This is to certify that the

dissertation entitled

Quantitative Applications
in Tourism Market Segmentation:
Traverse City, Michigan

presented by

Bonnie D. Davis

has been accepted towards fulfillment
of the requirements for

Doctor of Philosophy degree in Family & Child Ecology

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Date August 28, 1986

QUANTITATIVE APPLICATIONS IN TOURISM MARKET SEGMENTATION:

TRAVERSE CITY, MICHIGAN

By

Bonnie D. Davis

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Family and Child Ecology

1986

## ABSTRACT


QUANTITATIVE APPLICATIONS IN TOURISM MARKET SEGMENTATION:
TRAVERSE CITY, MICHIGAN

By

Bonnie D. Davis

Tourism, a viable growth industry for Michigan, is one of the state's three largest employers. Many tourist-dependent areas exist within the state and any change in tourism impacts those areas. Tourist regions therefore need to match their specific offerings to enough tourists to be profitable.

The purpose of this study was to isolate unique tourist segments which are likely to respond favorablely to market strategies. Traverse City , Michigan, was the selected sampling site. Ten tourist attracting attributes developed by Goodrich (1977a) were used in conjunction with Fishbein's (1967a) multi-attribute attitudinal model to determine the attitude each tourist held toward Traverse City. Using the derived attitude score, a two-stage cluster analysis process (BMDP2M and BMDPK-Means) was used to develop ten unique tourist typologies. Discriminant analysis and log-linear modeling via multi-way contingency table analysis were used to test differences between typologies. As a result of hypothesis testing, six viable tourist segments were identified.

Analysis revealed that perceptions of area attributes differed significantly among typologies. Tourist typologies differed significantly in their perceptions of the area's physical and cultural features (Attribute beliefs) and significant attribute evaluation differences were revealed. The six viable segments were described and marketing stragegies were suggested.

No significant differences were noted among typologies regarding demographics, travel behavior or travel responses to changing economic conditions; however, expenditures for cuisine and entertainment differed significantly. Finally, tourists living closer than 200 miles from Traverse City rated the area as possessing significantly more shopping facilities than persons living further away.

## ACKNOWLEDGMENTS

Thank you to Dr. Brenda Sternquist for her guidance, encouragement and friendship as my major professor and dissertation director. Thank you also to my committee members Dr. Margaret Bubolz, Dr. Dennis Keefe, Dr. Jean Schlater, Department of Family and Child Ecology, and Dr. Glenn Omura, Department of Marketing and Transportation Administration. Their involvement in my graduate program helped to provide me with a stimulating educational experience.

Gratitude is expressed to Sue Kern, Marianne Mahoney, Judy Osbun and Dr. Dawn Pysarchik for their friendship and commiseration throughout the course of my graduate program.

Special recognition is extended to my parents, Bonnie and Walt Proebstel for their unwavering faith in my ability to complete this graduate program and for the gentle pushes to do so when needed. I couldn't have done any of this without you.

Finally, a very special thank you to my best friend and husband, Dan Chappelle. Thank you for your understanding during the crazy times and for your encouragement and support always.

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## CHAPTER I

### Introduction

With volatile and uncertain economic conditions, many state and local governments are attempting to attract new growth industries to their area. For the state of Michigan one of the most viable growth industries is the travel and tourism sector. Travel and tourism is the third largest private employer in the United States (Frechtling, 1977; Tuttle, 1984) and ranks among the three largest employers in 39 states including Michigan (Tuttle, 1984). The travel and tourism industry provides approximately 4.6 million jobs nationally (Tuttle, 1984) and directly employed 263,000 persons in Michigan during 1984 (Schneider, 1985, p. 10). Additionally, many areas in the state are highly dependent upon tourism as a major source of income. Any change in the industry therefore dramatically impacts these areas in addition to affecting those persons employed in the industry.

Tourism contributed 11.4 billion dollars to the Michigan economy in 1984 (Schneider, 1985, p. 10). State tax revenues from tourist-related businesses and employers yielded $525 million in 1984 (Schneider, 1985, p. 10).

Tourism accounted for approximately nine percent of the Upper Peninsula region's total wage and salary jobs in 1979. State-wide, tourism accounted for seven percent of all wage and salary jobs. Counties with a high proportion (12% and over) of tourist related employment are located along the Interstate 75 corridor in the northern lower peninsula and along the northwest shore of the lower peninsula (Michigan Employment Security Commission, 1980, p. 15). Thus, any change in the industry impacts the total state economy.

On the national level, travel and tourism accounted for approximately 4.4% of the total non-agricultural employment in 1974 (Frechtling, 1977, p. 11). It generated approximately $46 billion in wages and salaries and contributed more than $20 billion in tax revenues. Travel and tourism accounts for 6.4% of the gross national product (Tuttle, 1984). However, despite its obvious importance to the total U.S. economy, the travel and tourism industry has been the object of little empirical research.

## Statement of the Problem

Travel and tourism enterprises, as a sector of the economy, must be constantly responsive to the needs and desires of the tourist in order to be financially successful. Of course, this is not a unique situation. Ultimately, all businesses in all industries are influenced by the demands of their consumers. However, industries and businesses dealing directly with their consumers, such as those in the tourism industry, are more cognizant of this fact.

Consumers/tourists do not all have identical needs and desires. For people to realize the greatest satisfaction with the travel experience, they need to match their needs and desires with the offerings, both physical and social, of a tourist region. In turn, tourist regions need to match their specific offerings to enough tourists to be profitable. To achieve profitability, developers of tourist areas need to know what attracts visitors to their area so they can improve their product offering and best satisfy the greatest number of consumers. In order to do this, empirical research is needed so that tourist area developers may identify the types of people their area attracts. Research findings can then be used in the development of tourist typologies. Tourist typology development is not the terminal point however. For tourist regions to be targeted to specific tourist markets, differences in travel behavior and demographics need to be recognized and incorporated into market strategies. In addition, the marketing strategy may also include physical improvement of the resort product. Lack of empirical tourism research presents difficulties for those involved in the marketing of specific tourist regions. Without

research, tourist regions are usually mass marketed rather than targeted to specific tourist markets. Additionally, deficiencies in the product may never be recognized without research.

Very few vacation destinations are acceptable and desired by all people. To be successful, mass-marketing requires heavy investments of money in promotional efforts. Promotional resources are often wasted however by appealing to segments of the market which consist of nonpotential or low-potential tourists (Kotler, 1980). A better marketing strategy is to isolate those segments in the market which are likely to respond and to focus the marketing strategy upon their needs and desires (McIntosh, 1977).

## Problems in the Industry

The tourism industry is one in which the product can be improved through public policy decisions. Because of its importance to the economy and because government supplies many ingredients to the tourist's experiences, tourism product development is a necessary governmental as well as private sector activity. The infrastructure and parts of the recreational experience, for example state and national forest lands, are owned and managed by the public sector. The ability to improve the product should therefore influence resource allocation. Resources

associated with tourism are:

(1) particular physical conditions people believe are conducive to recreation and which constitute natural recreational resources;

(2) capital investment in tourism used to develop structures and other facilities; and

(3) recreational or tourist activities themselves (McMurry & Davis, 1954).

Many problems associated with domestic tourism are a result of the degree of tourism development intensity. Excessive or badly planned tourism development affects both the physical and cultural environment. Many problems associated with tourism could be off-set by high quality planning and by tourist education. Generally, tourists are attracted to areas with beautiful scenery, abundant wildlife, and historical and cultural interest. These are mostly public goods and services. Greater appreciation of these factors can be developed through a tourist education program. Additionally, a portion of the money spent by tourists on these attractions can be used to preserve, conserve and enhance inherent and man-made attractions (Archer, 1978).

Unique natural environmental factors, historical significance and cultural attractions all contribute to a tourist region which successfully satisfies the needs and desires of tourists (Ethridge, 1982). These factors, however, can be overpowered to the point of distortion and hinder successful development if the image is not perceived correctly. Whether the image is a "true" representation of what any given region has to offer is relatively unimportant. What is important is the image as it exists in the mind of a consumer. For successful tourism development, potential tourists must perceive that they will be served by friendly people. Destinations must also have adequate levels of clean water, familiar foods, comfortable accommodations and police protection. Without minimal levels of comfort and safety, otherwise attractive tourist destinations will not receive many tourists because of concerns regarding safety and convenience (Ethridge, 1982). Thus while scenic beauty, good climate and recreational facilities are important, they are not enough to attract large numbers of tourists. It may be concluded therefore that tourists are attracted to places which are different from their homes but are similar in their amenities. Homogenization of tourist destinations, however, can lead to problems for tourist destination developers. The problem facing developers is that if they standardize amenities to attract and accommodate more tourists, they might destroy some unique features which originally attracted tourists to their locale (Ethridge, 1982).

## Justification

A few years ago uncertain gasoline supplies and the resultant change in tourist behavior patterns caused many in the tourism industry to reevaluate their business activities and opportunities. For example, during the summer of 1980, tourist activities in Michigan's Upper Peninsula were reduced 40-60%. The United States Travel Data Center predicted a 9-11% decline in overall summer activity as measured by direct expenditures for the entire Great Lakes region for 1982 (El Nasser, 1982, p. 1). Industry officials who previously expressed the opinion that tourists would adjust their expenditure patterns to maintain their usual types and levels of activities were forced to reevaluate their beliefs. The decline in activity was an indication that vacation travel is a discretionary good, deferrable and price elastic (Ethridge, 1982). Consumers were unwilling to increase their expenditures to offset rising tourist activity costs.

Compared to pre-1979 travel behavior, major changes in the kinds and lengths of trips, and types of activities undertaken have occurred. A trend noted by Great Lakes travel associations was that people began to drive less, stay longer in one place, take fewer side trips, and where economical to do so, substitute mass for private transportation. There were also indications that tourists were behaving more conservatively in their spending

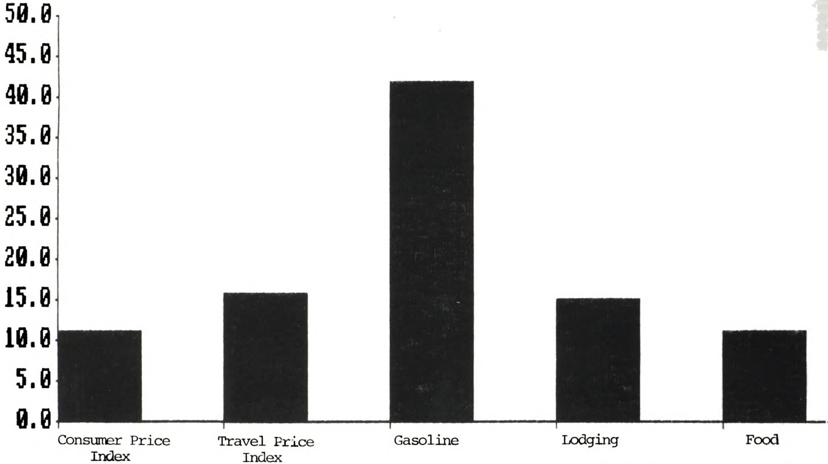
patterns. Tourists were shopping around for the "best" total accommodation package for their money (Murphy, 1981). During 1984, improvement in the national economy led to predictions of improvement in the travel and tourism industry. Nationwide a three percent increase in travel and tourism over 1983 was predicted. However, Douglas Frechtling, director of the U.S. Travel Data Center stated the effects of the 1981-1982 recession were still influencing tourist spending. "Cautious spending as a state of mind appears to be firmly entrenched. Travelers want to think of themselves as smart shoppers" ("Summer Travel Outlook", 1984, p. 81).

With carefully developed marketing strategies, states in the Great Lakes region, particularly Michigan, should be able to benefit from changes in tourism activity. Michigan is within a one day drive of 46 million people who earn 47% of the nation's disposable income (Barnes, 1983). Maximizing upon Michigan's locational advantage, marketing strategies could be developed to draw vacation travelers away from the south and persuade them to choose Michigan as their vacation destination. Research is necessary in order to develop effective strategies. Without a clear understanding of who the customer is, what is desired by that person and the travel alternatives available to that person, the possibility of developing successful strategies is questionable.

## Economic Benefits of Tourism

Recent economic conditions in the United States wreaked havoc on the travel industry nationally and, particularly, in Michigan. Many communities of Michigan are heavily tourist-dependent and any change in travel behavior affects not only persons employed in the industry but others in the community as well. Inflation impacted the travel industry. During July 1978, the cost of travel as measured by the U.S. Travel Data Center's Travel Price Index increased 2.2%. As indicated in Figure 1, the Travel Price Index increased 15.9% as compared to an increase of 11.3% in the Consumer Price Index from June 1978 to June 1979. During this period, gasoline prices rose 42%, out-of-town lodging increased 15.2%, and food expenditures increased 11.4% ("Tourism on Upswing", 1979, p. 36). When these figures are examined in light of their relative importance to the total travel budget, the results are even more impressive. Transportation, the single most important budget item accounts for about 35% of the total expenditures. Food and beverages account for a little more than 25% of the budget, while lodging accounts for another 16% (Linden, 1980, p. 72).

Development of new markets for the industry offers many advantages to the American economy. Tourism accounts for one-third of all business service exports (Tuttle,




(Source: "Tourism on Upswing, 1979, p. 36)

Figure 1 Cost of Travel Increases from June 1978 to June 1979

1984) and is the fourth leading export for the United States ("Tourist Boom Benefits", 1979, p. 10). Tourism exports are those expenditures made by foreign tourists in the United States. Imports and exports of international tourists affect the United States balance of payments situation and economic conditions in general. To emphasize the importance of the industry to the government, an estimated 10 to 13% of every tourist dollar goes to federal, state and local tax coffers. In 1977, this amounted to approximately 1.3 billion in additional revenues ("Tourist Boom Benefits", 1979, p. 10).

Tourism imports are those expenditures made by Americans abroad. The concept of tourism imports and its importance to the economy is basically the same as import substitution. Import substitution is the domestic production of some product previously imported. When a business imports a product from another country, money leaves the country in exchange for the goods. Likewise, when a person travels outside of his or her country, travel dollars are spent in the visited countries. Import substitution consists of the development of a product within the country boundaries to substitute for the imported product thereby keeping money within the country. The same applies to travel. If tourists travel within their own countries, money is kept in that country's economy. It is economically beneficial, therefore, to

attempt to make an American vacation an attractive alternative and keep those dollars in the United States.

The magnitude of domestic travel in 1984 was such that more than two-thirds of the American public was expected to travel at least 100 miles or more away from home. This represents one billion trips, twice the number reported in the 1972 National Travel Survey (Tuttle, 1984). Archer (1978) suggested that domestic travel is a form of "invisible export" (p. 131). That is, domestic tourism is a redistribution of money within a national boundary. Domestic tourism plays a vital role in a state's or region's economic health. Effects resulting from expenditures by tourists from other regions of the country are similar to those of foreign travelers. Domestic travelers stimulate the flow of money from one region of a country to another. Thus, a well-planned and managed tourist area acts as the impetus to further economic stimulation. Part of the economic "ripples" which result are the generation of tax revenues, employment, and other benefits to the community.

## Trends in Tourism

It is economically beneficial to attract foreign visitors and thereby increase tourism exports. Because tourism in Michigan does not exist in a vacuum it is necessary to recognize the impact of national and international tourism trends.

For several years, increases in foreign tourism occurred. In 1978, total European visitors increased by 26% over 1977. Nevertheless, due to locational proximity and the financial ability of a large portion of the population to travel, Canadian tourists accounted for about 57% of all foreign tourists in 1977 ("Tourist Boom Benefit", 1979, p. 9). Michigan should be in a position to benefit greatly from Canadian foreign travel. Michigan shares two borders with Canada and is located near the heavily populated provinces of Ontario and Quebec.

Impact of Economic Conditions upon Travel

Tourism, along with other industries, is directly impacted by any adverse economic conditions. The industry was severly affected by the energy crisis and recession of 1973-1975. Royer, McCool and Hunt (1974) examined the impact of fuel shortage upon tourism. Fuel rationing systems, a threatening possibility at the time of the study, would have restricted or eliminated the use of fuel for recreation or tourism. This action would have had a tremendous impact upon states dependent upon tourism. For one to fully comprehend the impact of a fuel rationing system upon tourism the size of a state's tourist industry and its contribution to the state economy would have to be known. Little data on travelers' expenditures from among

comparable states are available. What is known, however, is that approximately 80% of tourist travel is by car ("Summer Travel Outlook", 1984, p. 81). Those states which are relatively tourist dependent and have distant consumer markets and large intra-regional mileage would experience the most negative impact from a fuel shortage or a fuel rationing scheme.

In a later study, Corsi and Harvey (1979) examined the effect of fuel shortages and higher prices on vacation travel. Results of a survey administered to households in southeastern Wisconsin revealed demographic differences in approaches to travel and economic changes. The principal wage earner's occupation, level of education and age were found to influence travel plans. Households were less likely to alter their travel plans if they were in a higher income bracket and headed by a non-middle aged, white collar worker possessing a higher than average education. While an understanding of the impact of economic conditions on travel decisions is important, this information is not enough to predict actual travel behavior. Many other factors impact the travel decision. Attitudes people have concerning travel are important factors when attempting to understand travel behavior.

## Conceptual Framework

The conceptual framework for this study is based on Fishbein's expectancy-value model. Fishbein's model focuses on attitude development. According to Dobb (1967) and Fishbein (1967a), attitudes are "learned, mediating evaluative responses" (Fishbein, 1967a, p. 390). That is, an attitude is a learned implicit response that tends to guide one's overt evaluation of some object. One generally accepted definition of "attitude" is that it is "a learned predisposition to respond to a given stimulus or class of stimuli" (Fishbein & Coombs, 1974, p. 99). It is a predisposition to respond in a particular way to an object (Fishbein, 1967b; Yoell, 1966).

Attitudes guide or influence behavior. They provide individuals with a basis for decision-making. If the promoter of a product can determine how individuals form attitudes with respect to that product, then he or she will be in a better position to develop a marketing strategy (Engel, Warshaw & Kinnear, 1979). Information about consumer/tourist attitudes help those in the business of promoting resort area "packages" (meaning the entire travel experience) improve their understanding of tourist markets. More comprehensive information should help resort area promoters identify those product parts which need improvement. Information about tourist attitudes should,

for example, help resort promoters identify whether facility development is needed or whether greater emphasis should be placed on the area's natural beauty. This should help them improve their overall tourist "package" and develop or improve their marketing strategy.

## Definition of Terms

Terms used throughout this study are defined in the following manner.

A tourist is an individual whose permanent residence was not in the test area and who identified himself as a visitor to the area.

Tourist typologies are distinct groupings of tourists who, with other group members, share some common characteristic or characteristics.

Travel behavior is the way a tourist responds to external or internal force with respect to travel decisions.

An attribute is a specific characteristic of an area. Attributes analyzed in this study are those introduced by Goodrich (1977a; 1977b; 1978). Specifically these attributes are: availability of water facilities; availability of active sport facilities; historical or cultural interest; scenic beauty; pleasant attitudes of the people; opportunity for rest and relaxation; shopping facilities; cuisine; availability of entertainment; and availability of suitable accommodations.

Attribute bundles are the combinations of attributes.

Resort area is a community which is heavily dependent upon tourism for its economic base.

Attribute evaluative criteria is the personal evaluation of the importance of an attribute in the travel decision process.

## Measurement Definitions

Attribute beliefs were determined by the numerical response to questions one through ten on the questionnaire.

Attribute evaluations were determined by the numerical response to questions 11 through 20 on the questionnaire.

Attribute scores were determined by multiplying each attribute belief with the corresponding attribute evaluation score.

The attribute scores were summed to produce a single unidimensional score representing the overall attitude.

Membership in the groups was determined through use of the attitude score used in conjunction with cluster

analysis. Attitude scores could vary between 10 and 490 points. An attitude score of 22 or less resulted in Group 1 membership. Attitude scores for membership into Groups 2 through 10 were as follows: Group 2 members, 23 to 39 points; Group 3 membership, 40 to 53 points; Group 4 membership, 54 to 68 points; Group 5 membership, 69 to 88 points; Group 6 membership, 89 to 99 points; Group 7 membership, 100 to 122 points; Group 8 membership, 123 to 144 points; Group 9 membership, 145 to 243 points; and Group 10 membership, 244 points and greater.

## Assumptions

Tourists, whether consciously or unconsciously, use the concept of attribute bundles, represented by the ten tourist attracting attributes (Goodrich, 1978), when making vacation destination decisions.

## Research Objectives

In order to derive information which may eventually be used in the development of marketing strategies, this research was designed to :

(1) determine attitudes tourists held toward a resort area;

(2) define tourist typologies based upon the attitudes

held by tourists;

(3) determine if demographic and trip behavior differences exist among tourist typologies;

(4) and identify tourist segments which can be used in development of marketing strategies for the Traverse City Area.

## Hypotheses

H1. Differences in attribute scores exist between tourist typologies.

H2. Differences in beliefs about the degree to which an area possesses an attribute exist among tourist typologies.

H3. Attribute evaluation differences exist among tourist typologies.

H4. Demographic differences exist among tourist typologies.

H5. Differences in travel behavior exist among typologies.

H6. Differences exist among tourist typologies in regard to travel expenditures.

H7. Differences exist among tourist typologies in their travel response to changing economic conditions.

H8. Tourists living more than 200 miles from a region view that region differently from those tourists living closer.

# CHAPTER II

## Review of Literature

The travel and tourism industry is impacted by national, state and regional economic trends. In turn, it impacts all levels of the economy through resulting revenues and tax dollars. Through the tourist, there is a continuous feedback loop between the economic structure and the tourism industry. As a consumer of tourist activities, the individual uses resources in the environment to fulfill personal needs and desires. In turn, the individual exchanges personal and family resources so that consumption may take place.

This literature review focuses upon some of the influencing factors in the exchange and consumption process for the tourist product. The place of tourism within the ecosystem is examined in order to better understand the exchange process. Physical and cultural/social factors in the environment impact a tourist's image of an area and influence the travel decision. For these reasons a discussion of factors such as current demographic impact on tourism, tourist area image and attributes influencing the travel decision are important. Attitudes toward a tourist area influence the travel decision. Therefore, an understanding of attitude theory is desirable. Toward achieving this desired state, attitude theory and expectancy-value models, including the Fishbein model, are discussed in the latter part of this chapter. As previously discussed, for tourists to realize satisfaction with travel experiences as well as for the financial success of the tourist region, it is important to match needs and desires of tourists to offerings of specific tourist regions. Market segmentation is one way through which optimal fit (i.e., tourist needs and desires matching tourist region offerings) is achieved.

## The Human Ecosystem Model

The human ecosystem model as presented by Bubolz, Eicher and Sontag (1979) offers a framework from which the interaction of an individual with the travel and tourism industry can be examined. The ecosystem model explains the interdependency of humans with the environment and is concerned with transactions occurring between the organism and its environment. "Environment is the sum total of the physical, biological, social, economic, political, aesthetic, structural surroundings for organisms" (Federal Interagency Committee on Education, 1976, p. vi). Within the ecosystem model, three conceptually distinct yet interrelated environments are proposed.

The natural environment encompasses the physical, biological and time-space constraints faced by any and all organisms. Topography, climate and everything within the natural world are included within the natural environment.

Man's attempt to alter the natural environment and/or to create, through social and cultural institutions, a means of dealing with the human existence is encompassed within the human-constructed environment. Resource allocation decisions, as discussed by McMurry and Davis (1954), should be influenced by identification of those physical conditions people believe necessary for recreation. Often, in order to achieve an environment conducive to recreation, the commitment of capital investment is required for the development of recreation facilities.

Finally, the human behavioral environment includes the interaction of people with each other as well as human values, attitudes and emotions. The human constructed environment also includes the biological, physical, social and psychological needs of the organism. In essence, this environment includes those things "necessary for an existence beyond survival" (Bubolz, Eicher & Sontag, 1979, p. 30). The fit of specific tourism components within the ecosystem framework will be discussed later in this chapter.

Impact of Demographics on Travel

Income is probably the most significant determinant of a household's probability of traveling and upon its level of travel expenditures (Hagemann, 1981). Almost one-half of the total expenditures for pleasure travel comes from households in the top 20% income bracket (Linden, 1980). Mak, Moncur and Yonamine (1977) reported that, not unexpectedly, higher income visitors to Hawaii spent more per day and stayed longer than did their lower income counterparts. Similarly, Ethridge (1982) suggested that international travel originates in areas of greater economic development.

Education also influences the propensity to travel. Jorgenson (1976) reported that 45% of travelers in the 1972 National Travel Survey had completed some college, whereas only 22% of the total population had a similar education level (1976, p. 10). Educational attainment of the head of household is likely to significantly influence travel behavior, ceteris paribus. A higher education increases ones awareness of the world and appears to be a powerful predictor of a household's propensity to travel (Hagemann, 1981).

Just as education influences the propensity to travel, it also influences vacation expenditures. Mak, Moncur and Yonamine (1977) reported that visitors to Hawaii who were more highly educated spend less on average per day than did less educated visitors. Mak et al. suggested this could indicate that less educated visitors were prone to equate spending money with fun. Linden (1980) and Hagemann (1981) approached the issue of education as an influencing factor on vacation expenditures from a macro perspective. Both researchers found that persons with higher educational attainment spent more (in the aggregate) on travel than did less educated persons. When examining the influence of a graduate education upon travel expenditures the research findings differed, however. Hagemann (1981) found that households in which the head had attended graduate school spent less on travel than at the next lower level. Conversely, Linden reported that: "Dollar expenditures for vacations by householders whose head has more than four years of college runs two-and-a-half times higher than the all-country average (1980, p. 74).

Children also influence travel behavior. The presence of small children tends to act as a physical constraint on the family. Hagemann (1981) noted that :

> Family composition is also a significant determinant of a household's vacation travel. Young and old children, perhaps representing transitional phases of the life cycle, are the most constraining of the family types examined.

> Independently of the composition of the household, family size is also negatively correlated with travel (p. 232).

In other words, larger families have a decreased propensity to travel and take shorter pleasure trips (Ethridge, 1982). The presence of children younger than six years and older than 18 years had a more negative effect on travel than did children in the intervening years. Also, the greater the number of children under 18 years, the lower were household expenditures for travel (Hagemann, 1981). In fact, spending on vacation trips for families with children under six years of age is approximately 30% below national averages. Once the youngest child reaches 18 years of age, however, vacation expenditures exceed the national average by almost 50% (Linden, 1980, p. 73).

Age is another influencing factor in one's propensity to travel. The National Travel Survey revealed that only one-third of those persons under 25 years reported any traveling. Sixty percent of all travelers were in the years of 25-64. As the "baby-boomer's" age, it has been predicted that in 1985, 115 million persons would be in these prime travel years (Jorgenson, 1976, p. 10). Age was also a variable in a study of domestic travelers to Hawaii. Age was found to influence length of stay and amount of expenditures while in the test area. Persons in the young and the retired age groups stayed significantly longer than

those in the middle years although they spend significantly less per day (Mak et al., 1977). While is is important to be aware of the influence of demographics on the travel industry, it should be noted that demographic and socioeconomic characteristics, while enabling certain kinds of consumer behavior, are not sufficient to guarantee a particular behavior (King, 1979).

Determinants of Tourist Area Attractiveness

Many in the tourism industry operate from the premise that tourists are attracted to a destination possessing particular cultural or other special attributes; these persons believe that attributes pull tourists to an area (Crompton, 1979). Var, Beck, and Loftus (1977) examined factors of tourist attractiveness in regions of British Columbia, Canada and Turkey. Expert judges ranked the two areas on five factors of tourist attractiveness. These factors were: natural factors such as natural beauty and climate; social factors such as artistic and architectural features, festivals, distinctive local features, fairs and exhibits, and attitudes toward tourists; historical factors such as native historical settlements, religious significance and historical prominence; recreational and shopping facilities such as sports and educational facilities, facilities conducive to health, rest and tranquility, nighttime recreation, and shopping facilities;

and infrastructure, food and shelter (p. 27). They found that the factors of natural beauty, climate, food and shelter were ranked highest by tourist experts. In British Columbia two major sub-factors of attractiveness were identified. These were natural beauty and climate. Historical prominence was important for Turkey as it was for British Columbia. Sports facilities were ranked next in importance. Attitudes of the local populous towards tourists was ranked as seventh in terms of relative importance by tourism experts.

Tourism attractiveness was also examined by Ritchie and Zins (1978). As shown on Table 1, natural beauty and climate, cultural and social characteristics, sports, recreation and educational facilities, shopping and commercial facilities, regional infrastructure, price levels, attitudes towards tourists and accessibility of a region were identified as major variables influencing attractiveness of a tourist destination. Based on responses of randomly selected individuals, they found that natural beauty and climate were the single most important factors in attractiveness of an area. Cultural and social characteristics were judged to be second in importance followed by attitudes toward tourists, accessibility of the region, regional infrastructure, price levels, sport/recreation facilities and shopping/commercial facilities (p. 260).

