77)?

Yes _____ (go to #4) 4. Have you skied yet this season or do you think you will downhill ski in the future?

No _____ (go to #5)

Yes _____ (go to Active Skier Survey)

No _____ (go to Active Skier Survey)

5. Have you downhill skied yet this season?

Yes _____ (go to #6) 6. Are you likely to continue skiing after this season?

No _____ (go to #7)

Yes _____ (go to Inactive Survey)

No _____ (go to Inactive Survey)

7. Do you think that you will continue downhill skiing in the future?

Yes _____ (go to Inactive Survey)

No _____ (go to Dropout Survey)

13. Do you think that you would like to try downhill skiing?

Yes _____ (go to Potential Skier Survey)

No _____ (go to #14)

14. Is there anyone eighteen or over in your household that does downhill ski, has downhill skied, or interested in taking up downhill skiing?

Yes _____ →

15. May I speak with him/her?

Yes _____ Repeat intro.

No _____ go to #16

16. Do you know when he/she will be home? _____

Who should I ask for when I call back?

No _____ (Terminate Interview)

APPENDIX D

THE EXPLORATORY MAIL QUESTIONNAIRE

Good Day

The Department of Parks and Recreation at Michigan State University is planning to undertake a study aimed at determining what Michigan skiers desire in ski areas and resorts. You could help us in designing a questionnaire (that will be administered to skiers this winter) by telling us what you consider to be important when deciding on a ski area to visit. We hope this information will assist operators in developing the type of areas skiers really desire.

We would appreciate it very much if you would complete the following questionnaire and return it to us either after the meeting or in the stamped, self-addressed envelope provided for you.

Thank you very much for your time and consideration.

1. What do you look for in the way of price (e.g. lift tickets, seasonal passes, group discounts, etc.)?

2. What do you look for in terms of location (e.g. distance from home, location with respect to other ski areas)?

3. What do you look for in the way of accommodations and restaurant facilities?

4. What do you look for in the way of slope design or quality (e.g. snow conditions, degree of difficulty, diversity, length of slope, number of skiers on slope)?

5. What do you look for in the way of nonskiing recreational activities and facilities, (e.g. pools, nighttime entertainment)?

6. What do you look for in the way of equipment shops and/or equipment rental?

7. What do you look for in the way of customer services (e.g. babysitting, instruction)?

8. List anything else (that does not fall into the above categories) that you consider important when selecting a ski area to visit.

APPENDIX E

THE MAIL QUESTIONNAIRE

SKIER QUESTIONNAIRE

Section I.

Skiers usually take many things into account when selecting which area(s) to visit. The following factors are considered to be among the most important:

1. After ski entertainment (bars, discotheques, pools, etc.)
2. Lodging facilities at the ski area
3. Restaurant facilities at the ski area
4. Amount of crowding at lift lines
5. Slope quality (degree of vertical drop, length of slope, number and difficulty of slopes, etc.)
6. Price of lift tickets
7. Driving distance from home to the area

In this section of the questionnaire we are interested in finding out what YOU look for when selecting a downhill ski area. Below you will find a list of twenty-one (21) comparisons. FOR EACH PAIR CIRCLE WHICH OF THE TWO FACTORS YOU CONSIDER MORE IMPORTANT. When selecting which is more important think in terms of making an OVERNIGHT OR WEEKEND SKI TRIP.

EXAMPLE: If you consider the type of lift more important than whether the area has an equipment shop, you would circle type of lift as follows:

(Type of lift) OR Equipment shop

It is important that you circle one and only one factor in each of the twenty-one pairs.

FOR EACH PAIR CIRCLE WHICH OF THE TWO FACTORS YOU CONSIDER MORE IMPORTANT.

1. After ski entertainment OR Amount of crowding at lifts
2. Lodging facilities OR Restaurant facilities
3. Slope Quality OR After ski entertainment
4. Lodging facilities OR Price of lift ticket

Continue on Next Page

FOR EACH PAIR CIRCLE WHICH OF THE TWO FACTORS YOU CONSIDER MORE IMPORTANT.

5.	Restaurant facilities	OR	After ski entertainment
6.	Slope quality	OR	Distance from home
7.	Price of lift ticket	OR	Slope quality
8.	Price of lift ticket	OR	Restaurant facilities
9.	Slope quality	OR	Lodging facilities
10.	Distance from home	OR	Lodging facilities
11.	Amount of crowding at lifts	OR	Restaurant facilities
12.	Distance from home	OR	After ski entertainment
13.	Amount of crowding at lifts	OR	Price of lift ticket
14.	Distance from home	OR	Amount of crowding at lifts
15.	Lodging facilities	OR	Amount of crowding at lifts
16.	Price of lift ticket	OR	Distance from home
17.	Amount of crowding at lifts	OR	Slope quality
18.	After ski entertainment	OR	Price of lift ticket
19.	Distance from home	OR	Restaurant facilities
20.	Restaurant facilities	OR	Slope quality
21.	After ski entertainment	OR	Lodging facility

Go to next page

Section II.

Now we would like to get more specific information on what you look for when selecting a ski area to visit on an overnight or weekend (two nights) ski trip. There are nine questions to answer in this section.