Table 1

Tourist Attracting Attributes Tested

| Variable | Researchers: Var, Beck & Loftus 1977 | Ritchie & Zins 1978 | Goodrich 1977a,b; 1978 |
|---|---|---|---|
| Natural beauty | X | X | X |
| Climate | X | X | |
| Cultural activities | Artistic & architectural features; Festivals, distinct local features; Fairs & exhibits. | X | X |
| Attitudes toward tourists | X | X | |
| Pleasant attitudes of the people | | | X |
| Historic factors | X | X | X |
| Recreational facilities | X | X | X |
| Shopping facilities | X | X | X |
| Food | X | Price | X |
| Shelter | X | Price | X |
| Infrastructure | X | X | |
| Educational facilities | X | X | |
| Rest & relaxation | | | X |
| Entertainment | X | | X |

Goodrich (1977a; 1977b; 1978), working under auspices of the American Express Corporation, obtained information about tourist benefits sought by international travelers. Goodrich obtained information about frequency of visits from 230 respondents to nine selected regions, perceived similarities of the regions, and preferred ranking of the regions as vacation destinations. Respondents were also asked to evaluate the regions on 10 tourist-attracting attributes and to specify how important these attributes were in a vacation destination decision (Goodrich, 1977a).

The attributes introduced by Goodrich (1977a) are: [1] availability of facilities for water sports (e.g., beaches, sailing, swimming, water skiing, etc.); [2] availability of facilities for golfing, tennis, etc.; [3] historical and cultural interest (e.g., museums, monuments, historical buildings, the people, their traditions, music, etc.); [4] scenic beauty; [5] pleasant attitudes of the people; [6] opportunity for rest and relaxation; [7] shopping facilities; [8] cuisine; [9] availability of entertainment (e.g., night life); and [10] availability of suitable accommodations. Benefit bundle analysis was used to determine the most highly valued attributes or benefits.

An assumption of this analysis was that, whether consciously or unconsciously, tourists use these benefit bundles in the selection of one tourist destination over another. Three clusters were identified. Group 1 was

composed of the most highly valued benefits. Benefits most highly valued by the sample were scenic beauty, pleasant attitudes of local population, and availability of suitable accommodations. The second most highly valued cluster consisted of opportunity for rest and relaxation, historical and cultural interests, cuisine, and availability of facilities for water sports. The last and least valued cluster consisted of availability of entertainment, shopping facilities, and availability of facilities for golf and tennis (Goodrich, 1977b). (See Table 1 for a comparison of tested tourist attracting variables.)

## Tourist Attracting Attributes within an Ecosystem Framework

Attributes of the tourism experience are components of a tourist's attitude about any area. Attributes as well as attitude fit within the ecosystem framework and demonstrate interactions between environments. The attitude a tourist holds fits within the human behavioral environment and influences transactions between the organism and the environment. Attributes of the tourist area are influential in the formation of attitudes.

Scenic beauty is a result of topographical and other natural features and therefore part of the natural environment. Concepts of beauty, however, are encompassed both within the human behavioral environment and the human

constructed environment. Concepts of beauty are influenced by personal psychological make-up. That is, beauty is influenced by values, attitudes and emotions. Beauty is also a culturally and societally defined concept and therefore is part of the human constructed environment.

Facilities related to water sports and any other activities dependent upon natural features exhibit interactions of the natural environment and the human-constructed environment. While development of facilities for these types of sports are human constructed, they are also an outgrowth of the natural environment. If, for example, a body of water is not available then this attribute would not exist in the area. The body of water can, however, be humanly constructed through means such as in the damming of a river. Facilities for golf and tennis illustrate the interaction of the human-constructed environment with the human-behavioral environment. Once again, facilities development is a way man modifies the natural environment. As such it is part of the human-constructed environment. Desires for these kinds of facilities, however, may stem from personal needs for physical activity combined with desires for social interaction. In this sense then, facilities for golf and tennis are a part of the human behavioral environment.

Historical and cultural interests, such as a desire to learn about traditions and partake in cultural activities

are a part of the human-constructed environment. Facilities housing cultural artifacts are developed by man. Reverence of people for things of historical or cultural significance are an outgrowth of socially determined values.

Opportunities for rest and relaxation, cuisine, availability of entertainment and availability of suitable accommodations all demonstrate interaction of the human-constructed environment and the human-behavioral environment. Opportunities for rest and relaxation may result from man's adaptation of the natural environment thus allowing time for rest and relaxation. Additionally, the desirability of rest and relaxation is determined by social norms and values. Psychological behavior, a component of the human behavioral environment, is also a factor in the desirability of rest and relaxation.

Cuisine is the result of man's adaptation of organisms within the natural environment for purposes of human nutritional requirements and is therefore part of the human constructed environment. However, acceptable food sources are not only defined by nutritional requirements but as shown by Harris (1985), are culturally defined as well. Depending upon how broadly one defines cuisine, it can be a part of the human behavioral environment. Beyond the fact of ingestion for nutritional purposes, eating and drinking can be a social activity. The time set aside for eating

allows for group interaction and is influenced by personal values and attitudes toward food.

Availability of entertainment and suitable accommodations are both influenced by availability of facilities for these activities and by culturally defined concepts of entertainment and "suitability" of accommodations. As such, both are parts of the human constructed environment. Often entertainment allows for social interaction at some level and fulfills certain social and psychological needs. Choice of accommodations can also be influenced by these needs. As such, both are components of the human behavioral environment.

Shopping facilities are essentially part of the human constructed environment. This is an example of human alterations of the natural physical environment and development of a cultural component, business. Product offerings of businesses are examples of man's adaptation of materials in the natural environment.

Pleasant attitudes of people are a component of the tourism experience which is essentially a part of the human behavioral environment. Thoughts, motives and values affect the desire for this attribute. Interactions relatively free from conflict and strife may be the underlying motive in this factor. The ten tourist attracting attributes of Goodrich's (1978) (that is,

availability of facilities for water sports; availability of facilities for golfing, tennis, etc.; historical and cultural interest; scenic beauty; pleasant attitudes of the people; opportunity for rest and relaxation; shopping facilities; cuisine; availability of entertainment; and availability of suitable accommodations) will be used in this study.

Attitude toward a Region

Image is the perception an individual has regarding a region and its ability to satisfy that person's vacation needs and desires. The image of a tourist region is generally more favorable for users than for non-users. Generally, however, both groups may agree regarding essential characteristics of a region (Hunt, 1975).

A problem encountered when examining tourism is that most research examines reactions or images of consumers as opposed to potential users. Tourist satisfaction with a region is often the result of positive experiences. In attempting to shape product image, those involved with developing strategies are faced with an additional difficulty of determining perceived image. Scott, Schewe and Frederick (1978) found that tourists traveling more than 200 miles from a region viewed that region substantially different from those tourists located closer. One possible explanation for this is that persons

in closer markets have an equal or even greater opportunity for similar tourist-related experiences in their own region and are, thus, less interested or able to distinguish any difference between these regions. Those in nearby markets may have greater knowledge of an area and may perceive the region as being similar to their own. Persons in distant markets may know of only selected famous attractions and may perceive significant differences between tourist regions based upon their knowledge of these attractions. The ability or inability to distinguish differences in regions may lead to changes in regional development, promotion and public policy. In markets where there is an inability to distinguish differences among regions, it may be beneficial for tourist centers to engage in cooperative promotion programs. In other markets where the consumer can distinguish the differences, it may be best to maintain individual efforts (Hunt, 1975).

## Market Segmentation

Market segmentation is a technique used to divide a heterogeneous market into homogeneous sub-groups or market segments. It is based upon the idea that a market is composed of subgroups of people and that each of these subgroups has different, specific needs and wants (Barnett, 1969). It is a technique used to adjust the market offerings to consumer requirements (Smith, 1956). Selection of the best subset of marketing mixes from all available mixes is the purpose of this strategy (Winter, 1979). For purposes of marketing, the behavior of groups and not of individuals is of importance (Bass, Tigert & Lonsdale, 1968).

Segmentation has alternatively been referred to as an aggregative and a disaggregative process. Smith (1956) suggests that segmentation is a disaggregative process and will identify different demand schedules where previously only one was recognized. Segmentation, however, is an aggregative process in so far as individual observations are concerned. Subsegments are aggregated when they are composed of individuals with similar patterns (Winter, 1979). The net effect of the aggregative process is to reduce the number of respondents to a more manageable number of groups (Green, 1977).

Market segmentation can be based on one of several analytical approaches. A unique research design is required for each segmentation technique.

1. A priori segmentation is an approach whereby the researcher pre-defines the clusters. The process of defining the segments is based on managerial decisions concerning the clustering descriptor. For example, using a priori segmentation a researcher may

decide to segment respondents based upon whether their chosen toothpaste is a paste or a gel.

2. Cluster-based or post hoc segmentation is an approach by which segments are developed based upon some set of "relevant" variables. Cluster-based segmentation differs from a priori segmentation only with respect to the basis upon which segments are selected. Respondents are classified into clusters based upon the similarities of their multivariate profiles. In this process, researchers have no prior knowledge about the number nor the size of the clusters until after the analysis is completed. With this technique, only the set of variables used for clustering are pre-specified (Green, 1977; Wind, 1978).

For more information on these techniques, consult Wind (1978).

Segmentation has most frequently been based on demographics, behavioral characteristics and geography. Demographics and geography do not give a full picture of the market segments however (Mason & Mayer, 1981). People residing in the same geographic region or those in the same age bracket are not all alike. Behavioral characteristics, specifically attitudes, can give a fuller picture of market segments. An understanding of attitudes commonly shared by people in market segments can aid in development of

marketing strategies aimed at specific targeted segments (Assael & Roscoe, 1976).

## Attitude Theory

From its relatively simple beginnings as a unidimensional concept, attitude has grown into a complex, multidimensional concept. Once believed to be composed solely of an affective component, an attitude is now believed to be comprised of affective, cognitive and conative components. The affective component is an evaluation of some object, how "good" or "bad" it is perceived to be. The cognitive component consists of knowledge, perceptions, opinions, thoughts and beliefs about the attitude object, while the conative component concerns the manner in which the response or attitude influences behavior toward the object. The belief component of an attitude model is a concept which has received considerable attention (Fishbein, 1965, 1967a, 1967b, 1967c, 1975; Fishbein & Ajzen, 1972). Beliefs concern the nature of the object under consideration and "the types of actions which should be taken with respect to them" (Fishbein, 1967b, p. 257). Theoretically six types of beliefs exist. These types are:

1. beliefs about component parts of the object;

2. beliefs about an object's relationship with other objects or concepts;

3. beliefs about characteristics, qualities or attributes of the object;

4. beliefs about whether the object will lead to or block attainment of various goals or valued states;

5. beliefs about what should be done with respect to the object; and

6. beliefs about what the object should, or should not, be allowed to do (Fishbein, 1967b, p. 259).

These beliefs are the type which have generally been considered as comprising the cognitive and conative components of an attitude.

Theoretically, Fishbein and Raven (1962) made a distinction between "belief about" and "belief in" an object. The relationship between an object and another object would be considered "beliefs about" an object. Fishbein and Raven (1962) indicate that a person's "beliefs about" an object is the probability statement that a relationship exists between the object of belief and another object. "Belief in" an object refers to the existence of the object. "Belief in" then is a position which an individual ascribes to a statement on a probability dimension. In other words, it is an assertion

by an individual that a given object or quality (as indicated by the statement) does or does not exist. For example, when people state their philosophical views on the existence of a supreme being, this is the same as saying the person is stating a "belief in" a god. People can, thus, agree on "belief in" an object but diverge greatly on "belief about" that same object.

While said to be composed of affective, cognative and conative components, most attitude scales usually measure the affective or evaluative aspect of an attitude (Rosenberg, 1960). Fishbein believes, however, that a theoretical model in which only the affective component is treated as attitudinal and in which cognitive and conative are linked to beliefs should permit a more productive approach to the study of attitudes (Fishbein, 1967a).

Expectancy-Value Models

Fishbein's model falls in the general class of expectancy-value models. When using a model in this category the researcher proposes that an attitude and the performance of some behavior is a function of what one believes and how much value one places on that belief. Cohen, Fishbein and Ahtola (1972) suggest that expectancy is the probability that a product possesses some given attribute. Fishbein's model leads to the hypothesis that a person's attitude is a function of the strength of a held

belief and a personal evaluation of that belief.

The theoretical model presented by Fishbein (1967c) ($A_o = \Sigma B_i a_i$) is essentially an adaptation of Dulany's "theory of prepositional control" applied to social behavior. Liberally interpreted, Dulany's theory proposes that an individual's intention to perform a specific act in a given situation is:

1. a function of the belief concerning the result or outcome of that act in a specific situation;
2. an evaluation of the behavior itself;
3. the subject's belief about what should be done in a specific situation; and
4. the amount of motivation to comply with an expected behavior.

While developed "within the context of verbal conditioning and concept attainment", Dulany's theory "leads to the prediction of overt behavior" (Fishbein, 1967c, p. 487).

Dulany proposes that an attitude toward an object can be predicted if one has knowledge of an individual's beliefs about an object and has knowledge concerning the evaluation of those beliefs. An examination of Fishbein's and Dulany's models reveals that both theorists believe two

separate components influence behavior; and that for each behavior and situation, the importance of the components in determining a behavioral intention varies among individuals. Finally, Fishbein and Dulany both propose multiplicative regression models.

In addition to similarities between Fishbein's model and the model proposed by Dulany, Fishbein's model is also similar to the subjective expected utility model ($SEU = \Sigma SP_i U_i$) from Decision Theory (Fishbein & Coombs, 1974, p. 102). This expectancy-value model deals with an individual's belief about consequences of performing an act or behavior. The crux of this model is that when an individual is presented with several alternatives, the tendency will be to select an alternative that maximizes subjective-utility. In other words, the model does not focus on a belief about an alternative itself but concerns belief about consequences or utility maximization of the performance of alternative behavior or acts. In this sense $S_i P_i = \Sigma B_i$. The model also deals with an individual's evaluation of the consequences of an action. In this instance, $U_i$ is approximately equal to $a_i$. Therefore, SEU (subjective expected utility) may be reinterpreted as a person's attitude toward a given behavior. At this point, it is important to note that the subjective expected utility model appears to assume a correlational relationship between SEU and behavior. The Fishbein model

does not assume a relationship between attitude and behavior.

Another model often compared with Fishbein's is Rosenberg's (1956) model of perceived instrumentality and value importance. Both models are based upon the same general concept that a person's attitude is a function of the strength of a held belief and an evaluation of that belief. Rosenberg used the consistency principle to predict that the affect attached to an object will be a function of the "perceived instrumentality of the attitude object" and the "value importance" (Fishbein, 1967a, p. 394). In other words, the more a person perceives that an object leads to attainment of some positively valued state, the more that person will hold a positive attitude toward that object (Cohen, Fishbein & Ahtola, 1972).

Rosenberg's model possesses a means-ends orientation. It was developed to quantify the idea that an attitude toward any object is "related to the ends which the attitude serves" (Peak, 1955, p. 153). The general theoretical underpining of Rosenberg's model is that when a person has a relatively stable tendency to respond either positively or negatively to an object, such a tendency is accompanied by a cognitive structure consisting of beliefs about the ability of that object to attain or block attainment of some valued state. The positive or negative sign and the extremity of the felt affect are correlated

with the content of its associated cognitive structure. Thus, a strong and positive affect toward some object is associated with the belief that an attitude object tends to aid in the attainment of some desired value. Likewise, a strong, negative affect is associated with the belief that an attitude object tends to block the attainment of some important value (Rosenberg, 1956). Moderate positive or negative affect is associated with beliefs that relate the attitude to less important values. A moderate position can also indicate less confidence on the respondent's part in a direct instrumental relationship between the object and values under examination (Rosenberg & Hovland, 1960).

Computationally Rosenberg's ($A_o = \Sigma I_i V_i$) and Fishbein's ($A_o = \Sigma B_i a_i$) models are the same despite having been derived from cognitive consistency theory and behavior theory respectively (Mazis, Ahtola & Klippel, 1975). Some differences in the models do exist, however. Aside from the differences previously noted, Fishbein makes a distinction in his theory between "belief in" and "belief about" an object whereas Rosenberg fails to make the distinction. Fishbein's $B_i$ measures how likely it is that that an object is associated with some other object. Rosenberg's $I_i$ measures to what extent the object leads to or blocks attainment of the desired state.

The Fishbein Model

The Fishbein model in its simpliest form is:

$$A_o = \sum_{i=1}^{N} B_i a_i$$

Where:

$A_o$ = attitude toward some object "o"

$B_i$ = strength of the belief "i" about "o"; i.e., the person's subjective probability that "o" is associated with some other object "X "

$a_i$ = evaluative aspect of B ; i.e., the subject's attitude toward or evaluation of "x "

N = number of beliefs about "o"

(Triandis & Fishbein, 1963)

This model focuses entirely upon an individual's attitude toward some object and not on the attitude toward a behavior.

The Fishbein model ($A_o = \Sigma B_i a_i$) is an additive, multiplicative process. This indicates the theoretical belief that a person's attitude toward any object is a function of the total amount contributed by each belief. It expresses the idea that an attitude toward an object will increase indefinitely with the addition of positive beliefs. By using a summative model, each additional piece of positive information serves to increase the total attitude. Consistent with expectancy-value models, each additional piece of information is weighted by the

individual's probability estimate. Recall that an attitude is determined by a limited number of salient beliefs. Because these beliefs are arranged in a hierarchical manner, inclusion of additional beliefs contributes successively less to a total attitude.

Fishbein's model deviates from other models through the use of a summative process. Most theories are based on the notion of "consistency"; that is, they predict that a person's attitude is a function of the mean amount of affect contributed by each belief. The theoretical difference is therefore, a difference between viewing attitude organization as a process of "cognitive summation" or "cognitive balance" (Fishbein & Hunter, 1964, p. 505). The implication of summation versus averaging is noteworthy. If a summation process is used, addition of favorable beliefs will tend to increase the attitude. Summation "would predict that the amount of attitude change is an increasing function of the number of new beliefs learned" (Fishbein & Hunter, 1964, p.506). Contrary to this, averaging or balance theory predicts that addition of new positive information may lower an individual's attitude. The theoretical distinction is that, according to a summative model, the addition of mildly held beliefs to highly favorable beliefs should raise the overall attitude but will lower an attitude according to the averaging model. Although no agreement concerning

averaging versus adding has been reached, a linear weighted model yields a fairly accurate prediction of an overall attitude (Fishbein & Hunter, 1964).

Almost every measurement instrument of attitudes obtains it's index through an examination of beliefs and an evaluation of beliefs. In most standard measurement processes, subjects are asked to give a probability rating as a measure of the strength of a belief. Respondents are also asked to evaluate the attribute. Although the logic of this approach underlies most standard attitude instruments, an error in the logic may exist. The standard procedure measures only the belief strength and assumes the attribute evaluation to be the same for all individuals. Fishbein (1963, 1965, 1967b) argues that responses to any belief statement can be used as an indication of the attitude under examination provided an individual's personal evaluation is known and that the belief and evaluation can be measured simultaneously. In accordance with the expectancy-value models, the summed products of $B_i$ X $e_i$ can serve as a measure of attitude.

## Research Difficulties

Research related to tourism is in its infancy. Much tourism research is descriptive and is related to specific problems within a particular segment of the industry. A

problem encountered in tourism research is that the tourist product is "an intangible composite of many interrelated components" which serves to increase the difficulty of measurement (Pizam, Neumann & Reichel, 1978, p. 316). Compounding this problem is the dearth of meaningful, comparable travel data (McIntosh, 1973). Much available data are macro in nature.

Macro or aggregate data are essential in answering questions fundamental to the tourist industry. These data contribute to forecasting demand and evaluating impacts of tourism on local economies. This type of research can answer tourist industry questions related to who, where, how much and when. Use of micro or individual data is essential in examining questions related to individual travel behavior and factors important in the process of making travel decisions (Ritchie, 1975). This latter area is the most neglected in travel research, but one which people in the business of promoting resort areas require in order to develop proper product mixes.

The aggregate traveling population has been examined by researchers (Jorgenson, 1976; Ritchie, 1975) in order to delineate users of the tourism product. One problem researchers have encountered is a reluctance of tourists who feel insecure in a particular environment to participate in the research project. Refusals of this part of the traveling population may introduce strong bias in

results (Ritchie, 1975). Another problem encountered is that some studies focus upon the individual and gather information from an individual rather than on a family basis. In order to better understand the forces involved in the decision process, researchers should recognize that, in many cases, travel is a family activity (Carlson, 1979). Accordingly, by failing to define the proper unit of study as the family, a researcher may fail to explain actual travel behavior.

The nature of the population introduces another research difficulty. The population under study is mobile thereby compounding the difficulty of having a probability sample, that is, one which is truly representative of the population. Researchers are often forced to rely upon a sample drawn from time rather than a geographic frame. As a result of this complication, callbacks and an examination of refusal rates and reasons are difficult. Because of these difficulties, greater use of non-random samples or a convenience sample is more often the norm. These samples however, do not permit derivation of valid statistical errors.

Expenditures for travel is an area which has received a great deal of attention. While tourist expenditure measurement is interesting, certain factors affect data reliability. Individuals experience difficulty in recalling details concerning timing, location, and levels of expenditure for any particular product (Ritchie, 1975). Generally, individuals will accurately recall facts concerning single, large, infrequent or personally used purchases. On first glance, travel appears to fulfill these criteria. However, upon closer examination, the travel experience is composed of numerous, often insignificant, expenditure decisions. As a result, total reported expenditures are often inaccurate and seldom give satisfactory estimates of actual amounts spent.

# CHAPTER III

## Methods and Procedures

### Design of the Questionnaire

#### Measurement of Belief and Affect Scores

Beliefs were measured with a seven-point Likert-type scale (anchored at 1 meaning "offers very much" and 7 meaning "offers very little"). The seven step scale was used instead of the usual five step scale because, in terms of psychometric theory, it is always more advantageous to use more rather than fewer steps (Nunnally, 1970). Individual rating scale reliabilities increase with the number of steps (Guifford, 1954). Increased reliability tends to level off at about seven steps, however, and after 11 steps little increase in reliability is gained by additional steps (Nunnally, 1970, p. 425). Additionally, Symonds (1924) reported that seven is the optimal classification level.

Utilizing a self-administered questionnaire, subjects were asked to evaluate the amount of the ten tourist attracting attributes offered by the test area. The tourist attracting attributes were those introduced by

Goodrich (1977a; 1977b; 1978).

Affect was measured on a seven point Likert scale anchored at 1 (very important) and 7 (very unimportant). Subjects were queried about the importance of the tourist attracting attributes in a tourist's decision to visit a resort area. Respondents were asked: "How important do you think the following factors are in tourists' decisions to visit a resort area?".

Use of the Likert scale as a measurement device has been justified by Fishbein. According to Fishbein (1967b), use of Likert scaling implicitly indicates that attitudes are determined by the strengths of the beliefs and disbeliefs about the object. The use of a Likert scale indicates that attitude organization is viewed as a process of cognitive summation. Theoretically, the Likert scale is the technique appropriate for use with the Fishbein model. Tittle and Hill (1973) in offering an assessment of the Likert scale, point to it as being a better scale to use than semantic differential because it has the advantage of greater reliability and specificity. In addition,

> the Likert technique also seems to have the particular advantage of providing for the operation of an intensity factor. Because scoring is influenced by the degree as well as direction of response to each item,

> intensity judgments weight the final scores assigned to an individual (Tittle & Hill, 1973, p. 48).

In using the Likert process individuals can be ranked according to their individual degree of favorableness or unfavorableness in addition to ranking them according to how strongly they feel. Two individuals may hold a similar favorable belief but will be ranked differently because of the intensity of belief. An individual who holds a favorable belief but who does not feel intensely about it will be ranked lower than the individual who holds a similar belief but who intensely supports the belief.

## Questionnaire Development

The questionnaire was designed to measure the components of the Fishbein model (1967a). An initial questionnaire was developed by a team consisting of faculty members and graduate students in the Department of Human Environment and Design, College of Human Ecology. The instrument was pre-tested on 24 sophomore Merchandising-Management students at Michigan State University, East Lansing. Any questions the students had during administration of the instrument were noted. After completing the questionnaire, the students were asked to indicate items which they found difficult to understand. Any response abnormalities were noted as well. Based on these responses, some of the question stems were rewritten and the questions were refined. The ten tourist attracting attributes yielded Crombach's alpha reliabilty of .86. The questionnaire was approved by the University Committee on Research Involving Human Subjects, Michigan State University.

The questionnaire is included in Appendix A. Assuming that tourists rationally use the concept of attribute bundles when making vacation destination decisions the ten tourist attracting attributes (Goodrich, 1978) were incorporated into the questionnaire. The relationship between the questionnaire components and the Fishbein model are specified below.

| Fishbein Component | Questionnaire |
|---|---|
| $B_i$ = Beliefs | Questions 1 - 10 |
| $A_i$ = Affect | Questions 11 - 20 |

Additional information to determine the influence of the economic situation and gasoline restriction upon general vacation decisions was elicited. The remainder of the questions asked of respondents concerned their mode of transportation, reasons for visiting the area, travel distance, length of visit, number and composition of travel party, expenditures while in the area and frequency of visit to the Traverse City area and other resort areas in

Michigan. Some of the foils for "reason for visit" are those used by the Travel Bureau, State of Michigan, as reported in Initial Findings and Results of the Base Line Survey for the Say Yes to Michigan Campaign. Other options for this category are variations of those used by the United States Travel and Tourism Administration's In-Flight Survey of International Travelers (1984). Information was also elicited regarding anticipated expenditures while in the Traverse City area. These expenditure items were developed to mirror as closely as possible the tourist attracting attributes. Basic demographic data were gathered. The questionnaire consisted of 45 items.

## Data Collection

Sample site selection was based upon two criteria. The community had to be heavily tourist dependent and it had to be located at least 100 miles from a major metropolitan area. Traverse City, Michigan, located 244 miles from Detroit and 310 miles from Chicago, was the selected study site. The Traverse City area is heavily tourist dependent and is a well-established destination for Michigan tourists. The daily seasonal population for the Grand Traverse area, as a whole, varies from under 10,000 in March, the low point for tourist trade, to over 100,000 in July, the peak of the Traverse City area tourist season (Grand Traverse Area Data Center, 1980).

A trained data collection team consisting of the principal investigators and five Human Environment and Design graduate students collected the data over Memorial Day weekend in 1981. Traditionally, this is the first weekend of the vacation season and one during which many people travel. These persons were believed to be representative of the early vacation traveler. Using an activity block sample design, data were collected at two campgrounds during the late afternoon, at the entrances to two popular restaurants during the breakfast and dinner hours, and at the community's only shopping mall during the entire hours of operation. At the campgrounds, an individual from every third camp was considered to be a potential respondent. At the other locations, every third individual or if a group was present, one individual from every third group was considered to be a potential respondent. At all data collection locations, potential respondents were approached and asked if they were tourists to the area. If the person responded in the affirmative, the next question concerned willingness to participate in the study. Potential subjects were told that the study was being conducted by researchers at Michigan State University and would require approximately 10 to 15 minutes of their time. Potential subjects were verbally assured of anonymity. Willing respondents who had indicated that they were tourists were given a questionnaire and were supplied with a clipboard and pencil to allow for ease of

questionnaire completion.

All team members participated in data collection at the campgrounds. At these locations, a team member waited at each campsite for the respondent to complete the questionnaire. At the other locations, team members divided into smaller data collection groups consisting of two or three people. Two or three team members were located at each of the selected restaurants. Questionnaires were given to willing and qualified respondents upon their entrance to the restaurant and were collected upon the respondents exit from the establishments. Two team members collected data at the shopping mall's central seating area. At all data collection sites, team members were available to answer any questions respondents had concerning questionnaire items. In all instances, permission to use the establishments as a data collection site was granted by management personnel of the businesses. Upon completion of the questionnaire, the subjects were briefed regarding the nature of the study. Respondents were told that the focus of the study was to determine what features attract tourists to a specific area. Because of the nature of the test instrument, many of the respondents indicated that they were already aware of the nature of the study. At the end of the three day data collection period, 315 questionnaires were completed.

## Hypotheses and Statistical Analysis

The selected statistical analysis techniques will be discussed and justified in the following section. The application of these techniques to the derived hypotheses will be indicated.

### Cluster Analysis

Based upon the assumption that attitude communalities exist among tourists, an objective of market segmentation is the definition of clusters or identification of unique groups. Cluster analysis was used in this study as a means of partially achieving this objective.

Cluster analysis is a classification tool used to separate a sample into mutually exclusive groups based on similarities among observations. The cluster procedure is "primarily concerned with description rather than inference; objects rather than variables..." (Green & Tull, 1975, p. 564). When no *a priori* information concerning attribute segments is available, cluster analysis seems to be the most appropriate technique (Mazanec, 1984).

The major problem for the user of cluster analysis is that of defining the cluster. How does one know that the grouping of the objects is the "correct" grouping? There are, in any data set, many meaningful groups (Anderberg, 1973). "There are currently no clear guidelines for determining the boundaries of clusters or deciding when observations should be included in one cluster or another" (Punj & Stewart, 1983, p. 136). The criterion for admission to a cluster is, therefore, rather arbitrary.

In this study, cluster analysis was based on a unidimensional score representative of the overall attitude toward the Traverse City area. For each respondent, the belief score (B) as represented by questions one through ten and the evaluation score (A) represented by questions 11 through 20, was multiplied for each attribute (i.e., water sport facilities; non-water sport facilities; historic and cultural interest; scenic beauty; pleasant attitudes of the people; opportunity for rest and relaxation; shopping facilities; cuisine; availability of entertainment; availability of suitable accommodations). Next, the attribute scores were summed to produce a single, unidimensional score ($T_C$) representing the overall attitude. $T_C$, therefore, represents a bundle of attributes. This multiplicative, summative process is in accordance with the Fishbein model (1967c) discussed previously.

Cluster analysis is a heuristic technique. Gordon (1981) suggests that one should not accept uncritically the results of any one clustering procedure because all clustering routines will reach a solution even when no natural groupings occur in the data (Punj & Stewart, 1983).

In this study, a two-stage clustering procedure suggested by Hartigan (1975) and by Punj and Stewart (1983) was used. The BMDP2M clustering routine (i.e., Cluster Analysis of Cases) was used to develop a preliminary cluster solution. The BMDP2M routine is an agglomerative method through which N observations are fused into clusters or groups (Everitt, 1974). In this analysis, an additional specification of centroid cluster analysis was used with the BMDP2M routine. With this specification, groups are depicted as lying in an Euclidean space. The distance between the groups is defined as the distance between the group's centroids.

With the Clustering of Cases routine, observations representing the smallest distance are fused first. Then, at each stage, pairs of observations are chosen based on the criteria that those selected contribute the smallest increase possible to total within-group sum of squares (Gordon, 1981). The result of this process is a dendrogram or tree diagram which pictorially presents a two-dimensional illustration of the fusion process at each successive level. Eventually, the agglomerative methods result in all cases or observations being fused into one group.

The next stage in the clustering process is the clustering of cases by an iterative partitioning analysis, BMDPK-Means. The K-Means routine was selected because it "appears to outperform both Ward's (minimum variance) method and the average linkage method if a nonrandom starting point is specified" (Punj & Stewart, 1983, p. 138). As suggested by Punj and Stewart (1983), the K-Means analysis was carried out on a randomly selected split sample. Group partitions in the BMDPK-Means clustering algorithm were modified by moving cases from one group to another when the movement reduced the sum of squares. Relocation or iteration continued until the minimum sum of squares was reached. When it was impossible to further reduce the cluster sum of squares through observation movement, the iterative process stopped.

The BMDPK-Means program presents an analysis of variance comparing the between-cluster mean square to the within-cluster mean square. However, "the F-ratios should be used to describe differences between the variable rather than to test for significance: that is, the groups are obtained empirically" (Engelman & Hartigan, 1981, p. 464).

As discussed by Arnold (1979) several ways of testing for clusters are available. McIntyre and Blashfield (1980) as well as Punj and Stewart (1983) recommend use of the kappa statistic. Cluster stability or replicability can be tested through use of this statistic. Stability resembles the concept of reliability in classical statistical analysis.

A second way to validate the cluster solution is to determine the cluster solution accuracy. That is, how well does the cluster solution fit the "true" structure of the data? The accuracy approach to cluster validation presents problems in applied research, however. In applied research, the "true" data structure is unknown; if it were, cluster analysis would be unnecessary. "Hence, no direct measure of the accuracy of a cluster solution is possible in applied research" (McIntyre & Blashfield, 1980, p. 226).

Although accuracy and stability are not correlated, stability is necessary for accuracy. Stability can be measured directly; therefore, McIntyre and Blashfield (1980) hypothesized that the accuracy of a solution could be estimated by means of its stability. To test for cluster stability, upon completion of the first clustering routine the observations remaining from the holdout sample were assigned to clusters. The holdout sample was used to determine the accuracy of the prediction.

The kappa statistic was derived as a means of comparing the predicted and observed cluster assignments. It was a test of the stability of the cluster solution.

The kappa statistic is:

$$k = \frac{p_o - p_c}{1 - p_c}$$

Where: $p_o$ = the proportion of units of agreement.

$p_c$ = the proportion of units for which agreement is expected by chance.

(Cohen, 1960, p. 40)

The kappa statistic may vary from +1.0 (indicating perfect agreement) to 0.0 (indicating no agreement) (McIntyre & Blashfield, 1980). The derived clusters and stability of the cluster solution will be discussed in Chapter 4.

Discriminant Analysis

Once the cluster membership was determined, discriminant analysis was used to test for differences between group means. Discriminant analysis provides a means of distinguishing statistically between two or more groups when the dependent variable is categorical and the independent variables are metric (Hair, Anderson, Tatham & Grablowsky, 1979). It allows the researcher to discover whether a composite score of independent variables which differentiates between subgroups exists; to specify this composite score; and to discover its usefulness in determining an individual's group classification (Van de Geer, 1971). The step-wise specification was chosen in

order to achieve a parsimonious model.

Finally, discriminant analysis is a useful technique in the development of consumer profiles. "Discriminant analysis was developed as a method for calibrating a tool for correctly classifying cases" (Daniels & Darcy, 1983, p. 359).

In this analysis, the criterion or dependent variable was cluster group membership and the predictor or independent variables varied according to the hypothesis tested. The canonical variables in the analysis were standardized so that the pooled, within group variances was one and the overall mean was zero. Variable normalization was desirable because discrimination is based on the statistical distance between groups and "statistical distances are measured in units of standard deviations" (Morrison, 1969, p.159).

## Chance Classification

Efficiency of the discriminant function in correctly classifying the sample was tested through use of the hit-ratio. A formula suggested by Hair et al. (1979, p. 102) was useful in determining chance classification when dealing with groups of unequal sizes. With unequal group sizes, "the discriminant function defies the odds by classifying an individual in the smaller group" (Morrison,

1969, p. 158).

$$C\ \text{proportional} = p^2 + (1-p)^2$$

Where: p = the proportion of individuals in Group 1.

1-p = The proportion of individuals in Group 2.

The Hair et al. (1979) equation is stated with a two group example. However, it can be implimented with more than two groups. While a solution should be more accurate than chance, the question of how high the accuracy should be relative to chance is one without a "correct" answer. Hair et al. (1979) recommend that the classification accuracy should be at least 25% greater than chance classification and this level was used in the current study.

Elimination of the biasing problem of correct classification overestimation required use of a split sample. That is, classification accuracy is greater than valid if the individuals used to develop a classification matrix are those used to compute the function. In this study, randomly unique split half samples were used. Although no guidelines exist for the division of a sample, the most popular procedure is to randomly divide the total sample so that one-half of the respondents are in the analysis sample and the remaining half are in the holdout sample (Hair et al., 1979). Group membership probability was considered in sample derivation in an attempt to have equal cluster representation. Group probabilities were based upon the percent of observations assigned to each cluster.

## Hypotheses

The following hypotheses were formulated for analysis. The first three hypotheses test components of the Fishbein (1967a) model. The remaining five hypotheses were used to test for demographic differences and travel behavior differences between groups in an attempt to identify unique cluster characteristics. Hypotheses 1 through 4 and Hypotheses 6 through 8 were tested using discriminant analysis. Hypothesis 5 was tested using a log-linear model.

H1. Differences in attribute scores exist between tourist typologies.

To test H1, the criterion variable was group membership and the independent variables were questions one through twenty. Refer to the questionnaire in Appendix A for exact identification of variables.

Equation 1:

$$Z = W_1(Q1*Q11)+W_2(Q2*Q12)+W_3(Q3*Q13)+W_4(Q4*Q14)+W_5(Q5*Q15)$$
$$+W_6(Q6*Q16)+W_7(Q7*Q17)+W_8(Q8*Q18)+W_9(Q9*Q19)$$
$$+W_{10}(Q10*Q20)$$

Where:

$Z$ = Discriminant score

$W_{1-10}$ = Discriminant weight

$Q_{1-20}$ = Independent variable

Equation 1 examined differences among the typologies based upon the belief score multiplied by the evaluation score. The discriminant weight, W, is "analogous to the interpretation of beta weights in multiple regression" (Klecka, 1975, p. 443).

H2. Differences in beliefs about the degree to which an area possesses an attribute exist among tourist typologies.

To test this hypothesis the following equation was formulated.

Equation 2:

$$Z = W_1(Q1)+W_2(Q2)+W_3(Q3)+W_4(Q4)+W_5(Q5)+W_6(Q6)+W_7(Q7)$$
$$+W_8(Q8)+W_9(Q9)+W_{10}(Q10)$$

H3. Attribute evaluation differences exist among tourist typologies.

To examine the differences among typologies as a result of evaluations or perceived importance of an area's attributes in the tourist's travel decision, Equation 3 was derived.

Equation 3:

$$Z = W_1(Q11)+W_2(Q12)+W_3(Q13)+W_4(Q14)+W_5(Q15)+W_6(Q16)$$
$$+W_7(Q17)+W_8(Q18)+W_9(Q19)+W_{10}(Q20)$$

H4. Demographic differences exist among tourist typologies.

Demographic data were analyzed using discriminant analysis to determine if differences exist between groups. Discriminant analysis requires metric predictor variables, therefore demographic variables in this study were converted to metric values. To test for differences among groups on demographic data, questions 38 through 42 were analyzed. A dummy variable was used for question 41, sex, and Hollingshead's Index of Social Position was used to scale question 38, occupation (Hollingshead, 1957). The other independent variables were: family income (question 39); age, (question 40); and education (question 42). The equation for this analysis was:

$$Z = W_1(Q38)+W_2(Q39)+W_3(Q4\emptyset)+W_4(Q41)+W_5(Q42)$$

H5. Differences in travel behavior exist among typologies.

Travel behavior data were analyzed using a log-linear model in order to determine if differences exist between groups. The log-linear model was used to examine the relationship between variables in crosstabulated, multiway frequency tables. This model "represents the logarithm of the expected cell frequency as a linear combination of effects" and is, in this sense, similar to analysis of variance (Brown, 1981, p. 144). The analysis process consisted of three phases: screening variables for inclusion in the model; testing and comparison of the various models under consideration; and an examination of cell frequencies to determine existence of discrepancies between expected and observed cell values (Dillon & Goldstein, 1984).

The BMDP subprogram 4F was selected because it represents the "state of the art" in cross-classification analysis (Dillon & Goldstein, 1984, p. 336). Differences among groups as a function of travel behavior were tested using the following variables: means of transportation (question 23); reason for visit (question 24); round-trip distance from home (question 25); length of visit (question 26); financial responsibility (question 27); composition of travel party (question 28); frequency of visits to Traverse

City (question 43); and frequency of visits to other Michigan resort areas (question 44).

The proposed model to test this hypothesis was:

$$\ln m = u + u_{q23} + u_{q24} + u_{q25} + u_{q26} + u_{q27} + u_{q28} + u_{q44} + u_{q45} + \text{all } u \text{ interactions}$$

Where:

$\ln m$ = expected cell frequency logarithm

$u_{23-28,44-45}$ = cell frequency parameters

(Dillon & Goldstein, 1984, p. 316)

H6. <u>Differences exist among tourist typologies in regard to travel expenditures.</u>

Group differences in regard to expenditures were analyzed using discriminant analysis. The criterion variable was cluster membership and predictor variables were expenditure responses. Specifically, questions 29 through 37, were used in this analysis. Cluster membership was the criterion variable for the following equation.

$$Z = W_1(Q29) + W_2(Q30) + W_3(Q31) + W_4(Q32) + W_5(Q33) + W_6(Q34) + W_7(Q35) + W_8(Q36) + W_9(Q37)$$

H7. Differences exist among tourist typologies in their travel response to changing economic conditions.

Vacation destination restriction (question 21), and restriction of the length of vacation (question 22) were analyzed by use of discriminant analysis to determine if travel behavior differences exist among groups in their response to changes in the economy. The equation for this analysis was:

$$Z = W_1(Q21)+W_2(Q22)$$

H8. Tourists living more than 200 miles from a region view that region differently from those tourists living closer.

Group membership was derived based upon round-trip travel distance from the resort region to the respondent's home. Groups consisted of those traveling less than 200 miles from their homes and those traveling 200 miles or more from their homes. Based upon these classifications, discriminant analysis was used to test for differences between groups based upon their belief scores (B), questions one through 10. The equation for this analysis was:

$$Z = W_1(Q1)+W_2(Q2)+W_3(Q3)+W_4(Q4)+W_5(Q5)+W_6(Q6)+W_7(Q7)$$
$$+W_8(Q8)+W_9(Q9)+W_{10}(Q10)$$

This analysis was done to determine if tourist traveling

more than 200 miles one way from the Traverse City area have different beliefs about area tourist attracting attributes when compared to tourists traveling less than 200 miles from their homes.

Testing of these hypotheses is the focus of Chapter 4. The findings are discussed in Chapter 5.

# CHAPTER IV

## Findings

This chapter is a summary of the demographic and statistical analysis of the data. The chapter will be divided into three parts: Demographic Information, Derivation of the Clusters, and Testing of the Hypotheses.

### Demographic Information

The sample for this study consisted of 315 individuals visiting the Traverse City, Michigan area during the Memorial Day weekend in 1981. The majority of the respondents (24.9%) were in the 25 to 34 year age bracket. The next age bracket most frequently reported was 35 to 44 years (20.1%), followed by 18 to 24 years (19.4%) and 45 to 54 years (16.2).

The income bracket mode was $25,000 to $49,999 (44.8%), followed by $50,000 and over (17.1%). The most frequently indicated occupation for the head of the household was professional or technical (27.0%) followed by manager or administrator (19.2%).

Approximately 35% of the respondents in this sample indicated they had some college education and 28.2% indicated they were college graduates. Taking this information into consideration, the sample for the Traverse City study could be described as younger (25 to 44 years), well-educated and coming from a white-collar household with an annual income of $25,000 to $49,000. Demographic responses for this sample are provided in Table 43, Appendix B.

To determine how representative this sample is of tourists in the state of Michigan, a comparison of this sample and the sample from a Michigan Department of Transportation (M.D.O.T.) study, Highway Travel Information Centers and Michigan Tourism, 1980 Visitor's Survey (1982) is shown in Table 2.

As shown in Table 2, the Traverse City sample was more affluent than the M.D.O.T. sample. Nearly 62% of the Traverse City sample indicated an annual family income of $25,000 or more whereas only 52% of the M.D.O.T. sample reported a similar income. The Traverse City sample was also younger than the M.D.O.T. sample. In the Traverse City study, 48.2% were in the 35 to 64 year age bracket whereas 64% of the M.D.O.T. sample indicated this bracket. The samples were similar in regards to percentage of respondents in the 25 to 34 year bracket. However, 23.3% of the Traverse City sample was 24 years or younger as compared to only 6% of the M.D.O.T. sample. Nine percent

Table 2

Comparison of Traverse City and M.D.O.T. Samples

| | Percentage of Sample | |
|---|---|---|
| Variable* | Traverse City 1981 | M.D.O.T 1980 |
| **Family income** | | |
| Under $5,000 | 2.3 % | 2.0 % |
| $5,000 - $9,999 | 3.7 % | 6.0 % |
| $10,000 - $14,999 | 8.7 % | 8.0 % |
| $15,000 - $24,999 | 23.4 % | 32.0 % |
| $25,000+ | 61.9 % | 52.0 % |
| **Age** | Respondent | Primary Wage Earner |
| under 24 | 23.3 % | 6.0 % |
| 25 - 34 | 24.9 % | 21.0 % |
| 35 - 64 | 48.2 % | 64.0 % |
| 65+ | 3.6 % | 9.0 % |

* Variable categories are those used by the M.D.O.T.

of the M.D.O.T. respondents were age 65 and over, only 4% of the Traverse City sample indicated they were in this age bracket. The difference may, in part, be attributed to the fact that the Traverse City data reflects the age of the respondent whereas the M.D.O.T. study reported the age of the principal wage earner.

To further examine the representativeness of the Traverse City study sample, comparisons were also made with a study undertaken at Notre Dame. A comparison of the Traverse City sample with the M.D.O.T sample and a sample used in a study of automobile travelers conducted by Edward Mayo, Notre Dame, in 1972, is given in Table 3. Educational attainment for the samples was somewhat similar. Twenty-four percent of the M.D.O.T. sample and 26% of the Notre Dame sample reported completing high school as compared to 27.5% of the Traverse City sample. Twenty-six percent, 23%, and 34.6%, respectively, reported completing some college. The greatest difference in education occurred in the category of college graduation. Forty-one percent of the M.D.O.T. sample and Notre Dame sample were college graduates whereas only 28.2% of the Traverse City sample reported this level of education. This difference may be attributed to the fact that the Traverse City data reflected the education of the respondent whereas the data for the M.D.O.T. study reported the education of the principal wage earner.

Table 3

Comparison of Traverse City Sample, M.D.O.T. Sample and University of Notre Dame Survey Sample

| | Percentage of Sample | | |
|---|---|---|---|
| Variable* | Traverse City 1981 | M.D.O.T 1980 | Notre Dame 1973 |
| **Education** | | | |
| Less than high school | 9.6 % | 9.0 % | 10.0 % |
| High school | 27.5 % | 24.0 % | 26.0 % |
| 1 - 3 years college | 34.6 % | 26.0 % | 23.0 % |
| College graduate | 28.2 % | 41.0 % | 41.0 % |
| **Occupation** | | | |
| Professional or Technical | 36.8 %[a] | 42.0 % | 35.0 % |
| Managerial or Self-employed | 19.2 %[b] | 20.0 % | 20.0 % |
| Semi-skilled | 11.1 %[c] | 11.0 % | 13.0 % |
| Sales | 9.1 % | 5.0 % | 7.0 % |
| Clerical | 2.6 % | 3.0 % | 6.0 % |
| Other | 21.2 %[d] | 18.0 % | 19.0 % |

* Variable categories are those used by the M.D.O.T.

[a] Includes the professional/technical category and the machine operator category from the Traverse City questionnaire.

[b] Includes the managerial or administrator category from the Traverse City questionnaire.

[c] Includes the craftsperson, farm worker and service worker categories from the Traverse City questionnaire.

[d] Includes the non-farm laborer, retired, unemployed and other categories from the Traverse City questionnaire.

A slightly higher percentage (42.0%) of the respondents in the M.D.O.T. study reported that the head of household was employed in the professional or technical category as compared to the respondents in the Traverse City sample (36.8%) (see Table 3). In the Notre Dame study, 35% reported professional or technical employment. In the three studies, percentages of respondents reporting managerial or self-employment were nearly identical (19.2%, 20.0%, and 20.0%). Percentages of respondents in the semi-skilled category were also similar (11.1%, 11.0%, and 13.0%). Sales was reported as an employment category by 9.1% of the Traverse City whereas 5.0% of the M.D.O.T. sample and 7.0% of the Notre Dame sample reported this occupation.

Although the samples were not identical, enough similarities existed so that the Traverse City sample was believed to be representative of tourists to the Traverse City area. The sample was then used in the next stage of analysis, derivation of the clusters.

## Derivation of Clusters

As discussed in Chapter 3, upon completion of the Clustering of Cases routine, all observations were fused from individual "groups" into one group as shown by a dendrogram. An examination of the dendrogram provided a starting point for cluster refinement. The dendrogram

shown in Figure 2, illustrates cluster definition resulting from the fusion of 250 distinct observations into one cluster. (Sixty-five observations were eliminated from the original 315 cases because of data missing among the variables necessary for computation of the overall attitude score.)

The outliers (i.e., extreme observations) were retained for further analysis as a unique cluster. The raw data for those observations classified as outliers were examined for response abnormality. Because no abnormalities were noted, the outliers were determined to be valid observations. Recommending the retention of outliers, Anderberg (1973) states that outliers:

> should not be discarded callously as mere errors of observations. They should be examined carefully with a view to finding a rational explanation for the deviant score profile. Outliers may provide a hint of a relevant category in the population which is poorly represented in the available data set (p. 183).

Based upon an examination of the dendrogram, ten clusters seemed to present a good starting point for the next stage in the clustering process. Cluster assignment of observations in the Clustering of Cases routine resulted in the cluster seeds 16, 31, 46, 62, 82, 92, 112, 129, 157 and 259, being used as a starting point in the analysis. The seed method is useful when the approximate mean of each cluster is known. With this information, the speed of the

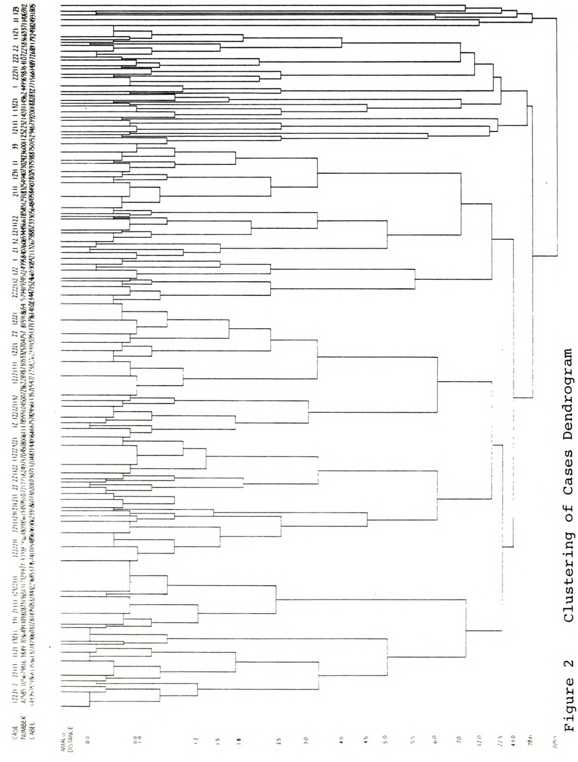


Figure 2 Clustering of Cases Dendrogram

alogrithm is increased thereby reducing the computer time required for cluster analysis (Engelman, 1981). (A cluster solution was also developed for five, six, eight and 13 groups. Means and standard deviations for these clusters are shown in Table 44, Appendix B.)

Using the randomly split sample suggested by Punj and Stewart (1983), the BMDPK-Means analysis process stopped after five iterations. The assignment of cases to clusters are shown in Table 4. The analysis of variance resulting from this analysis is shown in Table 5. The F-statistic is used to determine if the groups are statistically different from each other. "In fact this test is simply the multidimensional analog of the familiar t-test for the statistical significance of the differences between one sample mean x and another sample mean x. However, the statistical significance per se means very little" (Morrison, 1969, p. 157).

Validation of the cluster solution was the next step in the analysis. The kappa statistic (Cohen, 1960), discussed on page 63 was used to test for cluster stability. A kappa statistic of k = .702 was calculated for the validation sample. The clustering solution therefore was stable. Based upon the findings, the sample halves were combined and a final cluster solution was derived. The results of the final cluster solution were obtained in six iterations and are shown in Table 6.

Table 4

Split Sample Means, Standard Deviation and Case Assignment to Ten Clusters

| Cluster | n | Mean[a] | Standard Deviation |
|---|---|---|---|
| 1 | 21 | 15.86 | 4.46 |
| 2 | 28 | 31.18 | 4.30 |
| 3 | 18 | 45.67 | 3.90 |
| 4 | 12 | 58.67 | 3.70 |
| 5 | 15 | 73.40 | 4.21 |
| 6 | 4 | 94.25 | 3.70 |
| 7 | 13 | 113.23 | 4.51 |
| 8 | 1 | 129.00 | ---- |
| 9 | 4 | 172.25 | 19.00 |
| 10 | 3 | 274.00 | 45.85 |

[a] The lower the overall score, the more positive the attitude held about the Traverse City area.

Note: One unit equivalent to a unit on the Likert-type scale.

Table 5

Analysis of Variance Test for Cluster Solution

| | Sum of Squares | Degrees of Freedom | Mean Square | F-Statistic |
|---|---|---|---|---|
| Treatment | 598845.51 | 9 | 66538.39 | 961.78* |
| Residual | 16603.20 | 240 | 69.18 | |

* $p$ < .0000

Table 6

Centroid and Standard Deviation for Derived Clusters

| Cluster | $n$ | Centroid | Standard Deviation |
|---|---|---|---|
| 1 | 46 | 15.00 | 4.25 |
| 2 | 54 | 30.43 | 3.86 |
| 3 | 43 | 45.72 | 3.29 |
| 4 | 34 | 59.06 | 3.62 |
| 5 | 25 | 73.84 | 4.49 |
| 6 | 9 | 93.56 | 4.76 |
| 7 | 17 | 110.65 | 4.32 |
| 8 | 7 | 127.29 | 7.89 |
| 9 | 10 | 167.60 | 20.05 |
| 10 | 5 | 280.80 | 41.41 |

Note: One unit equivalent to a unit on the Likert-type scale.

## Testing of the Hypotheses

Hypotheses 1 through 8 were developed to test for differences among the tourist clusters. The clustering solution shown in Table 6 was used as the starting point for testing Hypothesis 1 through Hypothesis 7. To test Hypothesis 8, the sample was grouped according to stated travel distance from home.

### Hypothesis 1

Differences in attribute scores exist among tourist typologies.

Hypotheses 1 was derived to test for differences among tourist typologies in attribute scores. A ten group, step-wise discriminant function analysis (BMDP7M) was performed to determine if tourists in different clusters indicated different perceptions of the Traverse City area attributes and whether they felt these attributes were important or unimportant. For this analysis 315 cases were available for analysis. However, 65 cases were eliminated because of missing values. Two hundred and fifty cases remained for the analysis. The same number of observations were used for analysis of Hypothesis 2 and 3.

A consideration in the analysis phase was that all variables be significant and that variable significance not simply be the result of a large F-statistic in a previous

step of the analysis. To achieve this objective the variables had to be significant at the alpha = .05 level. Based on the degrees of freedom at each step, the required F-statistics are shown in Table 45, Appendix B.

The step-wise process revealed that all ten attribute scores significantly differentiated among cluster membership, therefore, Hypothesis 1 was accepted. The variables are listed in order of importance in Table 7. Scenic beauty ($F_{9,117}$ = 30.65) was the most important discriminator among the clusters followed by: availability of shopping facilities ($F_{18,232}$ = 24.47); availability of facilities for golf, tennis, etc. ($F_{27,336}$ = 23.85); historic and cultural interests ($F_{36,428}$ = 19.96); availability of suitable accommodations ($F_{45,508}$ = 17.11); availability of entertainment ($F_{54,575}$ = 15.68); pleasant attitudes of the people ($F_{63,631}$ = 14.69); opportunity for rest and relaxation ($F_{72,676}$ = 13.63); cuisine ($F_{81,713}$ = 13.03); and availability of facilities for water sports ($F_{90,742}$ = 12.30).

The discriminating power of the predictor variables was determined by the computation of the Wilks' lambda. The Wilks' lambda is the multivariate analysis of variance statistic that tests for equality of group means for the variables in the discriminant function. "Lambda is an

Table 7

Step-wise Discriminant Analysis: Hypothesis 1

| Step Number | Variable Entered | F Value to Enter or Remove | Wilks' Lambda | Approximate F-Statistic | Degrees of Freedom |
|---|---|---|---|---|---|
| 1 | Scenic beauty | 30.65 | .2978 | 30.65* | 9,117 |
| 2 | Shopping facilities | 19.35 | .1190 | 24.47* | 18,232 |
| 3 | Non-water sport facilities | 21.79 | .0440 | 23.85* | 27,336 |
| 4 | Cultural activities | 9.59 | .0250 | 19.96* | 36,428 |
| 5 | Suitable accommodations | 6.86 | .0162 | 17.11* | 45,508 |
| 6 | Entertainment | 7.86 | .0099 | 15.68* | 54,575 |
| 7 | Pleasant attitudes of the people | 7.40 | .0062 | 14.69* | 63,631 |
| 8 | Rest & relaxation | 5.44 | .0043 | 13.63* | 72,676 |
| 9 | Cuisine | 6.24 | .0028 | 13.03* | 81,713 |
| 10 | Water sport facilities | 4.56 | .0021 | 12.30* | 90,742 |

* $p < .001$

inverse measure of the discriminating power of the original variables which has not yet been removed by the discriminant functions -- the larger lambda is, the less information remaining" (Klecka, 1975, p. 442). The F-statistic is essentially the transformation of the Wilks' lambda (Jennrich & Sampson, 1981).