1. We want to know what you look for most in the way of ski slopes. Below you will find a list of seven slope factors.

   RANK THEM IN ORDER OF THEIR IMPORTANCE TO YOU (1 being the most important, 7 being the least important). Each of the seven factors should be assigned a number. DO NOT USE THE SAME NUMBER TWICE. Write the numbers in the blanks provided.

   _____ Steep runs

   _____ Moguled slopes

   _____ Uncrowded slopes

   _____ Well-groomed slopes

   _____ Slopes of varying degrees of difficulty (beginner to advanced)

   _____ Long runs

   _____ Lighted slopes for night skiing

2. How many hours do you generally travel to reach the ski areas you visit on overnight or weekend trips? Please estimate the travel time from your permanent residence not a second home or lodge near the area.

   _____ number of hours driving (ONE WAY)

3. What is the MAXIMUM TIME you would be willing to drive to reach a ski area FOR AN OVERNIGHT OR WEEKEND TRIP?

   _____ number of hours driving (ONE WAY)

4. We want to know what you desire most in the way of eating (restaurant) facilities while on an OVERNIGHT OR WEEKEND SKI TRIP. Below you will find three types of eating (restaurant) styles found at ski areas.

   RANK THEM IN ORDER OF THEIR DESIRABILITY TO YOU (1 being the most desirable, 3 the least desirable). Each of the three eating styles should be assigned a number. DO NOT USE THE SAME NUMBER MORE THAN ONE.

   _____ cafeteria (you serve yourself) style

   _____ sit down (you are waited on) style

   _____ fast food (snack bar) style

Continue on Next Page 

Section II. (Cont.)

5. What do you generally pay for a DAILY LIFT TICKET at those areas you visit on an overnight or weekend trip?

   $ _____ per day

6. What is the MAXIMUM you would be willing to pay for a DAILY LIFT TICKET while on an overnight or weekend ski trip?

   $ _____ per day

7. Finally, we are interested in finding out what you prefer in the way of after ski entertainment. Below, you will find a list of six types of after ski entertainment. RANK THEM IN ORDER OF THEIR DESIRABILITY TO YOU (1 being the most desirable, 6 the least desirable). Each of the six types of entertainment should be assigned a number. DO NOT USE THE SAME NUMBER MORE THAN ONCE.

   _____ Heated pools

   _____ Discotheques

   _____ Quiet bar - lounge with fireplace

   _____ Saunas

   _____ Game rooms (pinball, etc.)

   _____ Indoor tennis

THANK YOU AGAIN FOR YOUR TIME AND COOPERATION.

If you accidentally misplaced the return envelope provided, please mail to:

Recreation Research and Planning Unit
Department of Park and Recreation Resources
Michigan State University
East Lansing, Michigan 48824

APPENDIX F

THE PRECODED ANSWER SHEET

ANSWER SHEET FOR ACTIVE SKIER STATISTICS

ID# ( )( )( ) (1 2 3)
CARD# (1) (4)
TYPE (1) (5)

1) Number of days skied____(col's 9 and 10)

2) Has participation_____increased (2 col 8)
_____decreased (1 col 8)
_____constant (0 col 8)

( ) ( ) (6 7)

3) Reason for decrease(col6-7)
____ Less free time (09)
____ Less money/income(10)
____ Poor health (11)
____ Marital status (12)
____ Children(13)
____ Sold second home(14)
____ Moved (15)
____ Age/too old (16)
____ Losing interest (17)
____ Too crowded (18)
____ Too expensive (19)

4) Reason for increase (col 6-7)
____ More free time (01)
____ More money/income (02)
____ Better health (03)
____ Changed marital status (04)
____ No children to care for (05)
____ Purchased second home (06)
____ Moved/more accessible (07)
____ Joined ski club (08)

( ) (8)

( ) ( ) (9 10)

_____ (11)

_____Other (12)

5) Majority overnight or day trips
____ overnight (1 col 11)
____ day (2 col 11) (13)

6 and 10) Weekends or weekdays
____ weekends (1 col 12)
____ weekdays (2 col 12) (14)

11) More or less than 5 hours
____ Less (0 col 13)
____ More (1 col 13) (15)

7) Number of nights____(col 14)
8 and 9) Usually stayed at:
____Area (1 col 15)
____Motel near area(2 col 15)
____Second home (3 col 15)

( ) ( ) (16 17)

( )( )( ) (18 19 20)

_____

_____Other

( )( )( ) (21 22 23)

12) Most frequently skied _____(col 16 and 17)

( ) ( ) (24 25)

13) Percent of skiing _____(col's 21 thru 23)

14) Favorite area _____ (col 24 and 25)

( )( )( ) (26 27 28)

15) Number of different areas _____(col 29 and 30)

( ) ( ) (29 30)

16) Purchased a seasonal ticket: Yes____ No____(0 col 31)

17) How many____(col 31)

( ) (31)

18) Where _____

( ) ( ) (32 33)

_____

_____(32-35)

( ) ( ) (34 35)

19) Ski with ____ Alone (0 col 36)
____ Spouse (1 col 36)
____ Family (2 col 36)
____ Friends (3 col 36)
____ Ski club members (4 col 36)