Nine functions were derived (see Table 8). The canonical functions represent the linear combination of variables entered in the equation that best discriminate among the groups. That is, the first canonical variable has the largest one-way analysis of variance F-statistic. The second canonical variable is the next best linear combination orthogonal to the first one and so on. The eigenvalue and the percentage of variance associated with the function are measures of function importance. In discriminant analysis, the eigen-value is a measure of the total variance existing in the discriminator variables. The percentage of variance is an indication of the importance of the functions. The functions are considered to be important so long as the percentage is "large enough". There is no fixed rule for determining what percentage is "large enough" to make a function important, however (Klecka, 1975).

Canonical correlations are a measure of association between the single function and the set of variables which defines the group membership. The canonical correlation

squared is the proportion of variance in the function explained by the groups. Function 1 was by far the most important in differentiating between groups accounting for 98.6% ($R^2$=.986) of the function variance defined by the groups. Function 2 yielded an $R^2$ of .5685 (see Table 8).

Table 8

Canonical Discriminant Functions: Hypothesis 1

| Function | Eigen-value | Percent of Variance | Canonical Correlation | $R^2$ |
|---|---|---|---|---|
| 1 | 68.9559 | 96.13 | .993 | .9860 |
| 2 | 1.3163 | 1.84 | .754 | .5685 |
| 3 | 1.0395 | 1.45 | .714 | .5098 |
| 4 | .2482 | 0.35 | .446 | .1989 |
| 5 | .1199 | 0.17 | .327 | .1069 |
| 6 | .0440 | 0.06 | .205 | .0420 |
| 7 | .0059 | 0.01 | .076 | .0058 |
| 8 | .0039 | 0.01 | .063 | .0040 |
| 9 | .0003 | 0.00 | .016 | .0003 |

With this in mind, an examination of Table 9 reveals the discrimination importance of each variable. Function 1 weighted heavily on the dimension of scenic beauty (-.197), pleasant attitudes (-.182), shopping facilities (-.178) and rest and relaxation (-.159). Function 2 relates the dimension of scenic beauty (.201) and rest and relaxation (-.162).

A classification function was used in the discriminant

Table 9

Derived Canonical Functions: Hypothesis 1

| Variable | Function 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| Water sport facilities | 0.000 | -0.047 | -0.144 | 0.027 | 0.017 | 0.019 | -0.130 | 0.034 | 0.002 |
| Non-water sport facilities | -0.154 | -0.012 | 0.042 | 0.106 | 0.012 | 0.015 | 0.067 | -0.021 | -0.008 |
| Cultural interests | -0.143 | 0.012 | 0.061 | -0.042 | 0.063 | 0.054 | -0.006 | 0.004 | -0.040 |
| Scenic beauty | -0.197 | 0.201 | -0.058 | -0.091 | -0.102 | -0.033 | 0.031 | -0.096 | -0.091 |
| Pleasant attitudes of the people | -0.182 | -0.007 | 0.046 | 0.034 | -0.092 | 0.140 | -0.026 | -0.081 | 0.136 |
| Rest & relaxation | -0.159 | -0.162 | 0.035 | -0.001 | -0.133 | 0.043 | 0.035 | 0.053 | -0.202 |
| Shopping facilities | -0.178 | 0.112 | 0.074 | 0.024 | -0.003 | -0.044 | -0.041 | 0.074 | 0.051 |
| Cuisine | -0.111 | 0.009 | -0.006 | 0.010 | 0.037 | -0.052 | -0.016 | -0.069 | -0.005 |
| Entertainment | -0.138 | -0.077 | 0.020 | -0.085 | -0.060 | -0.037 | 0.002 | -0.026 | 0.010 |
| Suitable accommodations | -0.153 | -0.080 | -0.066 | -0.056 | 0.164 | -0.016 | 0.098 | 0.125 | 0.088 |
| Constant | 9.421 | 0.061 | -1.141 | 0.334 | -0.106 | -0.305 | -0.022 | 0.066 | 0.106 |

analysis program to classify cases into the ten groups. (The classification function table is located in Table 46, Appendix B). Cutpoint scores can also be used for the same purpose and are a less complicated technique for observation classification. Cutpoints shown in Table 10 were derived through use of the following equation:

$$Zcu = \frac{NbZa + NaZb}{Na + Nb}$$

Where:

Zcu = the cutting score

Na = the number of observations in group A

Nb = the number of observations in group B

Za = the centroid of group A

Zb = the centroid of group B

(Hair et al., 1979, p. 107)

For example, if an observation score was 22.00 or less, the observation was placed into Group 1. If the score was between 23.00 and 39.00, the case was classified as belonging to Group 2 and so on.

A test of the derived function was undertaken using the validation sample. The hit-table illustrating classification of the holdout sample is shown in Table 11. The model demonstrated good classification ability by correctly classifying 82.9% of the holdout sample. Using the Hair et al. (1979) equation from page 65,

Table 10

Classification Cutting Scores: Hypothesis 1

| Group | Cutting Scores |
|---|---|
| 1 | 22.00 or less |
| 2 | 23.00 to 39.00 |
| 3 | 40.00 to 53.00 |
| 4 | 54.00 to 68.00 |
| 5 | 69.00 to 88.00 |
| 6 | 89.00 to 99.00 |
| 7 | 100.00 to 122.00 |
| 8 | 123.00 to 144.00 |
| 9 | 145.00 to 243.00 |
| 10 | 244.00 or greater |

classification accuracy of 20.76% was required in order to be better than chance.

A review of Table 11 reveals some model limitations. The model did not demonstrate the same classification success level for all typologies. For example, limited usefulness in classifying individuals in Group 6 was noted. The majority of individuals in Group 6 were incorrectly classified as belonging to Group 5. Because Group 5 was composed of more individuals than Group 6, the tendency of the model was to classify into the larger group. Also, although much better than chance, limited classification usefulness was noted for individuals in Group 8 and 9. For individuals in these two groups, the tendency of the model was to classify into Group 7.

Means and standard deviations for the total observations in each cluster on each attribute score are given in Table 47, Appendix B. This information was used in conjunction with the variable loadings on the functions to determine group differences (see Table 12). The influence of each variable to group differentiation is shown in Table 12. At the micro level, historic and cultural interests (shown as cultural interests in Table 12) on Function 1 contributed the most to group discrimination for Groups 1, 2, 3, 4 and 5. Shopping facilities was the most important discriminator for Groups 6 and 7. Groups 8, 9 and 10 varied in regard to which variable contributed the most toward

Table 11

Classification Matrix for Holdout Sample: Hypothesis 1

| | | Predicted | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Group | Percent Correct | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1Ø |
| 1 | 95.5 | 21 | 1 | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| 2 | 97.Ø | Ø | 32 | 1 | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| 3 | 85.7 | Ø | 1 | 18 | 2 | Ø | Ø | Ø | Ø | Ø | Ø |
| 4 | 69.2 | Ø | Ø | 2 | 9 | 2 | Ø | Ø | Ø | Ø | Ø |
| 5 | 87.5 | Ø | Ø | Ø | 2 | 14 | Ø | Ø | Ø | Ø | Ø |
| 6 | 16.7 | Ø | Ø | Ø | Ø | 4 | 1 | 1 | Ø | Ø | Ø |
| 7 | 6Ø.Ø | Ø | Ø | Ø | Ø | Ø | 2 | 3 | Ø | Ø | Ø |
| 8 | 5Ø.Ø | Ø | Ø | Ø | Ø | Ø | Ø | 2 | 2 | Ø | Ø |
| 9 | 5Ø.Ø | Ø | Ø | Ø | Ø | Ø | Ø | 1 | Ø | 1 | Ø |
| 1Ø | 1ØØ.Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 1 |
| | _n_ = | 21 | 34 | 21 | 13 | 2Ø | 3 | 7 | 2 | 1 | 1 |

Classification accuracy = 82.9%

Table 12

Group Coordinates for Functions 1 and 2: Hypothesis 1

| Variable | Group n = 1 (46) | 2 (54) | 3 (43) | 4 (34) | 5 (25) | 6 (9) | 7 (17) | 8 (7) | 9 (10) | 10 (5) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Function 1 | | | | | |
| Water sport facilities | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 |
| Non-water sport facilities | -0.26 | -0.60 | -0.96 | -1.24 | -2.20 | -2.38 | -2.31 | -2.16 | -4.20 | -5.25 |
| Cultural interests | -0.42 | -1.01 | -1.76 | -2.24 | -2.37 | -2.53 | -2.15 | -3.29 | -3.06 | -3.29 |
| Scenic beauty | -0.23 | -0.28 | -0.32 | -0.38 | -0.42 | -0.61 | -1.28 | -0.96 | -0.71 | -6.96 |
| Pleasant attitudes of the people | -0.23 | -0.48 | -0.48 | -0.61 | -1.01 | -0.89 | -1.47 | -1.41 | -1.49 | -4.45 |
| Rest & relaxation | -0.16 | -0.28 | -0.28 | -0.33 | -0.37 | -0.74 | -1.00 | -0.97 | -1.59 | -2.73 |
| Shopping facilities | -0.26 | -0.66 | -1.04 | -1.52 | -1.89 | -2.93 | -3.55 | -2.75 | -3.29 | -5.55 |
| Cuisine | -0.15 | -0.31 | -0.45 | -0.64 | -0.83 | -1.11 | -1.88 | -1.53 | -2.08 | -3.41 |
| Entertainment | -0.25 | -0.50 | -1.04 | -1.14 | -1.32 | -1.96 | -1.65 | -3.82 | -4.11 | -2.70 |
| Suitable accommodations | -0.17 | -0.29 | -0.32 | -0.51 | -0.39 | -0.55 | -0.85 | -1.29 | -2.01 | -4.81 |
| Coordinates | 7.27 | 5.02 | 2.77 | 0.81 | -1.37 | -4.28 | -6.71 | -8.75 | -13.12 | -29.73 |
| | | | | | Function 2 | | | | | |
| Water sport facilities | -0.05 | -0.08 | -0.08 | -0.10 | -0.14 | -0.17 | -0.26 | -0.30 | -0.81 | -1.61 |
| Non-water sport facilities | -0.02 | -0.05 | -0.07 | -0.10 | -0.17 | -0.18 | -0.18 | -0.17 | -0.32 | -0.41 |
| Cultural interests | 0.04 | 0.08 | 0.15 | 0.19 | 0.20 | 0.21 | 0.18 | 0.28 | 0.26 | 0.28 |
| Scenic beauty | 0.23 | 0.28 | 0.32 | 0.39 | 0.43 | 0.63 | 1.32 | 0.98 | 0.73 | 7.13 |
| Pleasant attitudes of the people | -0.01 | -0.02 | -0.02 | -0.02 | -0.04 | -0.03 | -0.06 | -0.05 | -0.06 | -0.17 |
| Rest & relaxation | -0.17 | -0.28 | -0.29 | -0.34 | -0.38 | -0.76 | -1.02 | -1.00 | -1.62 | -2.79 |
| Shopping facilities | 0.16 | 0.41 | 0.66 | 0.96 | 1.19 | 1.85 | 2.24 | 1.73 | 2.08 | 3.50 |
| Cuisine | 0.01 | 0.02 | 0.04 | 0.05 | 0.07 | 0.09 | 0.15 | 0.12 | 0.17 | 0.27 |
| Entertainment | -0.14 | -0.28 | -0.58 | -0.63 | -0.73 | -1.09 | -0.92 | -2.13 | -2.29 | -1.50 |
| Suitable accommodations | -0.09 | -0.15 | -0.17 | -0.27 | -0.20 | -0.28 | -0.44 | -0.67 | -1.05 | -2.51 |
| Coordinates | 0.03 | 0.01 | 0.02 | 0.20 | 0.29 | 0.32 | 1.07 | -1.17 | -2.85 | 2.26 |

group discrimination. Entertainment was the largest discriminator for Group 8; non-water sport facilities contributed the most for Group 9; and scenic beauty contributed the most toward differentiation of Group 10. In other words, the previously listed variables were the most influential in differentiating a particular group from all other groups.

On Function 2, the variable, shopping facilities, contributed the most toward group differentiation for Groups 2 through 7. Entertainment contributed the most for group discrimination for Group 1 and scenic beauty was the largest group discriminator for Group 10.

A plot of the clusters as determined by the function is shown in Figure 3. The group overlaps are also shown in Figure 3. "The ability to describe the overlap among groups is extremely important to the interpretation of a multiple discriminant analysis solution" (Dillon & Goldstein, 1984, p. 411). The overlap of the groups was determined by plotting the isodensity ellipse centered at each centroid. When standardized coefficient functions are used (as in this instance), the ellipse is a circle.

The diameter of the isodensity circle was determined by the following formula:

$$d = (4 \lambda C)^{1/2}$$

Where:

d = the diameter of an isodensity circle

$\lambda$ = the largest characteristic value of the pooled within-group covariance matrix

C = a constant that determines the 'size' of the ellipse and is chi-square distributed

(Dillon & Goldstein, 1984, p. 412)

This formula was used to determine the overlap of all groups in all further analysis.

A review of Figure 3 shows that although significant and yielding an $R^2$ of .5685 (see Table 8), Function 2 actually contributed little to group differentiation. Also, with the exception of Group 10, the model resulted in considerable overlapping when only 10% isodensity circles were noted.

Hypothesis 2

Differences in beliefs about the degree to which an area possesses an attribute exist among tourist typologies.

Differences among clusters based upon cluster members beliefs regarding attributes of the Traverse City area were examined by Hypothesis 2. For purposes of cross-validation of the function, a unique analysis sample and a holdout sample were developed from two hundred and fifty

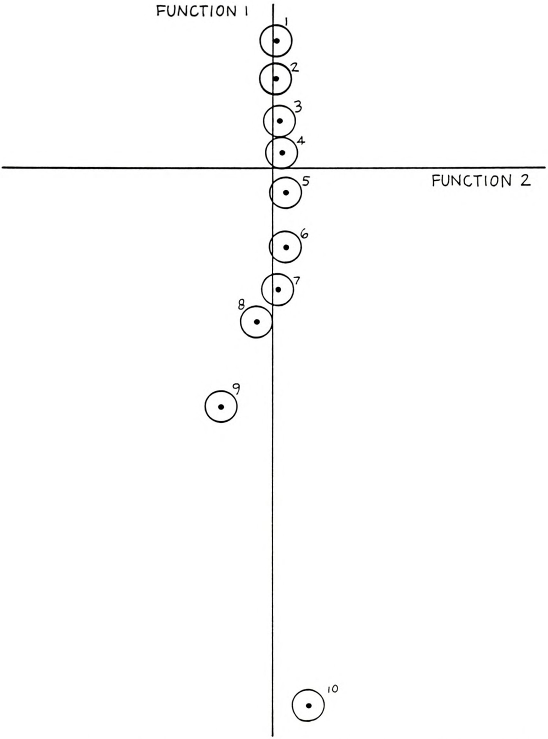



Figure 3 Cluster Plots and Overlaps: Hypothesis 1

observations. Step-wise discriminant analysis revealed seven variables significantly discriminating cluster membership. Hypothesis 2 was accepted. As shown in Table 13, these variables were: cuisine ($F_{9,120}$ = 14.85); availability of facilities for non-water sports ($F_{18,238}$ = 10.52); sightseeing ($F_{27,345}$ = 9.46); availability of entertainment ($F_{36,440}$ = 8.14); suitable accommodations ($F_{45,522}$ = 7.08); shopping facilities ($F_{54,590}$ = 6.16); and pleasant attitudes of the people ($F_{63,648}$ = 5.40).

Table 13

Step-wise Discriminant Analysis: Belief Scores

| Step Number | Variable Entered | F Value to Enter or Remove | Wilks' Lambda | Approximate F-Statistic | Degrees of Freedom |
|---|---|---|---|---|---|
| 1 | Cuisine | 14.85 | .4731 | 14.85* | 9,120 |
| 2 | Non-water sport facilities | 6.95 | .3102 | 10.52* | 18,238 |
| 3 | Scenic beauty | 7.39 | .1984 | 9.46* | 27,345 |
| 4 | Entertainment | 4.45 | .1478 | 8.14* | 36,440 |
| 5 | Suitable accommodations | 3.18 | .1186 | 7.08* | 45,522 |
| 6 | Shopping facilities | 1.99 | .1025 | 6.16* | 54,590 |
| 7 | Pleasant attitudes of the people | 1.32 | .0929 | 5.40* | 63,648 |

* $p < .001$

Seven discriminant functions were derived from the

analysis (see Table 14). Function 1, accounting for 77.8% ($R^2$=.7779) of the function variance among groups, was a measure of the scenic beauty (-.503), non-water sport facilities (-.469) and cuisine (-.413) dimension. Function 2 accounted for 29.6% of the variance among groups and affiliating with the entertainment (.471), accommodation (-.470), non-water sport facilities (.381) and scenic beauty (-.341) dimension (see Table 15).

Table 14

Canonical Discriminant Functions: Hypothesis 2

| Function | Eigen-value | Percent of Variance | Canonical Correlation | $R^2$ |
|---|---|---|---|---|
| 1 | 3.5084 | 77.97 | .882 | .7779 |
| 2 | .4212 | 9.36 | .544 | .2959 |
| 3 | .2894 | 6.43 | .474 | .2247 |
| 4 | .1669 | 3.71 | .378 | .1429 |
| 5 | .0770 | 1.71 | .268 | .0718 |
| 6 | .0229 | .51 | .150 | .0225 |
| 7 | .0135 | .30 | .116 | .0135 |

Cutting scores (rounded to the nearest full number) derived from the Hair et al. (1979) equation are shown in Table 48, Appendix B, and could be used to classify observations into groups. (The classification functions are shown in Table 49, Appendix B.) The reduced model correctly classified 37.5% of the validation sample which was much better than the proportional chance criteria of

Table 15

Derived Canonical Functions: Hypothesis 2

| | Function | | | | | | |
|---|---|---|---|---|---|---|---|
| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Non-water sport facilities | -Ø.469 | Ø.381 | -Ø.126 | Ø.271 | Ø.381 | Ø.141 | Ø.232 |
| Scenic beauty | -Ø.5Ø3 | -Ø.341 | -Ø.919 | Ø.421 | -Ø.Ø49 | -Ø.38Ø | -Ø.537 |
| Pleasant attitudes of the people | -Ø.249 | -Ø.Ø14 | Ø.169 | -Ø.Ø71 | -Ø.Ø29 | -Ø.5Ø3 | Ø.593 |
| Shopping facilities | -Ø.Ø92 | Ø.Ø16 | Ø.391 | -Ø.298 | Ø.5Ø4 | -Ø.Ø69 | -Ø.432 |
| Cuisine | -Ø.413 | -Ø.254 | Ø.422 | Ø.467 | -Ø.562 | Ø.253 | Ø.Ø98 |
| Entertainment | -Ø.2Ø7 | Ø.471 | -Ø.155 | -Ø.325 | -Ø.366 | -Ø.235 | -Ø.168 |
| Suitable accommodations | -Ø.338 | -Ø.47Ø | -Ø.199 | -Ø.541 | Ø.227 | Ø.771 | Ø.219 |
| Constant | 4.952 | -Ø.362 | Ø.118 | Ø.344 | -Ø.139 | Ø.Ø71 | -Ø.177 |

22.12% (see Table 16). The model, however, demonstrated limited usefulness in classifying individuals in some groups. An examination of Table 16 reveals the model as successfully classifying individuals into Group 1 and into Group 10. Limited classification ability was noted for individuals in Groups 3, 4 and 5 and an inability to correctly classify individuals in Groups 6, 8 and 9 was noted. In other words, the model was useful when classifying individuals who held extremely positive beliefs about the area and those who held extremely negative beliefs about the area. It demonstrated a lesser ability to classify those individuals "in the middle".

Means and standard deviations for the clusters are shown in Table 50, Appendix B. The information from Table 50 was used in conjunction with the canonical function coefficients (Table 15) to plot the clusters in a two-dimensional geometric space. The coordinates of each cluster are given in Table 17. As shown in Table 17, the importance of the seven variables in discrimination were remarkably similar for Group 2 through Group 9. Belief about the availability of non-water sport facilities was the most important discriminator for these groups and, in all cases, cuisine ranked as the second most important discriminator for Function 1. The only groups which varied were Group 1 and Group 10. As with the other groups, the most important discriminator for Group 1 was the

Table 16

Classification Matrix for Holdout Sample: Hypothesis 2

| Group | Percent Correct | Predicted 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 84.0 | 21 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 43.5 | 5 | 10 | 7 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 3 | 19.2 | 3 | 12 | 5 | 2 | 2 | 1 | 0 | 0 | 1 | 0 |
| 4 | 16.7 | 2 | 2 | 3 | 2 | 2 | 0 | 0 | 1 | 0 | 0 |
| 5 | 11.1 | 1 | 2 | 0 | 2 | 1 | 2 | 0 | 0 | 1 | 0 |
| 6 | 0.0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 |
| 7 | 33.3 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 3 | 0 |
| 8 | 0.0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 |
| 9 | 0.0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 10 | 100.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| | *n* = | 32 | 29 | 18 | 8 | 9 | 5 | 3 | 3 | 9 | 4 |

Classification accuracy = 37.5%

Table 17

Group Coordinates for Functions 1 and 2: Hypothesis 2

| Variable | Group n = | 1 (46) | 2 (54) | 3 (43) | 4 (34) | 5 (25) | 6 (9) | 7 (17) | 8 (7) | 9 (10) | 10 (5) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Function 1 | | | | | | | | | | | |
| Non-water sport facilities | | -0.65 | -1.02 | -1.25 | -1.24 | -1.69 | -1.82 | -1.74 | -2.01 | -2.34 | -2.53 |
| Scenic beauty | | -0.56 | -0.59 | -0.60 | -0.61 | -0.76 | -0.73 | -1.27 | -1.01 | -1.06 | -3.32 |
| Pleasant attitudes of the people | | -0.28 | -0.47 | -0.40 | -0.46 | -0.54 | -0.58 | -0.72 | -0.89 | -0.65 | -1.29 |
| Shopping facilities | | -0.10 | -0.19 | -0.20 | -0.23 | -0.29 | -0.36 | -0.40 | -0.39 | -0.36 | -0.55 |
| Cuisine | | -0.52 | -0.70 | -0.83 | -0.93 | -1.27 | -1.33 | -1.63 | -1.77 | -1.49 | -2.15 |
| Entertainment | | -0.29 | -0.45 | -0.63 | -0.60 | -0.67 | -0.74 | -0.72 | -1.27 | -1.06 | -0.83 |
| Suitable accommodations | | -0.38 | -0.56 | -0.53 | -0.64 | -0.57 | -0.64 | -0.97 | -0.97 | -1.11 | -2.10 |
| Coordinates | | 2.18 | 0.97 | 0.51 | 0.24 | -0.84 | -1.24 | -2.50 | -3.35 | -3.11 | -7.82 |
| Function 2 | | | | | | | | | | | |
| Non-water sport facilities | | 0.53 | 0.83 | 1.02 | 1.01 | 1.37 | 1.48 | 1.41 | 1.63 | 1.90 | 2.06 |
| Scenic beauty | | -0.38 | -0.40 | -0.40 | -0.41 | -0.52 | -0.49 | -0.86 | -0.68 | -0.72 | -2.25 |
| Pleasant attitudes of the people | | -0.02 | -0.03 | -0.02 | -0.03 | -0.03 | -0.03 | -0.04 | -0.05 | -0.04 | -0.07 |
| Shopping facilities | | 0.02 | 0.03 | 0.04 | 0.04 | 0.05 | 0.06 | 0.07 | 0.07 | 0.06 | 0.10 |
| Cuisine | | -0.32 | -0.43 | -0.51 | -0.57 | -0.78 | -0.82 | -1.00 | -1.09 | -0.91 | -1.32 |
| Entertainment | | 0.65 | 1.03 | 1.43 | 1.37 | 1.53 | 1.67 | 1.63 | 2.89 | 2.40 | 1.88 |
| Suitable accommodations | | -0.52 | -0.77 | -0.73 | -0.88 | -0.79 | -0.89 | -1.35 | -1.34 | -1.55 | -2.91 |
| Coordinates | | -0.39 | -0.10 | 0.46 | 0.16 | 0.47 | 0.63 | -0.50 | 1.07 | 0.79 | -2.88 |

availability of non-water sport facilities but the second most important discriminator was scenic beauty of the area. Group 1Ø individuals inverted these rankings, rating scenic beauty highest followed by the availability of non-water sport facilities.

On Function 2, Groups 1 through 9 were similar in the identification of the most important group discriminator. Availability of entertainment was the most important discriminator for these groups and availability of non-water sport facilities was second in importance.

Cluster plots and overlaps on the most important functions are shown in Figure 4. An examination of Figure 4 shows that individuals in Groups 2, 3 and 4 as well as those in Groups 5 and 6 and in Groups 8 and 9, tend to group together. Individuals in these groups tended to hold similar beliefs regarding Traverse City area attributes.

Hypothesis 3

Attribute evaluation differences exist among tourist typologies.

This hypothesis was formulated to test for perception differences of attribute importance to cluster members. Two hundred and fifty cases were available for analysis. A unique, split sample was used in this analysis.

Step-wise discriminant analysis revealed seven

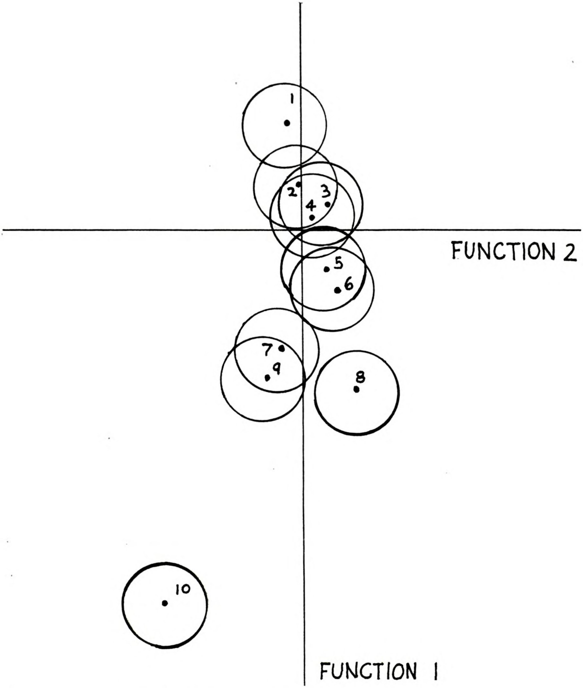



Figure 4 Cluster Plots and Overlaps: Beliefs

significant discriminator variables, therefore the hypothesis was accepted. The significant discriminators were: availability of facilities for water sports ($F_{9,118}$ = 22.43); shopping facilities ($F_{18,234}$ = 14.88); availability of facilities for non-water sports ($F_{27,339}$ = 11.32); scenic beauty ($F_{36,432}$ = 9.57); availability of suitable accommodations ($F_{45,513}$ = 8.49); cuisine ($F_{54,580}$ = 7.31); and historic and cultural interests ($F_{63,636}$ = 6.41). Results of the analysis are shown in Table 18.

The analysis yielded seven discriminant functions (see Table 19). Function 1 accounted for 82.26% of the function variance among groups while Function 2 accounted for 39.69%. The largest discriminator on Function 1 was the variable, availability of water sport facilities (-.860), followed by scenic beauty (-.521). Water sport facilities was twice as large as the third ranked variable, shopping facilities (-.461). Function 1, therefore, measured the water sport-scenic beauty dimension. Water sport facilities (-.899) was the largest discriminator on Function 2 as well. This discriminator was about 25% larger than the second rated variable, suitability of accommodations (-.643). Function 2 measured the water sport facilities-suitable accommodations dimension (see Table 20).

Table 18

Step-wise Discriminant Analysis: Evaluative Criteria

| Step Number | Variable Entered | F Value to Enter or Remove | Wilks' Lambda | Approximate F-Statistic | Degrees of Freedom |
|---|---|---|---|---|---|
| 1 | Water sport facilities | 22.43 | .3689 | 22.43* | 9,118 |
| 2 | Shopping facilities | 9.05 | .2175 | 14.88* | 18,234 |
| 3 | Non-water sport facilities | 5.39 | .1533 | 11.32* | 27,339 |
| 4 | Scenic beauty | 4.82 | .1113 | 9.57* | 36,432 |
| 5 | Suitable accommodations | 4.32 | .0830 | 8.49* | 45,513 |
| 6 | Cuisine | 2.12 | .0710 | 7.31* | 54,580 |
| 7 | Cultural interests | 1.62 | .0629 | 6.41* | 63,636 |

* $p$ < .001

Table 19

Canonical Discriminant Functions: Hypothesis 3

| Function | Eigen-value | Percent of Variance | Canonical Correlation | $R^2$ |
|---|---|---|---|---|
| 1 | 4.6632 | 78.86 | .907 | .8226 |
| 2 | .6594 | 11.15 | .630 | .3969 |
| 3 | .3609 | 6.10 | .515 | .2652 |
| 4 | .1399 | 2.37 | .350 | .1225 |
| 5 | .0718 | 1.21 | .259 | .0671 |
| 6 | .0165 | 0.28 | .127 | .0161 |
| 7 | .0014 | 0.02 | .038 | .0014 |

Table 20

Derived Canonical Functions: Hypothesis 3

| Variable | Function 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Water sport facilities | -0.860 | -0.899 | 0.241 | -0.021 | -0.632 | 0.362 | 0.275 |
| Non-water sport facilities | -0.338 | 0.410 | 0.115 | 0.162 | -0.303 | -0.424 | -0.115 |
| Cultural interests | -0.030 | 0.240 | -0.146 | 0.422 | 0.157 | 0.209 | 0.376 |
| Scenic beauty | -0.521 | 0.403 | 0.987 | 0.069 | 0.545 | 0.160 | -0.507 |
| Shopping facilities | -0.461 | 0.189 | -0.428 | -0.073 | -0.089 | 0.319 | -0.449 |
| Cuisine | -0.214 | 0.129 | 0.002 | -0.684 | 0.289 | -0.176 | 0.324 |
| Suitable accommodations | -0.072 | -0.643 | -0.477 | 0.354 | 0.382 | -0.309 | -0.026 |
| Constant | 5.061 | -0.843 | 0.337 | -0.535 | -0.584 | -0.372 | 0.113 |

Cutting scores shown in Table 51, Appendix B, reflect fine levels of discrimination between the groups. (The classification functions are shown in Table 52, Appendix B.) The effect of this is reflected by the classification accuracy. When applied to the validation sample, the reduced model correctly classified 43.4% of the sample (see Table 21). Correct classification of 19.19% was required for the model to be considered better than chance. The model was useful in correctly classifying individuals into Group 1 and somewhat less successful in classifying individuals into Groups 2, 5, 7, 8, 9 and 10. The model demonstrated limited ability to discriminate individuals in Group 4 and was unsuccessful in correctly classifying any observations into Group 6. This model, as did the beliefs model (Hypothesis 2), demonstrated a great ability to classify individuals who either stated the attributes were very important or very unimportant in the decision process.

Means and standard deviations for all observations in the clusters are shown in Table 53, Appendix B, and were used to determine cluster centroids shown in Table 22. At the micro level, water sport facilities on Function 1 was the most important discriminator for group membership for Groups 1, 2, 8, 9 and 10 and ranked second for Groups 3, 4, 5, 6 and 7. Shopping facility availability was the most important variable for Groups 3, 4, 5, 6 and 7. Shopping

Table 21

Classification Matrix for Holdout Sample: Hypothesis 3

| Group | Percent Correct | Predicted 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 91.7 | 22 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 41.4 | 12 | 12 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 3 | 25.0 | 1 | 8 | 4 | 1 | 2 | 0 | 0 | 0 | 0 | 0 |
| 4 | 16.7 | 0 | 4 | 7 | 3 | 2 | 0 | 0 | 1 | 1 | 0 |
| 5 | 30.8 | 0 | 1 | 3 | 3 | 4 | 0 | 2 | 0 | 0 | 0 |
| 6 | 0.0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 |
| 7 | 42.9 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 1 | 1 | 0 |
| 8 | 66.7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 |
| 9 | 14.3 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 1 | 2 |
| 10 | 100.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| | *n* = | 35 | 26 | 18 | 12 | 11 | 0 | 7 | 5 | 3 | 5 |

Classification accuracy = 43.4%

Table 22

Group Coordinates for Functions 1 and 2: Hypothesis 3

| Variable | Group n = | 1 (46) | 2 (54) | 3 (43) | 4 (34) | 5 (25) | 6 (9) | 7 (17) | 8 (7) | 9 (10) | 10 (5) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Function 1** | | | | | | | | | | | |
| Water sport facilities | | -0.879 | -1.083 | -0.960 | -1.315 | -1.376 | -1.815 | -1.872 | -1.843 | -3.354 | -4.816 |
| Non-water sport facilities | | -0.411 | -0.601 | -0.762 | -0.865 | -1.338 | -1.277 | -1.272 | -1.255 | -1.758 | -2.028 |
| Cultural interests | | -0.047 | -0.076 | -0.099 | -0.120 | -0.116 | -0.123 | -0.104 | -0.124 | -0.135 | -0.156 |
| Scenic beauty | | -0.544 | -0.646 | -0.715 | -0.812 | -0.729 | -1.158 | -1.134 | -1.116 | -1.042 | -2.813 |
| Shopping facilities | | -0.611 | -0.922 | -1.158 | -1.451 | -1.567 | -1.998 | -2.088 | -1.778 | -1.936 | -2.397 |
| Cuisine | | -0.228 | -0.353 | -0.408 | -0.510 | -0.574 | -0.618 | -0.856 | -0.673 | -1.006 | -1.156 |
| Suitable accommodations | | -0.074 | -0.084 | -0.100 | -0.123 | -0.115 | -0.128 | -0.140 | -0.195 | -0.259 | -0.374 |
| Coordinates | | 2.267 | 1.296 | 0.859 | -0.135 | -0.754 | -2.056 | -2.405 | -1.923 | -4.429 | -8.679 |
| **Function 2** | | | | | | | | | | | |
| Water sport facilities | | -0.919 | -1.132 | -1.004 | -1.375 | -1.438 | -1.898 | -1.957 | -1.926 | -3.506 | -5.034 |
| Non-water sport facilities | | 0.499 | 0.729 | 0.925 | 1.049 | 1.624 | 1.549 | 1.544 | 1.523 | 2.132 | 2.460 |
| Cultural interests | | 0.376 | 0.609 | 0.793 | 0.960 | 0.931 | 0.987 | 0.833 | 0.994 | 1.080 | 1.248 |
| Scenic beauty | | 0.421 | 0.500 | 0.553 | 0.628 | 0.564 | 0.896 | 0.877 | 0.864 | 0.806 | 2.176 |
| Shopping facilities | | 0.251 | 0.378 | 0.475 | 0.595 | 0.643 | 0.819 | 0.856 | 0.729 | 0.794 | 0.983 |
| Cuisine | | 0.137 | 0.213 | 0.246 | 0.307 | 0.346 | 0.373 | 0.516 | 0.405 | 0.606 | 0.697 |
| Suitable accommodations | | -0.657 | -0.750 | -0.897 | -1.097 | -1.029 | -1.143 | -1.248 | -1.745 | -2.315 | -3.344 |
| Coordinates | | -0.735 | -0.296 | 0.248 | 0.224 | 0.798 | 0.740 | 0.578 | 0.001 | -1.246 | -1.657 |

facilities was second most important discriminator for Groups 2 and 8; scenic beauty was rated second for Groups 1 and 10; and the availability of non-water sport facilities was second for Group 9. The variables mentioned were, on the micro level, the most important in discriminating a group from all others.

Plots and overlaps of the groups on Functions 1 and 2 are shown in Figure 5. As shown in Figure 5, a great deal of overlap occured among many of the groups with the identification of only 10% isodensity circles. Overlapping occured between Groups 6, 7 and 8 and among Groups 1, 2, 3, 4 and 5. Only Groups 9 and 10 were separated in the geometric space. The tendency toward limited classification success is easier to understand in light of this information.

## Identification of Viable Tourist Segments

A review of the hit-ratio tables (see Tables 11, 16 and 21) reveal that the belief X evaluative criteria model ($B_i a_i$) (Hypothesis 1) results in the highest classification success rate but may not be a workable option in an applied setting. Although the component variables differ significantly in this model, it is unknown whether the differences are the result of attribute perception differences (i.e., belief differences) or attribute

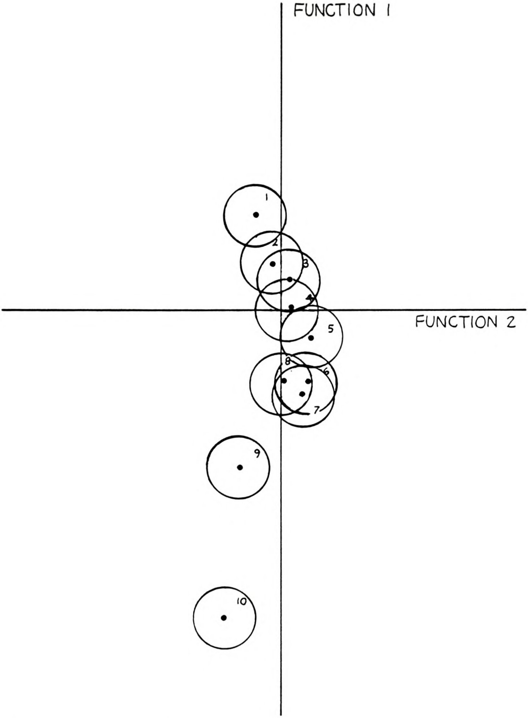



Figure 5 Cluster Plots and Overlaps: Evaluative Criteria

importance (i.e., evaluative criteria differences) differences. In an applied setting, it may be more beneficial to examine the beliefs and the evaluative criteria (personal evaluations) to gain specific information for purposes of market segmentation. The belief model (Hypothesis 2) results in acceptable within-group classification levels (i.e., chance plus 25% or 13%) for Groups 1 through 4, 7 and 10 and gives insight into the "image" each group has of the area. Members of Groups 6, 8 and 9 however are not correctly classified using this model and only 11.1% of Group 5 members are correctly classified. Focusing on attribute importance in the vacation destination decision, the evaluative criteria model seems to yield more consistent classification results across typologies. Using the evaluative criteria model the following groups are adequately classified: Groups 1 through 5, 7, 8, 9 and 10.

Groups 1 and 2, approximately 40% of the sample, are composed of persons who are generally very favorably inclined toward Traverse City. They represent the core of satisfied users, the "cheer leaders". To a lesser extent the same could be said of persons in Groups 3 and 4 (30.8% of the sample). In other words, tourist attracting attributes are considered important decision factors and persons in these groups, approximately 71% of the total sample, believe Traverse City offers those attributes they

feel to be important.

Persons in Groups 5 and 7 (10% and 6.8% of the sample respectively) are generally satisfied with the area but not to the intense degree exhibited by Groups 1 or 2. Persons in these groups are generally low-key about the amount of attributes offered but are also low-key about the importance of the attribute in the decision-making process. These persons could be typified by the phrase "It's O.K.". Unfortunately, the analysis failed to identify the compelling, underlying cause for persons in these groups to visit the area more than once a year.

Persons in Group 8 are satisfied with the amount of water facilities, scenic beauty, rest and relaxation and accommodations. (These attributes are important in their decision to visit Traverse City.) However, persons in this group are somewhat dissatisfied with the attitudes of the people in the area. They feel pleasant attitudes of people are an important consideration in the vacation decision process but rate the area as neutral in this attribute. As previously mentioned, these persons also perceive a dearth of cuisine opportunities despite its importance in the vacation decision process. However, Group 8 members represented only 2.8% of the sample and the group size does not warrant specific segmentation strategies.

Group 6 members are not correctly classified using

either model and therefore should not be considered a viable tourist segment based on these variables. Members of Group 6 represent 3.6% of the total sample.

While reaching an acceptable classification level (14.3%) on the evaluative criteria model, little is known about members of Group 9. Scenic beauty seems to be the only important attracting attribute for members of this group. Since little information is available regarding this group, this may not be a viable segment for Traverse City, however, this group represents only four percent of the total sample.

Members of Group 10 (2% of the total sample) are correctly classified using any of the tourist attracting attribute models however, no information is available concerning what attracts members of this group to Traverse City. Groups 6, 8, 9 and 10 therefore are not viable tourist segments.

Based upon the individual tourist attribute scores, the viable groups were named for ease of identification. Members of Group 1 held the most favorable attitude about the Traverse City area and were named the "Cheerleaders". Group 2 members held very favorable attitudes about the area, however, the attitude held was not as favorable as that of the "Cheerleaders". Group 2 members were named the "Fan Club Member". The term, "Nature Enthusiast", describes

members of Group 3 because the most important attributes for members of this group were in the natural environment. "Comfort Seeking Nature Buff" describes members of Group 4 for whom rest and relaxation and the natural environment were very important. Rest and relaxation, availability of scenic beauty and suitable accommodations were the most important attributes for the "Laid Back Tourist" (Group 5 members). Seeking attributes existing in the human constructed and behavioral environment, members of Group 7 were named the "Good Time Guys". The non-viable clusters were not named nor will these groups be discussed but they were included in the following analysis. Groups 6 and 8 were considered to be non-viable because the group members were not correctly classified by the models. Two other groups (Groups 9 and 10) were considered to be non-viable because information concerning area attraction to members of these groups was lacking. The four non-viable groups represent 12.4% of the total sample. (All groups are identified by group number in the tables.)

Hypothesis 4

Demographic differences exist among tourist typologies.

Hypothesis 4 was formulated to determine if demographic differences existed between the tourist clusters. The demographics examined in this analysis were: occupation (question 38); income (question 39); age

(question 40); education (question 42); and sex (question 41). In the questionnaire these variables were categorical but for purposes of discriminant analysis were transformed into metric variables. When data are presented in the form of categorical data, an assumption is made in order to use this in discriminant analysis or any analysis requiring a metric variable. The assumption made is that all observations in a category have a value equal to the midpoint of that class (Neter, Wasserman & Whitmore, 1966). The transformations entailed taking the midpoint of each category range as a metric number. For example, income was transformed to a metric variable in the following fashion. When income was equal to 1, the response was transformed to 5000; income equal to 2 became 6250; income equal to 3 became 8750; income equal to 4 became 12500; income equal to 5 became 17500; income equal to 6 became 22500; income equal to 7 became 37500; and income equal to 8 became 50000. The same type of transformation was performed on the variables age and education.

The variable, occupation, was transformed according to Hollingshead's (1957) occupational groupings as shown in <u>Index of Social Position</u>. Hollingshead scaled occupations according to the position persons having those occupations held within society. Using this scale, those responses for: professional or technical were scaled to 1; manager or administrator, except farm to 2; sales and clerical were

scaled to 3; craftsperson was scaled to 4; machine operator was scaled to 5; and all other occupational categories were scaled to 6. The social index scaling was then reversed so as to maintain consistency with the scaling for income.

Three hundred and fifteen observations were available for analysis but only 239 were analyzed. Twenty cases were excluded because of missing data and 56 were excluded because of missing group assignment. Randomly unique analysis and holdout samples were derived for this analysis. A minimum alpha level of .05 was set for variable inclusion into the analysis. The minimum F-statistic values listed in Table 45, Appendix B, were required before a variable could be included in the model. In other words, a minimum F-statistic level of $F_{9,114}$ = 1.96 was required for entry of the first variable. As shown in Table 54, Appendix B, none of the variables reached the F-Statistic level necessary for inclusion into the model. Hypothesis 4 was therefore rejected.

Discriminant analysis via the direct method was undertaken to test the hypothesis. In doing this, all of the variables were entered into the equation to determine whether the interaction of variables influenced group classification. Results of this analysis are shown in Table 23. The approximate F-statistic is slightly higher using the direct rather than the step-wise method. However, none of the variables were significant

Table 23

Direct Discriminant Analysis: Demographics

| Variable Entered | Wilks' Lambda | Approximate F-Statistic | Degrees of Freedom |
|---|---|---|---|
| Social index | .907 | 1.29 | 9,113 |
| Age | .839 | 1.14 | |
| Income | .782 | 1.06 | |
| Education | .743 | 0.95 | |
| Sex | .719 | 0.83 | |

* $p < .05$

discriminators.

Five canonical discriminant functions were derived (see Table 24). The functions did not provide much explaination of group differences. Function 1 explained only 11.16% ($R^2$=.1116) of group variation.

The classification functions used to classify observations are shown in Table 55, Appendix B. The classification hit-ratio is shown in Table 25. When applied to the validation sample, the model correctly classified 27.6%. A correct classification of 17.87% was required for the model to be considered better than chance. The model demonstrated limited success in classifying observations into the viable segments of "Cheerleaders" (Group 1), "Fan Club Member" (Group 2), and "Nature Enthusiast" (Group 3), and failed to correctly classify observations into any other groups. Thus, while the model demonstrated acceptable classification accuracy, the practical application was unacceptable because of the failure to classify into all groups.

Means and standard deviations for the clusters are shown in Table 56, Appendix B. Implication of these findings will be discussed in Chapter 5.

Table 24

Canonical Discriminant Functions: Hypothesis 4

| Function | Eigen-value | Percent of Variance | Canonical Correlation | $R^2$ |
|---|---|---|---|---|
| 1 | 0.126 | 36.38 | .334 | .1116 |
| 2 | 0.106 | 30.76 | .310 | .0961 |
| 3 | 0.073 | 21.04 | .260 | .0676 |
| 4 | 0.026 | 7.40 | .158 | .0250 |
| 5 | 0.015 | 4.42 | .123 | .0151 |

Table 25

Classification Matrix for Holdout Sample: Hypothesis 4

| | | Predicted | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Group | Percent Correct | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1 | 45.5 | 10 | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 41.4 | 11 | 12 | 3 | 2 | 0 | 0 | 0 | 1 | 0 | 0 |
| 3 | 40.9 | 4 | 6 | 9 | 2 | 0 | 1 | 0 | 0 | 0 | 0 |
| 4 | 0.0 | 3 | 7 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |
| 5 | 0.0 | 1 | 2 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0.0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0.0 | 2 | 4 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 8 | 33.3 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 9 | 0.0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0.0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | *n* = | 33 | 41 | 27 | 9 | 0 | 2 | 0 | 4 | 0 | 0 |

Classification accuracy = 27.6%

Hypothesis 5

Differences in travel behavior exist among tourist typologies.

The variables used in this analysis were: means of transportation; reason for visiting the area; round trip distance from respondent's home; length of stay in the area; the number of people the respondent was financially responsible for on the trip; composition of the travel party; frequency of visits to the test area; and frequency of visits to other Michigan resort areas. The hypothesis was formulated to determine if differences exist among the clusters based upon the aforementioned variables.

Travel behavior variables in this study were nominal or ordinal in nature. Because of the nature of the variables, multi-dimensional contingency table analysis (BMDP4F) was the selected statistical technique. Analysis was undertaken in an attempt to develop an effective log-linear model to test for differences among groups. This analysis was based upon likelihood ratio chi-square values. Analysis involved a two-stage process. In Stage 1, the task was to select good predictor variables. Development of a good fitting model is the task in Stage 2.

Analysis of multi-way contingency tables often results in the problem of "cell sparseness" (Dillon, 1980, p. 132). That is, multi-way contingency tables often have so

many cells that some cells are empty or have too few observations per cell to allow effective parameter estimation. In an attempt to overcome this problem, Dillon (1980) recommended a plan to reduce the number of variables prior to the model building stage. At the variable selection stage (Stage 1), all first-order relationships between the dependent variable (cluster) and the explanatory variables were examined. This process was similar to the setting of the "F-to-enter" criterion in discriminant analysis (Dillon, 1980, p. 138). The selected level of significance was alpha = .05. Table 57, Appendix B, shows the results of this analysis.

First-order analysis of the explanatory variables yielded no statistically significant chi-square values. The analysis did reveal the problem of cell sparseness for the means of transportation variable. Cell sparseness was also a problem evidenced by the following variables: reason for visiting the area; round trip distance from respondent's home; length of stay in the area; the number of people the respondent was financially responsible for on the trip; and composition of the travel party. In an attempt to deal with this problem, some of the categories of these variables were collapsed and the analysis was rerun. Results of this further analysis once again failed to yield any significant chi-square values (Table 58, Appendix B).

The direct method (i.e., inclusion of all variables into the analysis as once) was employed to determine whether variable interaction influences the chi-square values. "Cell sparseness" (Dillon, 1980, p. 132) hindered effective parameter estimation. The hypothesis was therefore rejected. Group responses for the travel behavior questions are shown in Table 59, Appendix B.

Hypothesis 6

Differences exist among tourist typologies in regard to travel expenditures.

Hypothesis 6 was formulated to determine if differences existed among tourist typologies with respect to the amount of expenditures on: water sports; non-water sports; historical and cultural activities; sight-seeing; shopping; cuisine; entertainment; accommodations; and miscellaneous expenses. Specifically, questions 29 through 37 were used in this analysis.

Three hundred and fifteen cases were available for analysis. One hundred and twenty-five cases were eliminated because of missing data and another 28 were eliminated because of a missing group assignment. One hundred and sixty-two cases remained for analysis. A unique split-sample was derived for purposes of analysis. Minimum F-statistic levels necessary to achieve an alpha = .05 for all variables in the analysis are shown in Table

60, Appendix B.

Two variables reached the alpha =.05 level of significance necessary for entry into the model (see Table 26). Expenditures for cuisine ($F_{9,72}$ = 2.36) and expenditures for entertainment ($F_{18,143}$ = 2.19) were found to be significant discriminators of the clusters, hence the hypothesis was accepted.

Table 26

Step-wise Discriminant Analysis: Travel Expenditures

| Step Number | Variable Entered | F Value to Enter or Remove | Wilks' Lambda | Approximate F-Statistic | Degrees of Freedom |
|---|---|---|---|---|---|
| 1 | Cuisine | 2.36 | .7723 | 2.36* | 9, 72 |
| 2 | Entertainment | 2.03 | .6130 | 2.19** | 18,142 |

* $p < .025$
** $p < .01$

Two canonical discriminant functions were derived from this analysis (see Table 27). However, while these findings were significant, the two derived functions did not provide much explanation of group differentiation. Function 1 yielded an $R^2$ of .2333. In other words, only 23.3% of the function variation was defined by the groups. Only 20.1% of the variance was accounted for in Function 2.

Table 27

Canonical Discriminant Functions: Hypothesis 6

| Function | Eigen-value | Percent of Variance | Canonical Correlation | $R^2$ |
|---|---|---|---|---|
| 1 | Ø.3Ø39 | 54.77 | .483 | .2333 |
| 2 | Ø.251Ø | 45.23 | .448 | .2ØØ7 |

The loading of the significant variables on the canonical functions is shown in Table 28. Function 1 was a measure of the cuisine expenditure dimension (.Ø21) whereas Function 2 measured the expenditure for entertainment dimension (.Ø25).

Table 28

Coefficients for Canonical Variables: Hypothesis 6

| | Function | |
|---|---|---|
| Variable | 1 | 2 |
| Expenditure for cuisine | .Ø21 | .ØØ5 |
| Expenditure for entertainment | -.Ø12 | .Ø25 |
| Constant | -.8Ø4 | -.957 |

Cluster means and standard deviations are shown in Table 61, Appendix B. Among the viable tourist segments,

expenditures for cuisine ranged from $35.32 (Good Time Guys, Group 7) to $92.46 (Nature Enthusiast, Group 3) and entertainment expenditures ranged from $13.75 (Good Time Guys, Group 7) to $41.92 (Fan Club Member, Group 2). These data were used in conjunction with information from Table 28 to plot the groups in a two-dimensional geometric space. Coordinates of group centroids are shown in Table 29. The groups were not greatly separated in the geometric space as shown in Figure 6. A great deal of overlapping occurred between all groups. Expenditure ratios for all groups are shown in Table 62, Appendix B.

Cutting scores and classification functions are shown in Tables 63 and 64, Appendix B. The reduced model successfully classified 20% of the validation sample (see Table 30). The proportional chance classification plus 25% was 18.78%, therefore, the reduced model yielded a correct classification of better than chance. With this model individuals who were either a "Fan Club Member" or "Nature Enthusiast" were successfully classified (58.8% and 35.7%, respectively). Some "Cheerleaders" were correctly classified (6.7%); however, the model was not useful in correctly classifying observations into any other groups. Essentially, the model classified by placing observations into the largest groups, most commonly into the "Fan Club Member" category. The analysis was undertaken, however, because of a desire to classify individuals into all

Table 29

Group Coordinates for Functions 1 and 2: Hypothesis 6

| Variable | Group n = | 1 (27) | 2 (36) | 3 (26) | 4 (24) | 5 (17) | 6 (4) | 7 (16) | 8 (6) | 9 (4) | 10 (2) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cuisine | | 1.19 | 1.44 | 1.94 | 1.17 | 0.86 | 0.50 | 0.74 | 0.48 | 0.08 | 0.10 |
| Entertainment | | -0.34 | -0.50 | -0.32 | -0.30 | -0.26 | -0.58 | -0.16 | -0.20 | -0.03 | 0.00 |
| Coordinates | | 0.04 | 0.13 | 0.82 | 0.07 | -0.20 | -0.89 | -0.23 | -0.52 | -0.76 | -0.70 |
| Cuisine | | 0.28 | 0.34 | 0.46 | 0.28 | 0.21 | 0.12 | 0.18 | 0.11 | 0.02 | 0.02 |
| Entertainment | | 0.71 | 1.05 | 0.67 | 0.62 | 0.54 | 1.22 | 0.34 | 0.42 | 0.06 | 0.00 |
| Coordinates | | 0.03 | 0.43 | 0.17 | -0.06 | -0.21 | 0.38 | -0.44 | -0.43 | -0.88 | -0.93 |

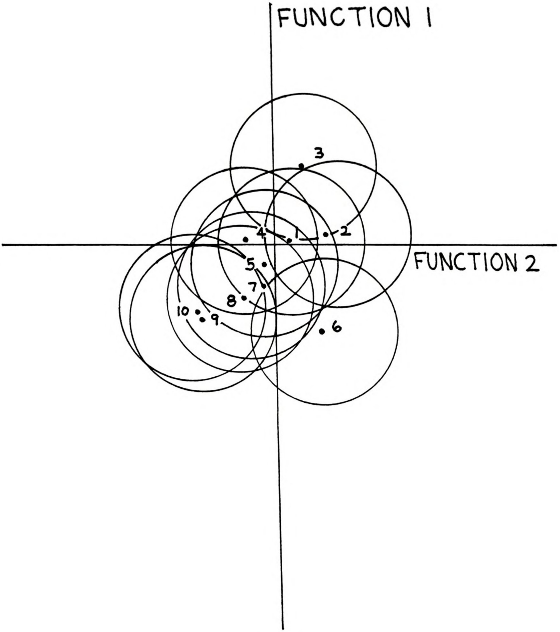



Figure 6 Cluster Plots and Overlaps:
Travel Expenditures

Table 30

Classification Matrix for Holdout Sample: Hypothesis 6

| Group | Percent Correct | Predicted 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.7 | 1 | 10 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 2 | 58.8 | 1 | 10 | 4 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| 3 | 35.7 | 2 | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0.0 | 0 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0.0 | 2 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0.0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0.0 | 0 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0.0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0.0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0.0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | n = | 6 | 54 | 18 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |

Classification accuracy = 20.0%

groups, not just into the largest groups. Therefore, while the classification accuracy of the model reached an acceptable level overall, the practical application of the results was not acceptable.

Direct discriminant analysis was undertaken to determine whether including all expenditure variables in the model improved classification accuracy. Classification accuracy was reduced using the complete model (see Table 65, Appendix B). The reduced model, therefore, yields higher hit-ratio accuracy.

Hypothesis 7

Differences exist among tourist typologies in their travel response to changing economic conditions.

Hypothesis 7 was formulated to examine differences between cluster members regarding perceptions of how the economy affected their vacation decision-making. Questions 21 and 22 were used in this analysis. These questions were: I have restricted my vacation destination because of increases in transportation costs; and I have restricted the length of my vacation because of increased costs in food and accommodations.

Step-wise discriminant analysis revealed that neither of these variables reached a significance level high enough ($F_{9,122} = 1.96$) for entry into the analysis (see Table 66,

Appendix B). The hypothesis was rejected.

Direct discriminant analysis was undertaken to determine whether the interaction of variables influenced model accuracy. Classification accuracy of 12.8% resulted from the inclusion of both variables (see Table 67, Appendix B). Classification accuracy of 18.56% was required for the model to be considered better than chance. The model failed to correctly classify observations into the "Comfort Seeking Nature Buff" (Groups 4), "Laid Back Tourist" (Group 5) or "Good Time Guys" (Group 7) categories. The tendency of this model was to classify observations as belonging in the "Fan Club Member" category. Classification using both variables is not recommended.