( ) (36)

21) Took a ski vacation

____ No (0 col 37)
____ Yes

22) Number of vacations____(col 37)

( ) (37)

23) Number of days_____(col's 38 & 39)

( ) ( ) (38 39)

24) Where_____

_____(col's 40 and 41)

( ) ( ) (40 41)

25) Rent or own equipment

____ Rent (0 col 42)
____ Own (1 col 42)

26) Belong to a ski club
____ No (0 col 43)
____ Yes(1 col 43)

27) Skill level
____ Beginner (1 col 44)
____ Intermediate(2 col 44)
____ Advanced (3 col 44)
____ Expert (4 col 44)

28) Age when picked up skiing ____(col's 45 & 46) Year____(col's 47 & 48)

29) Married at time ____ Yes ____ No (0 col 49)
30) Did Spouse ski ____ Yes(1 col 49) ____ No
31) Did spouse learn____ Yes(2 col 49) ____ No (3 col 49)

32) Did parents ski
____ No (0 col 50)
____ Yes (1 col 50)

33) Periods of inactivity
____ No (0 col 51)
____ Yes (1 col 51)

34) When (a) _____
(b) _____

35) Why (a) _____
_____
(b) _____
_____

36) Winter Recreational Activities

____ Cross country skiing. . . . . (col 60)
____ Snowmobiling. . . . . (col 61)
____ Ice skating, Hockey . . . . . (col 62)
____ Sledding, tobogganning . . . . . (col 63)
____ Indoor tennis, handball, raquetball, paddleball . . . (col 64)
____ Indoor sports (basketball, volleyball, swimming) . . (col 65)
____ Health spas . . . . . (col 66)

_____Other (col 67)

_____Other (col 68)

_____Other (col 69)

37) Year picked up X country _____ (col's 70 & 71)

38) Has X country ____ Increased (1 col 72)
____ Decreased (2 col 72)
____ Constant (3 col 72)

39) Has X country influenced downhill
No ____ (0 col 73)
Decreased ____ (1 col 73)
Increased ____ (2 col 73)

Blank

( )( )( )
42 43 44

( ) ( )
45 46

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47 48

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72

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73

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74 80

Answer Sheet For Socioeconomic Questions

ID # ( ) ( ) ( )
1 2 3
CARD # (2)
4

1) Current Marital Status
Married ____(1 col 5) ( )
5
Single ____.

2) Occupation _____(col 6) ( )
6
3) Spouses Occupation
_____(col 7) ( )
7
4) Is spouse an active Skier
No ____(0 col 8) ( )
8
Yes____(1 col 8)

5) Occupation _____(col 6)

6) Ever been married
No ____(2 col 5)
Yes____(3 col 5) ( )
9

7) Do you have children
No_____ (0 col 9)
Yes____ (1 col 9)

8) How old is the oldest _____(col's 10 and 11) ( ) ( )
10 11

9) How old is the youngest_____(col's 12 and 13) ( ) ( )
12 13

10) How many live at home _____(col 14) ( )
14

11) How many downhill ski _____(col 15) ( )
15

12) Last grade completed_____(col's 16 and 17) ( ) ( )
16 17

13) House	____	Own House	_____(1 col 18)
	Condominium____	Rent House	_____(2 col 18)
	Apartment ____	Own Condominium	_____(3 col 18)
14) Rent	_____	Rent Condominium	_____(4 col 18)
	Own _____	Rent Apartment	_____(5 col 18)

( )
18

Number of times moved _____(col 19) ( )
19

16) Age _____(cols 20 and 21) ( ) ( )
20 21

Yes (less- 10) ___(1 col 22)
Yes ___
No (more- 10) ___(2 col 22)
17) Less than 15 ( )
22
Yes (less- 20) ___(3 col 22)
Yes (less- 25) ___
No ___ No (more- 20) ___(4 col 22)
No (more- 25) ___(5 col 22)

21) Sex male ___(1 col 23) female ___(2 col 23) ( )
23

22) Location _____(col 24) ( )
24
Zone _____(col 25 and 2) ( ) ( ) ( )
25 26 27

APPENDIX G

FOLLOW-UP LETTER OF APPEAL

MICHIGAN STATE UNIVERSITY

DEPARTMENT OF PARK AND RECREATION RESOURCES
NATURAL RESOURCES BUILDING

EAST LANSING • MICHIGAN • 48824

Dear Mr. Smith:

Approximately ten days ago we mailed you a copy of the skier questionnaire we discussed during our recent phone conversation. However, we are still looking forward to receiving your response.

An early response is critical for two reasons. First, we only mailed two hundred questionnaires to selected individuals so each response will carry considerable weight in our analysis. Second, we would like to tabulate the data in the next two weeks so that we can present our findings to a conference of ski area operators. The information you provide should assist ski area operators in designing better (from the skier's point of view) ski facilities.

We have included another copy of the questionnaire (and stamped return envelope) in the event that the first mailing failed to reach you. Again, we would like to thank you for your time and assistance.

Sincerely,

Daniel J. Joynes
Assistant Professor

Enclosures