Means and standard deviations for the clusters are shown in Table 68, Appendix B. Implications of these findings will be discussed in Chapter 5.

Hypothesis 8

Tourists living more than 200 miles from a region view that region differently from those tourists living closer.

Two-group, step-wise discriminant analysis was performed to determine if tourists living more than two hundred miles from Traverse City held different beliefs about the area's attributes than persons living less than

200 miles from Traverse City. The criterion variable for this hypothesis was round-trip distance from home (i.e., question 25) and predictor variables were beliefs about the area's attributes (i.e., questions one through ten).

Group 1 in the analysis consisted of 171 individuals who reported traveling distances from their homes of 199 miles or less. Group 2 was composed of 94 individuals who indicated the distance from their home to Traverse City was at least 200 miles. Fifty cases were excluded from the analysis. Of the 50 excluded cases, 46 observations were excluded because of missing predictor data and four were excluded because of a missing group code.

As with all previous analysis, a split sample was used for purposes of validation. The randomly selected sample used to test the model consisted of 90 observations in Group 1 and 56 observations in Group 2.

In order that all variables included in the model were significant at the .05 level, a minimum F-statistic level of $F_{1,145} = 3.92$ was set. One variable, beliefs about shopping facilities, reached the level of significance necessary for inclusion in the model (see Table 31). The hypothesis was accepted.

Table 31

Step-wise Discriminant Analysis: Beliefs about Area Attributes as a Function of Travel Distance

| Step Number | Variable Entered | F Value to Enter or Remove | Wilks' Lambda | Approximate F-Statistic | Degrees of Freedom |
|---|---|---|---|---|---|
| 1 | Shopping facilities | 6.43 | .9573 | 6.43* | 1,144 |

* $p < .025$

One canonical function was derived from this analysis. Only one function is derived in a two group analysis. "The maximum number of discriminant functions to be derived is either one less than the number of groups or equal to the number of discriminant variables, whichever is smaller" (Klecka, 1975, p. 442). The function is shown in Table 32. Notice that the groups explained only 4.3% ($R^2$=.0428) of the function variance.

Table 32

Canonical Discriminant Functions: Hypothesis 8

| Function | Eigen-value | Percent of Variance | Canonical Correlation | $R^2$ |
|---|---|---|---|---|
| 1 | 0.045 | 100.0 | .207 | .0428 |

The loading of the significant variable on the canonical function is shown in Table 33.

Table 33

Coefficients for Canonical Variable: Hypothesis 8

| | Function |
|---|---|
| Variable | 1 |
| Shopping facilities | -.616 |
| Constant | 1.583 |

The classification functions used for group classification are shown in Table 69, Appendix B. Cutting scores are shown in Table 70, Appendix B, and could be used to classify a sample into Group 1 or 2 as well. Using the proportional chance criterion (Hair et al., 1979), the two group holdout sample should yield an accuracy rate of 56.53% to be equal to chance classification and 70.66% of the holdout sample to be considered better than chance. The model correctly classified 62.2% of the hold-out sample (see Table 34). A satisfactory classification level was not reached. The classification tendency was to place cases into the larger group (Group 1). This tendency is noted by the correct classification of only 10.5% of the observations in Group 2.

Table 34

Split Sample Classification: Hypothesis 8

| | | Predicted | |
|---|---|---|---|
| Group | Percent Correct | 1 | 2 |
| 1 | 87.8 | 70 | 11 |
| 2 | 10.5 | 34 | 4 |
| | n = | 104 | 15 |

Classification accuracy = 62.2%

Means and standard deviations for both clusters using the total sample are shown in Table 71, Appendix B. This information, in conjunction with the function coefficient, was used to determine group centroids (see Table 35). The histogram in Figure 7 graphically depicts the relationship of the clusters to each other and shows the overlap area between groups.

Table 35

Group Coordinates for Functions 1: Hypothesis 8

| Group | Function 1 |
|---|---|
| 1 | .135 |
| 2 | - .154 |

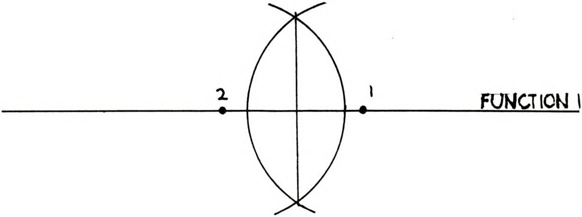



Figure 7 Histogram of Group Plots: Hypothesis 8

Further analysis was undertaken in order to determine if demographic differences existed between persons traveling more than 200 miles to the Traverse City area as compared to those living closer to the area. The variables of social index, income, age, sex and educational attainment were included in the analysis. The F-statistic level of 3.92 was set so that the first variable entered in the model was significant at the alpha = .05 level. None of the variables reached the level necessary for inclusion into the model. Significant demographic differences did not exist between the two groups. Results of the step-wise discriminant analysis are shown in Table 72, Appendix B. Means and standard deviations for the groups are shown in Table 73, Appendix B.

## Summary of Findings

A summary of the statistical analysis is given in Table 36. Discriminant analysis (BMDP7M) was the selected technique for testing Hypotheses 1 through 4 and for testing Hypotheses 6 through 8. Log-linear analysis (BMDP4F) was selected to test Hypothesis 5. A summary of the findings are listed in Table 37. The analysis yielded statistically significant findings for Hypotheses 1, 2, 3, 6, and 8. Variables used to test for Hypotheses 4, 5, and 7 failed to yield statistically significant results.

The interpretation and implications of these finding

will be discussed in Chapter 5.

Table 36

Summary of Statistical Analysis

| | Hypothesis | Variables | Result of Analysis |
|---|---|---|---|
| H1: | Differences in attribute scores exist among tourist typologies | Dependent = cluster membership. Independent = water sport facilities; non-water sport facilities; historic & cultural interests; scenic beauty; pleasant attitudes of the people; opportunity for rest & relaxation; shopping facilities; cuisine; entertainment; suitable accommodations. | Accepted |
| H2: | Differences in beliefs about the degree to which an area possesses an attribute exist among tourist typologies. | Dependent = cluster membership. Independent = beliefs about area attributes; i.e., question 1 through question 1Ø. | Accepted |
| H3: | Attribute evaluation differences exist among tourist typologies. | Dependent = cluster membership. Independent = evaluative criteria; i.e., question 11 through question 2Ø. | Accepted |
| H4: | Demographic differences exist among tourist typologies. | Dependent = cluster membership. Independent = social index scale; income; age; education; sex. | Rejected |

Table 36 continued

| | Hypothesis | Variable | Result of Analysis |
|---|---|---|---|
| H5: | Differences in travel behavior exist among tourist typologies. | Dependent = cluster membership. Independent = means of transportation; reason for visit; round trip travel distance; number financially responsible for on trip; composition of travel party; frequence of visits to test area; frequency of visits to other Michigan resort areas. | Rejected |
| H6: | Differences exist among tourist typologies in regard to travel expenditures. | Dependent = cluster membership. Independent = expenditures for water sports; non-water sports; historic & cultural activities; sight-seeing; shopping; cuisine; entertainment; accommodations; miscellaneous expenses. | Accepted |
| H7: | Differences exist among tourist typologies in their travel response to changing economic conditions. | Dependent = cluster membership. Independent = restriction of travel destination choice & restriction of vacation length due to increased costs; i.e., questions 21 & 22. | Rejected |
| H8: | Tourists living more than 200 miles from a region view that region differently from those tourists living closer. | Dependent = travel distance. Independent = beliefs about area attributes; i.e., question 1 through question 10. | Accepted |

Table 37

Summary of Findings

| Hypothesis | Significant Variables |
|---|---|
| H1 | Scenic beauty<br>Shopping facilities<br>Non-water sport facilities<br>Cultural interests<br>Suitable accommodations<br>Entertainment<br>Pleasant attitudes of the people<br>Rest & relaxation<br>Cuisine<br>Water sport facilities |
| H2 | Cuisine<br>Non-water sport facilities<br>Scenic beauty<br>Entertainment<br>Shopping facilities<br>Pleasant attitudes of the people |
| H3 | Water sport facilities<br>Shopping facilities<br>Non-water sport facilities<br>Scenic beauty<br>Suitable accommodations<br>Cuisine<br>Cultural interests |
| H4 | None of the variables were significant |
| H5 | None of the variables were significant |
| H6 | Cuisine<br>Entertainment |
| H7 | None of the variables were significant |
| H8 | Shopping facilities |

# CHAPTER V

## Discussion

Eight hypothesis were formulated to achieve the objectives of this study. Objective 1 was to determine attitudes tourists held toward a resort area. This objective was fulfilled by using Goodrich's (1978) ten tourist attracting attributes in conjunction with Fishbein's (1967) linear multiplicative model.

Objective 2 was to define tourist typologies based upon the attitude held by tourists. Toward achieving this objective, cluster analysis was undertaken to develop tourist clusters. Hypotheses 1 through 3 were developed to examine attitude, belief and attribute evaluation differences toward the area.

Objective 3 was to determine if demographic and trip behavior differences existed among tourist typologies. Hypothesis 4 to Hypothesis 7 were developed to fulfill this objective.

Hypothesis 8 was formulated to determine whether travel distance was, from a market segmentation perspective, a more practical devise for typology

differentiation. This hypothesis was used in partial fulfillment of Objective 4, that is, to identify tourist segments which could be used in development of marketing strategies for the Traverse City area. Analysis of all hypotheses were necessary to fulfill Objective 4. Results from the analysis were discussed in Chapter 4. A discussion of these findings is the focus of this chapter.

Hypothesis 1: Differences in attribute scores exist among tourist typologies.

The major components of the Fishbein model (1967) were examined by use of Hypothesis 1. All of the variables in the model were statistically significant. A review of Table 42, Appendix B, shows that "Cheerleaders" (Group 1) and Group 10 were polarized in their attribute attitudes (belief X evaluative criteria) with "Cheerleaders" (Group 1) holding very positive attribute attitudes and persons in Group 10 holding somewhat negative attribute attitudes about Traverse City. Members of the other groups were located somewhere on the continuum. This information tells us that perceptions of area attributes were significantly different for members of the various groups.

Hypothesis 2: Differences in beliefs about the degree to which an area possesses an attribute exist among tourist typologies.

Belief differences among groups were examined with Hypothesis 2. Belief ratings (i.e., offers some to offers very much; neutral; offers little to offers very little) of each significant attribute are shown in Table 38. Based upon attribute belief ratings, a picture of the area's perceived "image" was derived. "Cheerleaders" (Group 1), "Fan Club Member" (Group 2), "Nature Enthusiast" (Group 3) and "Comfort Seeking Nature Buff" (Group 4) possessed a positive image of Traverse City. "Cheerleaders" (Group 1) believed Traverse City offered a great deal of all attributes and to a lesser degree this opinion was shared by the "Fan Club Member" (Group 2), the "Nature Enthusiast" (Group 3) and the "Comfort Seeking Nature Buff" (Group 4).

The "Laid Back Tourist" (Group 5) and the "Good Time Guys" (Group 7) were more restrained in their assessment of area attributes. For the most part, they stated that Traverse City offered some of the attributes but were not as enthusiastic as the "Cheerleaders" (Group 1), the "Fan Club Member" (Group 2), the "Nature Enthusiast" (Group 3) or the "Comfort Seeking Nature Buff" (Group 4).

Among the non-viable segments, Group 6 members were similar to the "Laid Back Tourist" (Group 5) and the "Good Time Guys" (Group 7) segments. Group 8 members were less

Table 38

Belief Ratings for Significant Discriminant Variables

| Variable | Groups 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1Ø |
|---|---|---|---|---|---|---|---|---|---|---|
| Cuisine | + | + | + | + | + | + | Ø | Ø | Ø | - |
| Non-water sport facilities | + | + | + | + | Ø | Ø | Ø | Ø | - | - |
| Scenic beauty | + | + | + | + | + | + | + | + | + | - |
| Entertainment | + | + | + | + | + | Ø | + | - | - | Ø |
| Suitable accommodations | + | + | + | + | + | + | + | + | + | - |
| Pleasant attitudes of the people | + | + | + | + | + | + | + | Ø | + | - |
| Shopping facilities | + | + | + | + | + | Ø | Ø | Ø | Ø | - |

+ = mean rating of 1.Ø to 3.5 (offers some)
Ø = mean rating of 3.6 to 4.5 (neutral)
- = mean rating of 4.6 to 7.Ø (offers little)

impressed with Traverse City than the aforementioned groups. Individuals in this group believed the area offered many opportunities for suitable accommodations and scenic beauty but also believed few entertainment possibilities existed and were neutral about all other attributes.

Group 9 members believed Traverse City offered some scenic beauty, people with pleasant attitudes and suitable accommodations but were neutral about cuisine offerings and shopping facilities and believed little of the other attributes were offered. Group 10 members were not favorably impressed with attributes offered by the area and, with the exception of entertainment opportunities, believed the area had, in respect to the tourist attracting attributes, little to offer.

Recall that whether the image of an area is a true representation of what the area has to offer is relatively unimportant. What is important is the image as it exists in the mind of the tourist. The results shown in Table 38 demonstrate clearly how those in different groups perceive their environment. Although the physical features (whether biological or human constructed) of the environment were a given, perceptions of the environment differed among typologies. Perceptual differences regarding human constructed environments were noted by the stated belief ratings of non-water sport facilities, shopping facilities,

suitability of accommodations and cuisine. Different values and motives, an outgrowth of the human behavioral environment, affected perceptions of entertainment opportunities and perceptions of attitudes of people encountered.

A review of the group means (Table 45, Appendix B) revealed interesting results. Among the significant variables the most highly rated attribute (i.e., the area offered a great deal of this) for the viable segments of "Fan Club Member" (Group 2), "Nature Enthusiast" (Group 3) and "Comfort Seeking Nature Buff" (Group 4), "Laid Back Tourist" (Group 5) and "Good Time Guys" (Group 7) was scenic beauty. "Cheerleaders" (Group 1) ranked availability of shopping facilities as the most highly rated attribute for Traverse City. These findings support the research of Ritchie and Zins (1978) who found that natural beauty and climate were the single most important factors in attractiveness of an area.

Hypothesis 3: Attribute evaluation differences exist among tourist typologies.

In Table 39 personal evaluation ratings (i.e., important; neutral; unimportant) of the attributes are displayed. Recall that the subjects were requested to specify how important the ten tourist attracting attributes were in the decision to visit a particular destination.

Table 39

Evaluative Criteria Ratings for Significant Discriminant Variables

| | Groups | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1Ø |
| Water sport facilities | + | + | + | + | + | + | + | + | Ø | - |
| Shopping facilities | + | + | + | + | + | Ø | Ø | Ø | Ø | - |
| Non-water sport facilities | + | + | + | + | Ø | Ø | Ø | Ø | - | - |
| Scenic beauty | + | + | + | + | + | + | + | + | + | - |
| Suitable accommodations | + | + | + | + | + | + | + | + | Ø | - |
| Cuisine | + | + | + | + | + | + | Ø | + | - | - |
| Cultural interests | + | + | + | Ø | Ø | Ø | + | Ø | Ø | - |

+ = mean rating of 1.Ø to 3.5 (important)
Ø = mean rating of 3.6 to 4.5 (neutral)
- = mean rating of 4.6 to 7.Ø (unimportant)

"Cheerleaders" (Group 1), the "Fan Club Member" (Group 2), and the "Nature Enthusiast" (Group 3) rated all significant variables as important factors in the vacation decision process. The "Comfort Seeking Nature Buff" (Group 4) was neutral regarding historic and cultural interests but rate all other variables as important.

The "Laid Back Tourist" (Group 5) was similar to the "Comfort Seeking Nature Buff" (Group 4) except for a neutral rating regarding the importance of non-water sports facilities. "Good Time Guys" (Group 7) rated water sport facilities, scenic beauty, suitable accommodations and historic and cultural interests as important but were neutral in the assessment of the importance of the other variables.

Among the significant discriminator variables, the most important tourist attraction attribute (see Table 48, Appendix B) for the "Nature Enthusiast" (Group 3) and the "Comfort Seeking Nature Buff" (Group 4), was water sport facility availability. Opportunities for suitable accommodations was the most important attribute for "Cheerleaders" (Group 1), the "Fan Club Member" (Group 2), and "Good Time Guys" (Group 7). The most important attribute for the "Laid Back Tourist" (Group 5) was scenic beauty. These findings tend to confirm the results of Goodrich (1977b). Through benefit bundle analysis, Goodrich found that scenic beauty and availability of suitable

accommodations were among the most highly valued benefits to his sample and that water sport facilities was in the second most highly valued attribute bundle.

A comparison of classification accuracy of the belief model with the evaluative criteria model indicates that "Cheerleaders" (Group 1) were successfully classified using either the beliefs or the evaluative criteria model. Both models resulted in similar classification success rates for the viable segments of "Fan Club Member" (Group 2), "Nature Enthusiast" (Group 3) and "Comfort Seeking Nature Buff" (Group 4). The evaluative criteria model, however, resulted in higher correct classification rates for the "Laid Back Tourist" (Group 5) and "Good Time Guys" (Group 7) than when classification was based upon attribute beliefs.

Hypothesis 4: Demographic differences exist among tourist typologies.

Demographic differences were not noted among the groups. While failing to yield statistically significant results, these findings may be an indication of the type of individuals or families attracted to the Traverse City area and/or may also be an indication of the early summer traveler to that area. As shown in Table 56 (Appendix B), social index scales were similar indicating the sample was composed of persons employed in "white collar" positions. Family income levels for the groups were approximately 12%

above the median income for a family of four (U. S. Department of Commerce, 1984, p. 460) and were an indication of middle class.

Mean educational levels for the viable segments indicated group members had some college education. Jorgenson (1976) reported that 45% of travelers in the 1972 National Travel Survey had completed some college. (Approximately 63% of individuals in the Traverse City sample reported some college education.) As suggested by Hagemann (1981), a higher education may be a predictor of travel propensity.

The mean age range for the groups was approximately 32 to 47 years. According to the National Travel Survey (Jorgenson, 1976), 60% of all travelers were in the 25 to 64 year age bracket. Based upon this information, the age range in this study was not a surprising finding.

While these findings did not lead to an increased understanding of tourist typology differences, the results nevertheless support previously reported research (Hagemann, 1981; Jorgenson, 1976). These findings may also indicate that Traverse City attracts, at least over Memorial Day weekend, a fairly homogeneous tourist population. Failure of the analysis to identify demographically unique segments was a result of homogeneity.

Hypothesis 5: Differences in travel behavior exist among tourist typologies.

Although significant travel behavior differences were not noted, data shown in Table 59 (Appendix B) confirmed some previously known information. In accordance with information stated in "Summer Travel Outlook" (1984), 80% or more of the respondents in each group traveled to the area by automobile for purposes of outdoor recreation. Also, within each typology, the majority of respondents were financially responsible for one or two persons.

With the exception of the "Fan Club Member" (Group 2), a majority were in travel groups composed of persons over 18 years of age. Hagemann (1981) found that the presence of small children acts as a physical constraint upon travel. This may explain the absence of children in the majority of travel groups.

The query regarding frequency of visits to Traverse City revealed that individuals in all of the viable segments visited the area more than once a year. Frequency of visits to other Michigan resort areas (question 44) was more often than once a year for "Cheerleaders" (Group 1), the "Fan Club Member" (Group 2), the "Comfort Seeking Nature Buff" (Group 4), the "Laid Back Tourist" (Group 5) and "Good Time Guys" (Group 7). A majority of individuals in the "Nature Enthusiast" (Group 3) segment visited other

Michigan resort areas every other year or less. These findings may indicate that persons in this sample exhibited a propensity for frequent, short trips within the state of Michigan.

Hypothesis 6: Differences exist among tourist typologies in regard to travel expenditures.

Although significant differences were noted for expenditures on cuisine and entertainment, it was not surprising that statistically differentiation was unsuccessful. As mentioned in Chapter 2, individuals experience difficulty in recalling details concerning levels of expenditures for any particular product. Because the travel experience is composed of numerous transactions and expenditures, totals of these expenditures are often inaccurate and seldom give satisfactory estimates of actual amounts spent. Respondents in this study may have been unable to accurately recall the transactions involved in the trip.

The largest total expenditures were reported by the "Nature Enthusiast" (Group 3) followed by the "Fan Club Member" (Group 2), "Cheerleaders" (Group 1), the "Comfort Seeking Nature Buff" (Group 4), the "Laid Back Tourist" (Group 5) and "Good Time Guys" (Group 7). Market potential for each group (both viable and non-viable) is also shown in Table 40.

Table 40

Market Potential

| Segment | n | Size | Average Amount Spent | Segment Potential |
|---|---|---|---|---|
| 1 | 46 | 18.4% | $275.58 | $12,677.14 |
| 2 | 54 | 21.6% | $317.21 | $17,129.34 |
| 3 | 43 | 17.2% | $392.85 | $16,892.55 |
| 4 | 34 | 13.6% | $245.11 | $ 8,333.40 |
| 5 | 25 | 10.0% | $191.59 | $ 4,789.75 |
| 6 | 9 | 3.6% | $123.25 | $ 1,109.25 |
| 7 | 17 | 6.8% | $152.95 | $ 2,600.15 |
| 8 | 7 | 2.8% | $122.00 | $ 854.00 |
| 9 | 10 | 4.0% | $111.25 | $ 1,112.50 |
| 10 | 5 | 2.0% | $ 25.00 | $ 125.00 |

Expenditure ratios were examined to determine expenditure similarities (see Table 62, Appendix B). Expenditure ratios (expenditure/total expenditure) for the viable segments for cuisine ranged from 20.5% (Cheerleaders, Group 1) to 23.3% (Nature Enthusiast, Group 3). Linden (1980) reported that approximately 25% of the travel budget was for food and beverages. Accommodation expenditure ratios for viable segments of the Traverse City sample range from 19.1% (Cheerleaders, Group 1) to 30% (Comfort Seeking Nature Buff, Group 4). As reported by Linden (1980), approximately 16% of the travel budget was for lodging. The Traverse City sample, therefore, spent slightly less for food and more (percentage-wise) for lodging than expected.

Expenditure ratios, in conjunction with the total segment potential, were used to identify segments representing the greatest potential for each expenditure category. "Cheerleaders" (Group 1) represented the largest dollar potential for shopping, non-water sport activities and cultural activities. The "Fan Club Member" (Group 2) represented the largest dollar potential for accommodations, cuisine, entertainment, non-water sport activities and miscellaneous expenditures. The "Nature Enthusiast" (Group 3) represented the greatest potential for sight-seeing and water sport activities (see Table 41).

Hypothesis 7: Differences exist among tourist typologies in their travel response to changing economic conditions.

Although this hypothesis was rejected, an examination of sample demographics lead to increased understanding of the Traverse City sample. Analysis of group demographics (Hypothesis 4) revealed a demographically homogeneous sample. Recall that respondents in this sample were in the middle income bracket, generally employed in "white collar" occupations, in their mid-30's and had achieved a slightly better than average level of education. The population portion represented by this sample may have been unaffected by the 1980-81 economic slow-down and, therefore, may have found it unnecessary to alter vacation plans. Corsi and Harvey (1979) reported that despite economic downturn,

Table 41

Total Segment Potential by Expenditure Classification

| Variable | Group 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| n = | (46) | (54) | (43) | (34) | (25) | (9) | (17) | (7) | (10) | (5) |
| Water sports | 138.18 | 547.45 | 694.61 | 212.51 | 75.01 | 00.00 | 31.88 | 175.00 | 75.01 | 00.00 |
| Non-water sports | 460.04 | 466.60 | 122.02 | 42.50 | 58.82 | 22.50 | 37.18 | 93.33 | 00.00 | 00.00 |
| Cultural activities | 306.65 | 116 99 | 24.43 | 53.84 | 00.00 | 4.50 | 90.30 | 00.00 | 50.00 | 00.00 |
| Sight-seeing | 383.34 | 929.95 | 1136.86 | 205.43 | 309.84 | 11.25 | 93.50 | 23.33 | 75.01 | 00.00 |
| Shopping | 3211.38 | 2838.16 | 2984.18 | 1565.24 | 1066.20 | 78.75 | 568.45 | 134.16 | 437.50 | 50.00 |
| Cuisine | 2598.09 | 3705.25 | 2929.41 | 1898.26 | 1029.41 | 213.75 | 600.48 | 159.84 | 37.50 | 25.00 |
| Entertainment | 1303.29 | 2263.64 | 846.85 | 842.87 | 544.12 | 438.75 | 233.75 | 116.67 | 25.00 | 00.00 |
| Accommodations | 2424.29 | 4356.16 | 2721.00 | 2500.29 | 1229.43 | 209.25 | 592.89 | 87.50 | 237.50 | 00.00 |
| Miscellaneous | 1851.81 | 1905.13 | 1133.20 | 1012.88 | 477.97 | 130.50 | 351.70 | 64.17 | 175.00 | 50.00 |

higher income households, headed by a better than average educated "white collar" worker were less likely to alter vacation travel plans. The findings of this current study lend some support to the Corsi and Harvey (1979) study findings.

Hypothesis 8: Tourists living more than 200 miles from a region view that region differently from those tourists living closer.

Although the belief regarding shopping facilities was a significant group discriminator, an examination of group means (see Table 63, Appendix B) revealed the groups having nearly identical area attribute beliefs. These findings are contrary to results of the Scott, Schewe and Frederick's (1978) study in which they found tourists traveling more than 200 miles from an area viewed the destination region differently than those living closer. Tourists in the Traverse City study generally rated the area as possessing some of each attribute. With the exception of opportunity for rest and relaxation, persons living 200 miles or more from the area rated all attributes as slightly more favorable (but not significantly so) than those living closer. Therefore, with the exception of availability of shopping facilities, individuals in these two groups shared common beliefs about the area. Ecosystemically speaking, these tourists viewed the environment as possessing the attributes to the same

degree.

An analysis of demographic differences between the groups failed to result in any significant differences. The two groups were fairly homogeneous.

Description of Viable Segments

The summarization of group information for the viable segments culled from the hypothesis analysis is presented in Table 42. As shown, the groups were fairly homogeneous regarding demographic and travel behavior. The majority of respondents in the viable segments traveled between 200 and 400 miles round-trip to Traverse City. Financially responsible for one or two persons, they traveled in cars without camping equipment for purposes of outdoor recreation. The intended length of stay in the area was two to three days and the majority of respondents were repeat visitors to the area returning more than once a year. Research into the repeat vacation phenomenon revealed that those seeking rest and relaxation tend to visit familiar sites (Gitelson & Crompton, 1984). Rest and relaxation was among the more highly valued attributes for persons in the segments.

Members of Group 1, "Cheerleaders", represented 18.4% of the total sample. "Cheerleaders" held the most favorable attitude about the Traverse City area. These

Table 42

Description of Viable Tourist Typologies

| Group = | Cheerleaders | Fan Club Member | Nature Enthusiast | Comfort Seeking Nature Buff | Laid Back Tourist | Good Time Guys |
|---|---|---|---|---|---|---|
| n = | (46) | (54) | (43) | (34) | (25) | (17) |
| | | | **Beliefs** | | | |
| Most Offered Attribute | R & R; Scenic beauty; Shopping facilities | Scenic beauty; Water sport facilities; R & R; | Scenic beauty; R & R; Water sport facilities | Scenic beauty; R & R; Water sport facilities | Scenic beauty; R & R; Accommodations | R & R; Scenic beauty; Water sport facilities |
| Least Offered Attribute | Entertainment; Non-water sport facilities; Cultural interests | Non-water sport facilities; Entertainment; Cultural interests | Non-water sport facilities; Entertainment; Cultural interests | Non-water sport facilities; Entertainment; Cultural interests | Entertainment; Non-water sport facilities; Cultural interests | Non-water sport facilities; Cuisine; Cultural interests |
| | | | Personal Evaluation | | | |
| Most Important Attribute | R & R; Accommodations; Water sport facilities | Accommodations; R & R; Scenic beauty | Water sport facilities; Scenic beauty; Accommodations | R & R; Water sport facilities; Scenic beauty | R & R; Scenic beauty; Accommodations | Accommodations; R & R; Scenic beauty |
| Least Important Attribute | Shopping facilities; Cultural interests | Shopping facilities; Cultural interests | Shopping facilities; Non-water sport facilities; Cultural interests | Shopping facilities; Cultural interests | Cultural interests; Non-water sport facilities | Cuisine; Shopping facilities |
| Fit Within Ecosystem | Human constructed | Human constructed & Natural environment | Natural environment & Human constructed | Human behavioral & Natural environment | Human behavioral & Natural environment | Human constructed & Human behavioral |

Table 42 continued

| Group = / Variable | Cheerleaders | Fan Club Member | Nature Enthusiast | Comfort Seeking Nature Buff | Laid Back Tourist | Good Time Guys |
|---|---|---|---|---|---|---|
| Transportation: | Car w/o camping equipment | Car w/o camping equipment | Car w/o camping equipment | Car w/o camping equipment | Car w/o camping equipment | Car w/o camping equipment |
| Reason for visit: | Recreation | Recreation | Recreation | Recreation | Recreation | Recreation |
| Round-trip distance: | 200-400 miles | 200-400 miles | 200-400 miles | 200-400 miles | 200-400 miles | 200-400 miles |
| Length of stay in area: | 2-3 nights | 2-3 nights | 2-3 nights | 2-3 nights | 2-3 nights | 2-3 nights |
| Financial responsibility: | 1 or 2 persons | 1 or 2 persons | 1 or 2 persons | 1 or 2 persons | 1 or 2 persons | 1 or 2 persons |
| Composition of travel party: | >18 years | Some <18 years | >18 years | >18 years | >18 years | >18 years |
| Respondent's age: | 43 | 33 | 37 | 35 | 34 | 35 |
| Education: | 14 years | 14 years | 15 years | 15 years | 15 years | 15 years |
| Family income: | $30,700 | $31,900 | $35,700 | $31,000 | $32,800 | $32,800 |
| Expenditures: | | | | | | |
| Most spent | Shopping; Cuisine | Accommodations; Cuisine | Shopping; Cuisine | Accommodations; Cuisine | Accommodations; Shopping | Cuisine; Accommodations |
| Least spent | Water sports | Cultural activities | Cultural activities | Non-water sports | Cultural activities; Non-water sports | Water sports; Non-water sports |
| Frequency of visits to: | | | | | | |
| Traverse City | More than once a year | More than once a year | More than once a year | More than once a year | More than once a year | More than once a year |
| Other Michigan resort areas | More than once a year | More than once a year | Every year or less | More than once a year | More than once a year | More than once a year |

persons believed the area was superior in the amount of attributes offered and that these attributes were all important considerations in tourist destination decisions. The attributes which were most important to them, however, were in the human constructed environment.

Although statistically significant demographic differences were not noted, this group represented the oldest group of respondents and reported the lowest average family income. Ranking third in total expenditures, "Cheerleaders" represented the greatest overall dollar expenditures for shopping and cultural activities, however, availability of cultural interests and shopping facilities were the least important characteristics for this segment. "Cheerleaders" spent, proportionally, more on non-water sport activities than any other segment yet rated this attribute as one least offered in the area.

While the availability of water sport facilities was an important consideration in the "Cheerleaders" decision process, this segment spent the least on the activity proportionally. Water sport activities undertaken by this segment may have been those requiring low expenditures. Availability of accommodations was an important attribute for "Cheerleaders", although they spent, proportionally, less on accommodations that other segments.

These seeming inconsistencies should be addressed in

developing a marketing strategy to appeal to this segment. The availability of comfortable, reasonably priced accommodations should be emphasized while reminding "Cheerleaders" that the area possessed those attributes necessary to fulfill their needs and wants.

Group 2, the "Fan Club Member", represented 21.6% of the total sample. The "Fan Club Member" held very favorable attitudes about the Traverse City area; however, the attitude held was not as favorable as that of the "Cheerleader". The "Fan Club Member" segment offered the largest dollar potential for the area. Reporting the second largest total expenditure, the "Fan Club Member" represented the largest tourist segment. It is vital for the financial success of Traverse City, that a marketing strategy for the area include this segment.

Ecosystemically, the most important attributes for this segment were in the human constructed environment and the natural environment. Availability of suitable accommodations was the most important attribute for the "Fan Club Member" followed by rest and relaxation, and scenic beauty. Fortunately, the area was perceived as offering alot of these attributes.

An examination of expenditure ratios (see Table 62, Appendix B) shows that the "Fan Club Member" spent a larger percentage on accommodations and entertainment than any

other viable segment. Accommodation expenditures may, in fact, be a function of travel party composition. Generally, the "Fan Club Member" traveled with some persons under age 18 and this may have necessitated consumption of more accommodations.

While believing the area offered many accommodation opportunities, they also believed the area offered fewer entertainment opportunities than desired. This belief identifies an area of potential expansion for Traverse City. To increase area desirability for the "Fan Club Member", facility development should include expansing entertainment opportunities. Steps should also be taken to increase the "Fan Club Member's" awareness of current entertainment opportunities. In a marketing strategy, availability of entertainment and suitable accommodation opportunities should be emphasized.

The most important attributes for members of the third group were in the natural environment. Group 3, the "Nature Enthusiast", represented 17.2% of the total sample. Reporting the highest family income level, the "Nature Enthusiast" reported the highest levels of expenditures while in the area. As with other groups, a propensity for frequent travel to the Traverse City area was reported. However, unlike the other segments, the "Nature Enthusiast" did not visit other Michigan resorts as frequently. This may be an indication of locational

loyality to Traverse City. Recalling the repeat visitor phenomenon findings (Gitelson & Crompton, 1984), the "Nature Enthusiast" may have been seeking rest and relaxation and found this in the interaction of natural environment offerings as enhanced by man.

Proportionally, the "Nature Enthusiast" spent more on water sport activities, sight-seeing and cuisine than the other segments. When examining within segment total expenditures, the "Nature Enthusiast" spent the most money on shopping, cuisine and accommodations. Therefore, while seeking natural beauty, the "Nature Enthusiast" enjoyed life's comforts and spent accordingly. A strategy aimed at this segment should emphasize the area's natural beauty and features but also provide information concerning availability of good accommodations and cuisine.

The tourist attracting attributes rated as most important for the "Comfort Seeking Nature Buff" (Group 4) were in the human behavioral and natural environment. Rest and relaxation was the most important attribute for members of this segment. Spending more, proportionally, on accommodations than members of other segments, the "Comfort Seeking Nature Buff" represented 13.6% of the total sample.

This segment offers great potential for those marketing accommodations in the Traverse City area

particularly because the "Comfort Seeking Nature Buff" visited Traverse City more than once a year. A strategy developed for this segment should emphasize that a relaxing pace and good accommodations are available in a naturally beautiful area. Availability of water sport facilities should also be stressed.

Persons in the "Laid Back Tourist" (Group 5) segment sought tourist attracting attributes encompassed within the human behavioral and natural environments. Representing 10% of the sample, rest and relaxation followed by the availability of scenic beauty and suitable accommodations were the most important attributes for the "Laid Back Tourist".

The "Laid Back Tourist" visited Traverse City to relax and was successful in doing so. The relaxing style of Traverse City should be emphasized in a marketing strategy developed for this segment. The "Laid Back Tourist" also spent the greater proportion of their money on shopping, cuisine and entertainment. The availability of these activities should be stressed.

Attributes existing in the human constructed and behavioral environments were sought by persons in Group 7. "Good Time Guys", representing 6.8% of the total sample, reported the greatest proportion of their expenditures on cuisine, accommodations and shopping. "Good Time Guys"

ranked second on proportional expenditures for cuisine; however they ranked availability of cuisine opportunities as relatively unimportant in their decision process and rated Traverse City as having somewhat poor dining opportunities.

The commitment of a greater percentage of expenditures to cuisine cannot be explained as a function of total family income because "Good Time Guys" reported the second highest family income. Subconsciously, "Good Time Guys" may have been rationalizing their visit to an area lacking an attribute upon which they spend alot of money by stating its unimportance. The fact that a large percent was spent on this activity was an indication of activity preference.

"Good Time Guys" also spent more, proportionally, on cultural activities but reported the belief that the area lacked cultural activities. To increase area attractiveness for "Good Time Guys", an improvement in the amount of historic and cultural interest is necessary. Because all segments expressed the belief that, when compared to all other attributes, Traverse City offers few opportunities for cultural activities, reallocation of capital resources (both public and private), is necessary to improve the area's historic and cultural interest. Other attributes ranked as important by "Good Time Guys" were perceived as being adequately available in the area.

A marketing strategy emphasizing an enjoyable, relaxing atmosphere with many opportunities for good food and accommodations is recommended for the "Good Time Guys" segment. Historic and cultural interests in the area should also be stressed.

In conclusion, the marketing strategies prosented in this chapter are those developed for specific target groups and are recommended over a mass marketing strategy. The "Cheerleader" should be reminded that Traverse City offers comfortable, reasonably priced accommodations and that the area possesses those attributes necessary to fulfill their needs and desires. When appealing to the "Fan Club Member", the opportunities for entertainment and suitable accommodations should be emphasized. A marketing strategy developed to appeal to the "Nature Enthusiast" should provide information concerning the accommodation and cuisine opportunities, as well as emphasize the features and natural beauty of the Traverse City area. To appeal to the "Comfort Seeking Nature Buff" the relaxing pace of Traverse City and the availability of good accommodations and water sport facilities in a naturally beautiful area should be emphasized. The relaxing style of Traverse City and the availability of shopping, cuisine and entertainment opportunities should be included in a strategy developed to appeal to the "Laid Back Tourist". Finally, to attract the "Good Time Guys" the developed strategy should emphasize

Traverse City's enjoyable, relaxing atmosphere and the opportunities for good food, accommodations and historic and cultural activities.

# CHAPTER VI

## Summary and Recommendations

The purpose of this pilot study was to isolate unique tourist segments within the tourist market which are likely to respond favorably to market strategies. Information which may be used in developing marketing strategies was obtained through use of the following research objectives: 1) determine attitudes tourists held toward a resort area; 2) define tourist typologies based upon the attitudes held by tourists; 3) determine if demographic and trip behavior differences exist among tourist typologies; and identify tourist segments which can be used in development of marketing strategies for the Traverse City area. Funding for the study was provided by the Michigan State University Foundation and the College of Human Ecology.

A questionnaire was developed to measure components of the Fishbein model (1967a). Ten tourist attracting attributes developed by Goodrich (1978) were incorporated into the questionnaire and were used to determine attitudes tourists held toward Traverse City. Demographic and travel behavior data was also elicited. Pretested on sophomore college students and revised, the questionnaire consisted

of 45 items.

Selection of Traverse City, Michigan, as the sample site was based upon two criteria. The community is heavily tourist dependent and is located at least 100 miles from a major metropolitan area. Using an activity block design, a trained team collected data during Memorial Day weekend, 1981. Three hundred and fifteen questionnaires were completed during the three day data collection period.

An attitude score was derived by using Fishbein's (1967a) multiplicative, linear model (belief X evaluative criteria). The attitude score was used with cluster analysis to define ten unique tourist groups. Eight hypotheses were developed to test for differences between group means. Two statistical techniques, discriminant analysis and log-linear modeling via multi-way contingency table analysis, were used.

Hypothesis 1 tested components of Fishbein's model. All ten tourist attracting attributes were significant group discriminators. This model successfully classified 82.9% of the validation sample.

Hypothesis 2 tested for differences in beliefs concerning area attributes. Analysis revealed that the attributes cuisine, non-water sport facilities, scenic beauty, entertainment, suitable accommodations, pleasant attitudes of the people, and shopping facilities, were

significant group discriminators. The model successfully classified 37.5% of the validation sample but failed to correctly classify members of those groups not polarized (i.e., offers very much or offers very little) in their beliefs.

An evaluative criteria model (Hypothesis 3), consisting of water sport facilities, shopping facilities, scenic beauty, suitable accommodations, cuisine and historic and cultural interests, correctly classified 43.4% of the validation sample. The evaluative criteria model seemed to yield more consistent classification results. That is, this model correctly classified members of all groups and not just those polarized in their personal evaluations of the attributes.

As a result of the attribute analysis, six viable tourist segments were identified for use in developing marketing strategies. The segments were: Cheerleaders (Group 1); the Fan Club Member (Group 2); the Nature Enthusiast (Group 3); the Comfort Seeking Nature Buff (Group 4); the Laid Back Tourist (Group 5); and the Good Time Guys (Group 7).

Neither demographic (Hypothesis 4) nor trip behavior (Hypothesis 5) data yielded statistically significant results. Tourist typologies did not differ in their travel response to changing economic conditions (Hypothesis 7).

This information led to the conclusion that the sample was fairly homogeneous.

Analysis of expenditure patterns (Hypothesis 6) resulted in a reduced model consisting of expenditures for cuisine and entertainment. This model correctly classified 20% of the validation sample but failed to classify observations into any groups other than "Cheerleaders" (Group 1), "Fan Club Member" (Group 2) or "Nature Enthusiast" (Group 3).

Finally, tourists living more than 200 miles from Traverse City perceived the area as possessing more shopping opportunities than did persons living closer to the area (Hypothesis 8). The model ($Z = W_7(Q7)$) failed, however, to reach an acceptable classification level and is not recommended for use in market segmentation.

## Limitations

The sampling time frame was a major limitation of this study. Information available is that achieved through episodic sampling from a convenience sample defined by time. In other words, only tourists in the area and at the sample sites during Memorial Day weekend were potential respondents.

Aside from the problems associated with use of a

convenience sample, selection of Memorial Day posed another problem. Generally, Michigan elementary and high schools are not adjourned until June. Many family groups do not travel until school vacation. Therefore, more family groups may have been in the sample if the data collection period had been later than Memorial Day.

Tourists participating in the study were required to complete the survey while a data collection team member was at the sampling site (i.e., campground, shopping mall, etc.). The requirement of an immediate time commitment may have increased some tourist's reluctance to participate.

A limitation of the study is that the sample consisted only of persons who selected to visit the area. These individuals may have some vested interest (i.e., time and money commitments) which influenced their assessment of area attributes. Additionally, information which leads to increased understanding of Traverse City's standing in the competitive environment is not available. Greater information concerning the area image could be obtained from a broader-based sample consisting of people familiar with but not necessarily visiting the area. A mail questionnaire could be used to allow for selection of a probability sample and a follow-up on non-respondents.

A second limitation of the study is that perceptions of the area were obtained from only one person in the

traveling unit. No attempt was made to determine if the respondent was the travel unit's decision-maker. By failing to determine the vacation decision-maker (or decision-makers), the actual area attraction may not have been discovered.

The sample consisted of many younger people and was fairly homogeneous. This sampling bias made discrimination among typologies difficult. Because of this, the tourist segments uncovered in the analysis may not be practical for Traverse City market segmentation.

## Recommendations

Based upon the results of this study, the Fishbein model is recommended for use in determining tourists attitude toward an area. The ten tourist attracting attributes are also recommended for inclusion in future studies. An examination of attribute belief ratings as well as personal evaluations of those attributes enables promotors to identify whether facility development is required and where greater promotional emphasis should be focused. This should help to improve the overall tourist package and strengthen the marketing strategy. Information should also be elicited concerning images of other resort areas in order to develop some benchmarks for assessing the study area's competitive position. The relation of the study area in respect to some "ideal" resort should also be

examined.

A majority of subjects in this study visited the Traverse City area at least once a year despite an ambivalent attitude toward the area held by many of the respondents. The underlying reasons for visiting an area should be examined. An on-site study could be done using tourist attracting attributes as well as questions aimed at discovering reasons people travel. Goodrich's attributes are only a part of the reason a tourist selects a destination. The next step is to determine other underlying motivations for destination selection.

Travel is often a family activity therefore it is desirable to examine the influence each family member (whether or not in the travel party) has upon a destination decision. Identification of the principal decision-maker is also recommended in a future study so that promotional efforts of the marketing strategy are not lost by focusing upon persons who may influence activity selection or budget decisions but who do not influence destination decisions. Many of the recommendations have been incorporated into a larger on-going study of tourism in Michigan.

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APPENDICES

# APPENDIX A

## APPENDIX A

This is a study conducted by researchers at Michigan State University. We would appreciate your assistance in completing this questionnaire.

In this section of the questionnaire, we would like to obtain your judgment concerning how much the Traverse City Area offers of the following. Please circle the number with indicates your opinion.

| | | Offers Very Much | | | | | | Offers Very Little | |
|---|---|---|---|---|---|---|---|---|---|
| 1. | Availability of facilities for water sports (e.g.,beaches, sailing, swimming, water skiing, etc.) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | (1) |
| 2. | Availability of facilities for golfing, tennis, etc. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | (2) |
| 3. | Historical and cultural interest (e.g., museums, monuments, historic buildings, the people, their traditions, music, etc.) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | (3) |
| 4. | Scenic beauty (sight-seeing) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | (4) |
| 5. | Pleasant attitudes of the people | 1 | 2 | 3 | 4 | 5 | 6 | 7 | (5) |
| 6. | Opportunity for rest and relaxation | 1 | 2 | 3 | 4 | 5 | 6 | 7 | (6) |
| 7. | Shopping facilities | 1 | 2 | 3 | 4 | 5 | 6 | 7 | (7) |
| 8. | Cuisine | 1 | 2 | 3 | 4 | 5 | 6 | 7 | (8) |
| 9. | Availability of entertainment (e.g., night life) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | (9) |
| 10. | Availability of suitable accommodations | 1 | 2 | 3 | 4 | 5 | 6 | 7 | (10) |

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How important do you think the following factors are in tourists' decisions to visit a resort area?

| | | Very Important | | | | | | Very Unimportant | |
|---|---|---|---|---|---|---|---|---|---|
| 11. | Availability of facilities for water sports (e.g.,beaches, sailing, swimming, water skiing, etc.) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | (11) |
| 12. | Availability of facilities for golfing, tennis, etc. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | (12) |
| 13. | Historical and cultural interest (e.g., museums, monuments, historic buildings, the people, their traditions, music, etc.) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | (13) |
| 14. | Scenic beauty (sight-seeing) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | (14) |
| 15. | Pleasant attitudes of the people | 1 | 2 | 3 | 4 | 5 | 6 | 7 | (15) |
| 16. | Opportunity for rest and relaxation | 1 | 2 | 3 | 4 | 5 | 6 | 7 | (16) |
| 17. | Shopping facilities | 1 | 2 | 3 | 4 | 5 | 6 | 7 | (17) |
| 18. | Cuisine | 1 | 2 | 3 | 4 | 5 | 6 | 7 | (18) |
| 19. | Availability of entertainment (e.g., night life) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | (19) |
| 2Ø. | Availability of suitable accommodations | 1 | 2 | 3 | 4 | 5 | 6 | 7 | (2Ø) |

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Please circle the number which indicates your opinion to which the economy has affected your vacations.

| | Strongly Agree | | | | | | Strongly Disagree | |
|---|---|---|---|---|---|---|---|---|
| 21. I have restricted my vacation destination because of increases in transportation costs. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | (21) |
| 22. I have restricted the length of my vacation because of increased costs in food and accommodations. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | (22) |

---

In the following section of the questionnaire, please indicate by a check ( ) which answer applies to you.

23. Means of transportation to the Traverse City area? (23)

____ Auto/truck without camping equipment (1)
____ Auto/truck with camping equipment (2)
____ Bus (3)
____ Train (4)
____ Airplane (5)
____ Other (6)

24. Although people go to destinations for more than one reason what is the most important reason for you? (Select one) (24)

____ Visit relatives or friends (1)
____ Business (2)
____ Convention (3)
____ Outdoor recreation (4)
____ Entertainment (5)
____ Sight-seeing (6)
____ Personal or family affairs (7)
____ Shopping (8)
____ Other (9)

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25. Round trip distance from your home? (25)

____ under 200 miles (1)
____ 200 to 399 miles (2)
____ 400 to 599 miles (3)
____ 600 to 799 miles (4)
____ 800 to 999 miles (5)
____ 1,000 to 1,999 miles (6)
____ 2,000 miles and over (7)
____ outside the United States and Canada (8)

26. Length of visit in Traverse City area? (26)

____ Visit for day only, not overnight (1)
____ 1 night (2)
____ 2 to 3 nights (3)
____ 4 to 9 nights (4)
____ 10 to 15 nights (5)
____ 16 nights or more (6)

27. How many people are you paying for on this trip? (Including yourself) (27)

____ 1 person (1)
____ 2 persons (2)
____ 3 persons (3)
____ 4 persons (4)
____ 5 persons (5)
____ 6 or more persons (6)

28. Composition of travel household party? (Including yourself) (28)

____ No persons under 18 years old (1)
____ Some persons under 18 years old (2)
____ Only persons under 18 years (3)

How much money do you anticipate spending on the following activities while in the Traverse City area?

29. Water sports (e.g.,beaches, sailing, swimming, water skiing, etc.) $________ (29-31)

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| | | |
|---|---|---|
| 30. Non-water sports (e.g., tennis, golf, etc.) | $______ | (32-34) |
| 31. Historical and cultural activities (e.g., visiting museums, monuments, historical buildings, learning about the people and their traditions, music, etc.) | $______ | (35-37) |
| 32. Sight-seeing | $______ | (38-40) |
| 33. Shopping | $______ | (41-43) |
| 34. Cuisine | $______ | (44-46) |
| 35. Entertainment (e.g., night life) | $______ | (47-49) |
| 36. Accommodations | $______ | (50-52) |
| 37. Miscellaneous | $______ | (53-55)<br>(56-58) |

38. Occupation of the head of your household? (59-60)

____ Professional or technical (1)
____ Manager or administrator, except farm (2)
____ Sales (3)
____ Clerical (4)
____ Craftsperson (5)
____ Machine operator (6)
____ Non-farm laborer (7)
____ Service worker (8)
____ Farm worker (9)
____ Retired (10)
____ Unemployed (11)
____ Other (12)

39. Family income? (61)

____ Under $5,000 (1)
____ $5,000 to $7,499 (2)
____ $7,500 to $9,999 (3)
____ $10,000 to $14,999 (4)
____ $15,000 to $19,999 (5)
____ $20,000 to $24,999 (6)
____ $25,000 to $49,999 (7)
____ $50,000 and over (8)

APPENDIX A

40. Age (At your last birthday) (62)

____ Under 18 years (1)
____ 18 to 24 years (2)
____ 25 to 34 years (3)
____ 35 to 44 years (4)
____ 45 to 54 years (5)
____ 55 to 64 years (6)
____ 65 years and over (7)

41. Your Sex? (63)

____ Male (1)
____ Female (2)

42. Level of education you achieved? (64)

____ Some elementary school (1)
____ Completed elementary school (2)
____ Some high school (3)
____ Completed high school (4)
____ Some college (5)
____ Completed college (4 year degree) (6)
____ Some graduate work (Master's or Professional degree) (7)
____ Completed graduate program (8)

43. How often do you visit this resort area? (65)

____ First visit (1)
____ Every other year or less (2)
____ Once a year (3)
____ More frequently than once a year (4)

44. How often do you visit other resort areas in Michigan? (66)

____ I have never visited any other resort area in Michigan (1)
____ Every other year or less (2)
____ Once a year (3)
____ More than once a year (4)

APPENDIX A

45. Please specify what resort areas in Michigan you have visited:

______________________________________________

THANK YOU FOR YOUR ASSISTANCE
IN COMPLETING THIS QUESTIONNAIRE

# APPENDIX B

APPENDIX B

Table 43

Demographic Description of the Sample

| Variable | Frequency | Percent |
|---|---|---|
| Sex | | |
| Male | 176 | 57.9 % |
| Female | 128 | 42.1 % |
| Family Income | | |
| Under $5,000 | 7 | 2.3 % |
| $5,000 to $7,499 | 6 | 2.0 % |
| $7,500 to $9,999 | 5 | 1.7 % |
| $10,000 to $14,999 | 26 | 8.7 % |
| $15,000 to $19,999 | 20 | 6.7 % |
| $20,000 to $24,999 | 50 | 16.7 % |
| $25,000 to $49,999 | 134 | 44.8 % |
| $50,000 and over | 51 | 17.1 % |
| Age | | |
| Under 18 years | 12 | 3.9 % |
| 18 to 24 years | 60 | 19.4 % |
| 25 to 34 years | 77 | 24.9 % |
| 35 to 44 years | 62 | 20.1 % |
| 45 to 54 years | 50 | 16.2 % |
| 55 to 64 years | 37 | 11.9 % |
| over 65 years | 11 | 3.6 % |

APPENDIX B

Table 43 continued

| Variable | Frequency | Percent |
|---|---|---|
| **Education** | | |
| Some Elementary | 2 | 0.6 % |
| Completed Elementary | 2 | 0.6 % |
| Some High School | 26 | 8.4 % |
| Completed High School | 85 | 27.5 % |
| Some College | 107 | 34.6 % |
| Completed College (4 year degree) | 49 | 15.9 % |
| Some Graduate Work (Master's or Professional degree) | 14 | 4.5 % |
| Completed Graduate Program | 24 | 7.8 % |
| **Occupation of Head of Household** | | |
| Professional or Technical | 83 | 27.0 % |
| Manager or Administrator (except farm) | 59 | 19.2 % |
| Sales | 28 | 9.1 % |
| Clerical | 8 | 2.6 % |
| Craftsperson | 26 | 8.5 % |
| Machine Operator | 30 | 9.8 % |
| Non-Farm Laborer | 2 | 0.7 % |
| Service Worker | 7 | 2.3 % |
| Farm Worker | 1 | 0.3 % |
| Retired | 27 | 8.8 % |
| Unemployed | 5 | 1.6 % |
| Other | 31 | 10.1 % |

APPENDIX B

Table 44

Cluster Centroids and Standard Deviations

| Clusters Derived | | n | Centroid | Standard Deviation |
|---|---|---|---|---|
| | 1 | 7 | 259.14 | 52.92 |
| | 2 | 34 | 124.68 | 21.21 |
| 5 | 3 | 60 | 69.50 | 11.04 |
| | 4 | 76 | 42.11 | 7.27 |
| | 5 | 73 | 19.51 | 6.93 |
| | 1 | 5 | 280.80 | 46.30 |
| | 2 | 11 | 165.45 | 21.28 |
| | 3 | 31 | 109.13 | 11.23 |
| 6 | 4 | 58 | 66.12 | 8.61 |
| | 5 | 72 | 41.40 | 6.80 |
| | 6 | 73 | 19.51 | 6.93 |
| | 1 | 2 | 330.00 | 11.31 |
| | 2 | 5 | 230.80 | 25.57 |
| | 3 | 9 | 156.67 | 9.26 |
| 8 | 4 | 26 | 112.50 | 8.75 |
| | 5 | 26 | 78.92 | 7.57 |
| | 6 | 45 | 58.98 | 5.24 |
| | 7 | 67 | 39.67 | 6.31 |
| | 8 | 70 | 19.06 | 6.72 |
| | 1 | 2 | 330.00 | 8.00 |
| | 2 | 3 | 248.00 | 11.23 |
| | 3 | 2 | 205.00 | 3.00 |
| | 4 | 9 | 156.67 | 8.73 |
| | 5 | 13 | 119.38 | 5.65 |
| | 6 | 19 | 103.38 | 6.21 |
| 13 | 7 | 9 | 78.42 | 4.98 |
| | 8 | 18 | 66.44 | 2.85 |
| | 9 | 29 | 56.52 | 2.82 |
| | 10 | 38 | 45.26 | 2.65 |
| | 11 | 35 | 33.48 | 2.55 |
| | 12 | 35 | 24.94 | 3.20 |
| | 13 | 35 | 13.17 | 3.08 |

# APPENDIX B

Table 45

F-Statistic Level Required for Alpha = .05: Split Sample Size 120

| Step | Degrees of Freedom | Approximate F-Statistic |
|---|---|---|
| 1 | 9,120 | 1.96 |
| 2 | 18,238 | 1.57 |
| 3 | 27,345 | 1.49 |
| 4 | 36,440 | 1.43 |
| 5 | 45,522 | 1.39 |
| 6 | 54,590 | 1.35 |
| 7 | 63,648 | 1.31 |
| 8 | 72,696 | 1.30 |
| 9 | 81,734 | 1.28 |

## APPENDIX B

Table 46

Classification Function: Hypothesis 1

| | Groups | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Water sport facilities | 0.031 | -0.088 | -0.200 | -0.249 | -0.312 | -0.562 | -0.417 | -0.324 | 0.014 | 0.161 |
| Non-water sport facilities | 0.310 | 0.681 | 1.023 | 1.331 | 1.720 | 2.429 | 2.602 | 2.588 | 3.619 | 6.028 |
| Cultural interests | 0.323 | 0.699 | 1.075 | 1.414 | 1.737 | 2.277 | 2.486 | 2.737 | 3.272 | 5.734 |
| Scenic beauty | 0.412 | 0.818 | 1.259 | 1.593 | 2.052 | 2.722 | 3.393 | 3.244 | 3.632 | 8.481 |
| Pleasant attitudes | 0.392 | 0.859 | 1.260 | 1.622 | 2.084 | 2.597 | 3.177 | 3.272 | 4.234 | 7.183 |
| Rest & relaxation | 0.370 | 0.771 | 1.122 | 1.395 | 1.712 | 2.040 | 2.597 | 3.312 | 4.210 | 5.931 |
| Shopping facilities | 0.359 | 0.770 | 1.206 | 1.590 | 2.092 | 2.975 | 3.187 | 3.063 | 3.686 | 7.212 |
| Cuisine | 0.229 | 0.468 | 0.736 | 0.932 | 1.193 | 1.654 | 1.782 | 1.924 | 2.478 | 4.516 |
| Entertainment | 0.298 | 0.618 | 0.983 | 1.215 | 1.484 | 1.813 | 2.228 | 2.897 | 3.349 | 5.352 |
| Accommodations | 0.302 | 0.627 | 0.981 | 1.311 | 1.487 | 1.961 | 2.139 | 2.791 | 3.648 | 6.205 |
| Constant | -4.592 | -12.028 | -25.427 | -40.951 | -63.635 | -113.463 | -140.536 | -170.455 | -265.674 | -816.972 |

APPENDIX B

Table 47

Cluster Means and Standard Deviations: Attitude Scores

| Variable | Group 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| n = | (46) | (54) | (43) | (34) | (25) | (9) | (17) | (7) | (10) | (5) |
| **Means** | | | | | | | | | | |
| Water sport facilities | 1.09 | 1.74 | 1.63 | 2.12 | 2.96 | 3.56 | 5.41 | 6.29 | 17.10 | 34.00 |
| Non-water sport facilities | 1.72 | 3.87 | 6.21 | 8.03 | 14.24 | 15.44 | 15.00 | 14.00 | 27.20 | 34.00 |
| Cultural interests | 2.96 | 7.02 | 12.30 | 15.65 | 16.52 | 17.67 | 15.00 | 23.00 | 21.40 | 23.00 |
| Scenic beauty | 1.15 | 1.41 | 1.60 | 1.94 | 2.12 | 3.11 | 6.53 | 4.86 | 3.60 | 35.40 |
| Pleasant attitudes | 1.26 | 2.63 | 2.65 | 3.32 | 5.52 | 4.89 | 8.06 | 7.71 | 8.20 | 24.40 |
| Rest & relaxation | 1.02 | 1.74 | 1.79 | 2.09 | 2.32 | 4.67 | 6.29 | 6.14 | 10.00 | 17.20 |
| Shopping facilities | 1.43 | 3.69 | 5.86 | 8.56 | 10.64 | 16.44 | 19.94 | 15.43 | 18.50 | 31.20 |
| Cuisine | 1.39 | 2.80 | 4.07 | 5.76 | 7.44 | 10.00 | 16.88 | 13.71 | 18.70 | 30.60 |
| Entertainment | 1.85 | 3.65 | 7.51 | 8.26 | 9.56 | 14.22 | 12.00 | 27.71 | 29.80 | 19.60 |
| Suitable accommodations | 1.13 | 1.89 | 2.09 | 3.32 | 2.52 | 3.56 | 5.53 | 8.43 | 13.10 | 31.40 |
| **Standard Deviations** | | | | | | | | | | |
| Water sport facilities | 0.28 | 1.47 | 1.16 | 2.09 | 2.37 | 2.51 | 4.47 | 4.15 | 15.27 | 13.69 |
| Non-water sport facilities | 1.15 | 3.35 | 5.54 | 9.60 | 10.39 | 10.49 | 9.77 | 5.54 | 15.60 | 17.71 |
| Cultural interests | 2.16 | 4.15 | 6.41 | 11.56 | 8.19 | 9.50 | 8.67 | 5.45 | 16.08 | 15.22 |
| Scenic beauty | 0.51 | 0.66 | 0.85 | 1.30 | 1.42 | 2.03 | 5.79 | 3.34 | 2.72 | 17.67 |
| Pleasant attitudes | 0.65 | 2.23 | 2.75 | 2.63 | 4.87 | 2.85 | 8.41 | 3.73 | 7.57 | 14.40 |
| Rest & relaxation | 0.15 | 1.25 | 1.15 | 1.68 | 1.84 | 3.43 | 6.79 | 5.58 | 10.58 | 6.46 |
| Shopping facilities | 0.89 | 2.34 | 4.34 | 6.43 | 6.31 | 6.37 | 9.31 | 5.41 | 14.34 | 11.95 |
| Cuisine | 0.91 | 2.02 | 2.82 | 4.56 | 4.24 | 8.41 | 11.07 | 8.18 | 14.30 | 18.42 |
| Entertainment | 1.41 | 2.66 | 5.03 | 6.31 | 5.18 | 10.66 | 7.87 | 15.79 | 16.29 | 16.62 |
| Suitable accommodations | 0.34 | 1.31 | 1.46 | 3.02 | 1.58 | 3.13 | 4.12 | 5.06 | 10.81 | 15.34 |

# APPENDIX B

Table 48

Classification Cutting Scores: Hypothesis 2

| Group | Cutting Score |
|---|---|
| 1 | 10.00 or less |
| 2 | 11.00 to 14.00 |
| 3 | 15.00 |
| 4 | 16.00 to 17.00 |
| 5 | 18.00 to 20.00 |
| 6 | 21.00 |
| 7 | 22.00 to 26.00 |
| 8 | 27.00 |
| 9 | 28.00 to 34.00 |
| 10 | 35.00 or greater |

APPENDIX B

Table 49

Classification Function: Hypothesis 2

| Variable | Group 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Non-water sport facilities | 1.450 | 1.950 | 2.512 | 2.139 | 3.178 | 3.864 | 3.170 | 2.831 | 4.684 | 5.718 |
| Scenic beauty | 1.708 | 1.714 | 2.308 | 1.817 | 2.610 | 1.500 | 3.396 | 2.437 | 4.094 | 9.012 |
| Pleasant attitudes of the people | 0.694 | 1.227 | 1.234 | 1.279 | 1.795 | 2.068 | 2.003 | 2.155 | 1.750 | 3.252 |
| Shopping facilities | 0.013 | 0.516 | 0.459 | 0.743 | 0.499 | 1.660 | 0.929 | 0.354 | 0.385 | 0.681 |
| Cuisine | 0.999 | 1.186 | 0.966 | 1.485 | 2.549 | 2.398 | 3.528 | 2.594 | 2.341 | 4.441 |
| Entertainment | 0.516 | 0.954 | 1.602 | 1.360 | 1.591 | 1.356 | 1.160 | 2.370 | 2.575 | 1.980 |
| Accommodations | 1.162 | 1.505 | 1.498 | 1.829 | 1.290 | 2.385 | 2.880 | 2.977 | 2.279 | 6.054 |
| Constant | -6.436 | -10.294 | -13.865 | -14.145 | -22.032 | -30.140 | -32.353 | -30.164 | -37.903 | -94.989 |

APPENDIX B

Table 5Ø

Cluster Means and Standard Deviations: Belief Scores

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1Ø |
|---|---|---|---|---|---|---|---|---|---|---|
| n = | (46) | (54) | (43) | (34) | (25) | (9) | (17) | (7) | (1Ø) | (5) |
| **Means** | | | | | | | | | | |
| Water sport facilities | 1.Ø7 | 1.35 | 1.44 | 1.38 | 1.96 | 2.ØØ | 2.53 | 2.57 | 3.7Ø | 6.ØØ |
| Non-water sport facilities | 1.39 | 2.19 | 2.67 | 2.65 | 3.6Ø | 3.89 | 3.71 | 4.29 | 5.ØØ | 5.4Ø |
| Cultural interests | 1.93 | 2.94 | 3.77 | 3.62 | 4.12 | 4.33 | 4.18 | 5.71 | 4.8Ø | 4.4Ø |
| Scenic beauty | 1.11 | 1.17 | 1.19 | 1.21 | 1.52 | 1.44 | 2.53 | 2.ØØ | 2.1Ø | 6.6Ø |
| Pleasant attitudes | 1.13 | 1.89 | 1.6Ø | 1.85 | 2.16 | 2.33 | 2.88 | 3.57 | 2.6Ø | 5.2Ø |
| Rest & relaxation | 1.Ø2 | 1.46 | 1.26 | 1.35 | 1.6Ø | 2.33 | 2.41 | 2.43 | 2.7Ø | 4.2Ø |
| Shopping facilities | 1.Ø9 | 2.Ø2 | 2.23 | 2.5Ø | 3.12 | 3.89 | 4.35 | 4.29 | 3.9Ø | 6.ØØ |
| Cuisine | 1.26 | 1.7Ø | 2.ØØ | 2.26 | 3.Ø8 | 3.22 | 3.94 | 4.29 | 3.6Ø | 5.2Ø |
| Entertainment | 1.39 | 2.19 | 3.Ø5 | 2.91 | 3.24 | 3.56 | 3.47 | 6.14 | 5.1Ø | 4.ØØ |
| Suitable accommodations | 1.11 | 1.65 | 1.56 | 1.88 | 1.68 | 1.89 | 2.88 | 2.86 | 3.3Ø | 6.2Ø |
| **Standard Deviations** | | | | | | | | | | |
| Water sport facilities | Ø.25 | Ø.8Ø | Ø.88 | Ø.92 | 1.57 | 1.5Ø | 1.59 | 1.13 | 1.7Ø | 1.22 |
| Non-water sport facilities | Ø.68 | 1.21 | 1.34 | 1.52 | 1.66 | 1.45 | 1.61 | 2.14 | 1.49 | 2.19 |
| Cultural interests | 1.24 | 1.41 | 1.46 | 1.5Ø | 1.33 | 1.41 | 1.94 | 1.6Ø | 2.2Ø | 1.95 |
| Scenic beauty | Ø.48 | Ø.47 | Ø.5Ø | Ø.48 | Ø.92 | Ø.73 | 1.33 | Ø.82 | 1.73 | Ø.89 |
| Pleasant attitudes | Ø.4Ø | 1.28 | Ø.82 | Ø.93 | 1.18 | 1.94 | 1.73 | 1.4Ø | 1.Ø7 | 1.64 |
| Rest & relaxation | Ø.15 | Ø.95 | Ø.54 | Ø.54 | Ø.91 | 1.73 | 1.37 | 1.27 | 1.77 | 1.64 |
| Shopping facilities | Ø.28 | 1.41 | 1.25 | 1.29 | 1.45 | 1.62 | 1.17 | 1.98 | 1.97 | 1.ØØ |
| Cuisine | Ø.61 | Ø.88 | Ø.93 | 1.16 | 1.Ø8 | 1.3Ø | 1.39 | 1.8Ø | 1.78 | 1.79 |
| Entertainment | 1.ØØ | 1.21 | 1.Ø5 | 1.42 | 1.27 | 2.Ø1 | 1.12 | 1.46 | 1.85 | 1.73 |
| Suitable accommodations | 3.15 | Ø.85 | Ø.73 | 1.Ø4 | Ø.95 | Ø.78 | 1.76 | Ø.69 | 1.83 | Ø.84 |

APPENDIX B

Table 51

Classification Cutting Scores: Hypothesis 3

| Group | Cutting Score |
|---|---|
| 1 | 10.00 or less |
| 2 | 11.00 to 13.00 |
| 3 | 14.00 to 16.00 |
| 4 | 17.00 to 18.00 |
| 5 | 19.00 to 20.00 |
| 6 | 21.00 |
| 7 | 22.00 |
| 8 | 23.00 to 24.00 |
| 9 | 25.00 to 35.00 |
| 10 | 36.00 or greater |

APPENDIX B

Table 52

Classification Function: Hypothesis 3

| Variable | Group 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Water sport facilities | 2.228 | 2.520 | 2.357 | 2.679 | 3.820 | 3.763 | 4.361 | 4.204 | 9.542 | 12.786 |
| Non-water sport facilities | 0.903 | 1.298 | 1.547 | 1.722 | 2.701 | 2.670 | 2.961 | 2.609 | 1.575 | 4.495 |
| Cultural interests | 0.403 | 0.588 | 0.894 | 0.965 | 1.213 | 1.086 | 0.632 | 1.012 | 0.218 | 0.610 |
| Scenic beauty | 2.079 | 2.618 | 2.869 | 2.936 | 3.432 | 4.046 | 4.659 | 4.451 | 1.550 | 9.691 |
| Shopping facilities | 1.475 | 1.996 | 2.407 | 3.091 | 3.535 | 3.760 | 3.991 | 3.344 | 5.007 | 5.776 |
| Cuisine | 0.344 | 0.666 | 0.732 | 1.086 | 0.708 | 1.081 | 2.154 | 1.043 | 1.498 | 2.533 |
| Accommodations | 0.242 | 0.257 | 0.236 | 0.487 | 0.232 | -0.502 | -0.612 | 0.754 | 3.626 | 0.950 |
| Constant | -7.048 | -10.293 | -13.087 | -17.837 | -25.037 | -26.965 | -32.697 | -29.109 | -53.475 | -109.126 |

APPENDIX B

Table 53

Cluster Means and Standard Deviations: Evaluative Criteria Score

| Variable | Group 1 (n = 46) | 2 (54) | 3 (43) | 4 (34) | 5 (25) | 6 (9) | 7 (17) | 8 (7) | 9 (10) | 10 (5) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Means | | | | | |
| Water sport facilities | 1.02 | 1.26 | 1.12 | 1.53 | 1.60 | 2.11 | 2.18 | 2.14 | 3.90 | 5.60 |
| Non-water sport facilities | 1.22 | 1.78 | 2.26 | 2.56 | 3.96 | 3.78 | 3.76 | 3.71 | 5.20 | 6.00 |
| Cultural interests | 1.57 | 2.54 | 3.30 | 4.00 | 3.88 | 4.11 | 3.47 | 4.14 | 4.50 | 5.20 |
| Scenic beauty | 1.04 | 1.24 | 1.37 | 1.56 | 1.40 | 2.22 | 2.18 | 2.14 | 2.00 | 5.40 |
| Pleasant attitudes | 1.11 | 1.37 | 1.53 | 1.65 | 2.52 | 2.44 | 2.59 | 2.29 | 2.80 | 5.00 |
| Rest & relaxation | 1.00 | 1.19 | 1.44 | 1.41 | 1.40 | 2.22 | 2.06 | 2.57 | 3.00 | 4.80 |
| Shopping facilities | 1.33 | 2.00 | 2.51 | 3.15 | 3.40 | 4.33 | 4.53 | 3.86 | 4.20 | 5.20 |
| Cuisine | 1.07 | 1.65 | 1.91 | 2.38 | 2.68 | 2.89 | 4.00 | 3.14 | 4.70 | 5.40 |
| Entertainment | 1.37 | 1.69 | 2.40 | 2.79 | 3.04 | 3.44 | 3.24 | 4.29 | 5.60 | 5.40 |
| Suitable accommodations | 1.02 | 1.17 | 1.40 | 1.71 | 1.60 | 1.78 | 1.94 | 2.71 | 3.60 | 5.20 |
| | | | | | Standard Deviations | | | | | |
| Water sport facilities | 0.15 | 0.56 | 0.32 | 1.21 | 0.87 | 1.76 | 1.51 | 0.90 | 2.28 | 1.52 |
| Non-water sport facilities | 0.51 | 1.09 | 1.43 | 1.76 | 1.84 | 1.72 | 1.60 | 1.50 | 2.15 | 1.22 |
| Cultural interests | 0.81 | 1.50 | 1.35 | 1.72 | 1.33 | 1.54 | 1.12 | 0.90 | 2.37 | 2.05 |
| Scenic beauty | 0.21 | 0.55 | 0.58 | 0.75 | 0.58 | 1.30 | 1.01 | 0.90 | 1.56 | 2.51 |
| Pleasant attitudes | 0.38 | 0.65 | 0.88 | 0.81 | 1.57 | 1.33 | 1.46 | 1.11 | 2.10 | 2.55 |
| Rest & relaxation | 0.00 | 0.44 | 0.77 | 0.74 | 0.71 | 1.30 | 1.25 | 1.90 | 1.89 | 2.39 |
| Shopping facilities | 0.79 | 0.93 | 1.14 | 1.52 | 1.58 | 1.22 | 1.55 | 1.21 | 1.87 | 1.64 |
| Cuisine | 0.25 | 0.95 | 0.89 | 1.35 | 1.55 | 1.27 | 1.41 | 1.35 | 2.16 | 1.82 |
| Entertainment | 0.90 | 0.93 | 1.22 | 1.74 | 1.34 | 1.59 | 1.52 | 1.98 | 1.96 | 1.52 |
| Suitable accommodations | 0.15 | 0.84 | 1.03 | 0.94 | 1.08 | 1.39 | 0.83 | 1.25 | 2.17 | 2.49 |

# APPENDIX B

Table 54

Step-wise Discriminant Analysis:  Demographic Differences

| Variable | F-Statistic to Enter | Degrees of Freedom |
|---|---|---|
| Social index | 1.29 | 9,114 |
| Income | 0.80 | 9,114 |
| Age | 1.07 | 9,114 |
| Education | 0.66 | 9,114 |
| Sex | 0.40 | 9,114 |

APPENDIX B

Table 55

Direct Discriminant Analysis: Classification Function

| | Group | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Social Index | 2.3616 | 2.8111 | 1.9479 | 2.2430 | 2.4206 | 2.8971 | 2.9645 | 2.0851 | 2.5123 | 3.0909 |
| Income | 0.0001 | 0.0001 | 0.0002 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 |
| Age | 0.2651 | 0.2233 | 0.2423 | 0.2311 | 0.2443 | 0.1995 | 0.2306 | 0.2165 | 0.2907 | 0.2926 |
| Education | 1.8007 | 1.8016 | 1.8759 | 1.8988 | 1.8605 | 1.8404 | 1.7786 | 2.0176 | 1.4737 | 1.8351 |
| Sex | 3.1920 | 3.5599 | 3.6053 | 3.2805 | 3.6746 | 3.4024 | 3.2081 | 3.0162 | 3.8381 | 3.5923 |
| Constant | -27.0122 | -27.9229 | -28.3932 | -27.8117 | -29.0687 | -27.1871 | -28.7799 | -28.3263 | -27.1273 | -32.0742 |

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Table 56

Cluster Means and Standard Deviations: Hypothesis 4

| Variable | Group 1 (n = 43) | 2 (50) | 3 (42) | 4 (33) | 5 (25) | 6 (9) | 7 (17) | 8 (7) | 9 (8) | 10 (5) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Means** | | | | | | | | | | |
| Social Index | 2.09 | 2.44 | 2.10 | 2.15 | 2.08 | 2.56 | 2.65 | 2.14 | 2.25 | 2.40 |
| Income | 30697.67 | 31875.00 | 35684.52 | 31022.73 | 32800.00 | 30277.78 | 32794.12 | 29464.29 | 30625.00 | 25000.00 |
| Age | 43.05 | 32.64 | 37.29 | 34.94 | 33.72 | 32.11 | 34.71 | 33.86 | 41.75 | 47.00 |
| Education | 13.81 | 14.12 | 14.64 | 14.12 | 14.60 | 14.22 | 15.18 | 16.29 | 12.00 | 15.40 |
| Sex | 1.37 | 1.42 | 1.48 | 1.42 | 1.60 | 1.67 | 1.29 | 1.43 | 1.50 | 1.40 |
| **Standard Deviations** | | | | | | | | | | |
| Social Index | 0.97 | 0.84 | 0.91 | 0.97 | 0.95 | 0.73 | 1.17 | 1.07 | 0.89 | 1.14 |
| Income | 13139.31 | 12515.93 | 12658.15 | 12867.47 | 12381.10 | 13888.19 | 13746.66 | 15170.17 | 9977.65 | 14577.38 |
| Age | 14.68 | 13.67 | 12.08 | 14.74 | 13.41 | 14.00 | 14.19 | 13.31 | 12.33 | 8.37 |
| Education | 2.08 | 2.83 | 2.84 | 2.68 | 3.10 | 1.86 | 2.72 | 4.03 | 1.51 | 3.44 |
| Sex | 0.49 | 0.50 | 1.13 | 0.50 | 0.87 | 0.50 | 0.47 | 0.53 | 0.53 | 0.55 |

APPENDIX B

Table 57

Hypothesis Testing and Likelihood Ratio Chi-Square Values:

Hypothesis 5

| Variables | Chi-Square | Degrees of Freedom |
|---|---|---|
| Complete Independence | | |
| Cluster X Means of transportation | 30.84 | 36 |
| Cluster X Reason for visit | 69.43 | 72 |
| Cluster X Round-trip distance from respondent's home | 46.57 | 54 |
| Cluster X Length of stay in area | 48.47 | 45 |
| Cluster X Number of people respondent financially responsible for on trip | 48.09 | 45 |
| Cluster X Composition of travel party | 26.18 | 18 |
| Cluster X Frequency of visit to Traverse City | 26.67 | 27 |
| Cluster X Frequency of visits to other Michigan resort areas | 31.42 | 27 |

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Table 58

Hypothesis Testing and Likelihood Ratio Chi-Square Values: Collapsed Categories

| Variables | Chi-Square | Degrees of Freedom |
|---|---|---|
| Complete Independence | | |
| Cluster X Means of transportation | 16.27 | 18 |
| Cluster X Reason for visit | 26.26 | 27 |
| Cluster X Round-trip distance from respondent's home | 17.55 | 27 |
| Cluster X Length of stay in area | 18.39 | 18 |
| Cluster X Number of people respondent financially responsible for on trip | 21.36 | 18 |
| Cluster X Composition of travel party | 16.44 | 9 |
| Cluster X Frequency of visit to Traverse City | 26.67 | 27 |
| Cluster X Frequency of visits to other Michigan resort areas | 31.42 | 27 |

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Table 59

Group Response Percentages for Travel Behavior Questions

| Variable | | Group 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Transportation: | n = | (46) | (53) | (43) | (34) | (25) | (9) | (17) | (7) | (10) | (5) |
| Auto without camping equipment | | 71.7 | 64.2 | 72.1 | 64.7 | 60.0 | 44.4 | 64.7 | 42.9 | 50.0 | 60.0 |
| Auto with camping equipment | | 17.4 | 24.5 | 20.9 | 26.5 | 32.0 | 55.6 | 35.3 | 28.6 | 30.0 | 20.0 |
| Other | | 10.9 | 11.3 | 7.0 | 8.8 | 8.0 | 0.0 | 0.0 | 28.6 | 20.0 | 20.0 |
| Reason for visit: | n = | (45) | (52) | (43) | (34) | (25) | (9) | (17) | (7) | (10) | (5) |
| Visit friends or relatives | | 20.0 | 15.4 | 14.0 | 14.7 | 16.0 | 22.2 | 23.5 | 42.9 | 20.0 | 60.0 |
| Business | | 2.2 | 3.8 | 2.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Conference | | 0.0 | 0.0 | 0.0 | 2.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Outdoor recreation | | 42.2 | 51.9 | 48.8 | 38.2 | 40.0 | 44.4 | 35.3 | 42.9 | 70.0 | 0.0 |
| Entertainment | | 6.7 | 7.7 | 4.7 | 5.9 | 12. | 22.2 | 17.6 | 0.0 | 0.0 | 0.0 |
| Sightseeing | | 17.8 | 9.6 | 9.3 | 14.7 | 8.0 | 0.0 | 5.9 | 0.0 | 10.0 | 0.0 |
| Personal reasons | | 0.0 | 3.8 | 7.0 | 5.9 | 0.0 | 0.0 | 5.9 | 0.0 | 0.0 | 0.0 |
| Shopping | | 6.7 | 1.9 | 0.0 | 2.9 | 0.0 | 0.0 | 5.9 | 14.3 | 0.0 | 0.0 |
| Other | | 4.4 | 5.8 | 14.0 | 14.7 | 24.0 | 11.1 | 5.9 | 0.0 | 0.0 | 40.0 |
| Travel distance: | n = | (45) | (53) | (43) | (34) | (25) | (8) | (17) | (7) | (10) | (5) |
| Under 200 miles | | 11.1 | 18.9 | 25.6 | 20.6 | 16.0 | 25.0 | 11.8 | 42.9 | 10.0 | 20.0 |
| 200-399 miles | | 55.5 | 47.2 | 41.9 | 47.1 | 44.0 | 37.5 | 35.3 | 42.9 | 40.0 | 40.0 |
| 400-599 miles | | 24.4 | 24.5 | 30.2 | 20.6 | 32.0 | 25.0 | 29.4 | 14.3 | 40.0 | 20.0 |
| 600+ miles | | 8.9 | 9.4 | 2.3 | 11.8 | 8.0 | 12.5 | 23.5 | 0.0 | 10.0 | 20.0 |

APPENDIX B

Table 59 continued

| Variable | Group 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Length of visit: | | | | | | | | | | |
| n = | (45) | (53) | (43) | (34) | (25) | (9) | (17) | (7) | (10) | (5) |
| 1 night or less | 17.8 | 9.4 | 11.6 | 17.6 | 8.0 | 22.2 | 17.6 | 28.6 | 20.0 | 40.0 |
| 2 - 3 nights | 42.0 | 52.8 | 58.1 | 61.8 | 72.0 | 77.8 | 76.5 | 57.1 | 60.0 | 40.0 |
| 4 - 9 nights | 17.8 | 17.0 | 16.3 | 5.9 | 12.0 | 0.0 | 0.0 | 14.3 | 10.0 | 20.0 |
| 10 nights or more | 22.2 | 20.8 | 14.0 | 14.7 | 8.0 | 0.0 | 5.9 | 0.0 | 10.0 | 0.0 |
| Financially responsible for on trip: | | | | | | | | | | |
| n = | (45) | (53) | (43) | (34) | (25) | (9) | (17) | (7) | (10) | (5) |
| One or two persons | 68.9 | 58.5 | 58.1 | 76.5 | 68.0 | 77.8 | 64.7 | 71.4 | 40.0 | 80.0 |
| Three or four persons | 13.3 | 28.3 | 30.2 | 14.7 | 12.0 | 22.2 | 5.9 | 14.3 | 30.0 | 20.0 |
| Five or more persons | 17.8 | 13.2 | 11.6 | 8.8 | 20.0 | 0.0 | 29.4 | 14.3 | 30.0 | 0.0 |
| Group composition: | | | | | | | | | | |
| n = | (44) | (52) | (43) | (34) | (25) | (8) | (17) | (7) | (10) | (5) |
| No one under age 18 | 61.4 | 48.1 | 55.8 | 70.6 | 72.0 | 87.5 | 64.7 | 85.7 | 30.0 | 80.0 |
| Some persons under age 18/only persons under age 18 | 38.7 | 51.9 | 44.2 | 29.4 | 28.0 | 12.5 | 35.3 | 14.3 | 70.0 | 20.0 |

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Table 59 continued

| | Group | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Frequency of visit to Traverse City: | | | | | | | | | | |
| n = | (44) | (53) | (42) | (34) | (25) | (9) | (17) | (7) | (10) | (5) |
| First visit | 13.6 | 5.7 | 9.5 | 5.9 | 8.0 | 11.1 | 5.9 | 14.3 | 0.0 | 0.0 |
| Visit every other year or less | 2.3 | 7.5 | 2.4 | 5.9 | 0.0 | 11.1 | 17.6 | 28.6 | 10.0 | 0.0 |
| Visit once a year | 15.9 | 15.1 | 16.7 | 14.7 | 20.0 | 22.2 | 23.5 | 14.3 | 40.0 | 60.0 |
| Visit more often than once a year | 68.2 | 71.7 | 71.4 | 73.5 | 72.0 | 55.6 | 52.9 | 42.9 | 50.0 | 40.0 |
| Frequency of visits to other Michigan resort areas: | | | | | | | | | | |
| n = | (44) | (54) | (40) | (34) | (25) | (9) | (17) | (7) | (10) | (5) |
| Never | 13.6 | 7.4 | 2.5 | 8.8 | 4.0 | 11.1 | 5.9 | 28.6 | 30.0 | 20.0 |
| Visit every other year or less | 13.6 | 22.2 | 42.5 | 29.4 | 16.0 | 22.2 | 29.4 | 0.0 | 20.0 | 40.0 |
| Visit once a year | 13.6 | 22.2 | 15.0 | 17.6 | 32.0 | 22.2 | 23.5 | 42.9 | 10.0 | 20.0 |
| Visit more than once a year | 59.1 | 48.1 | 40.0 | 44.1 | 48.0 | 44.4 | 41.2 | 28.6 | 40.0 | 20.0 |

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Table 60

F-Statistic Level Required for Alpha = .05: Split Sample Size 72

| Step | Degrees of Freedom | Approximate F-Statistic |
|---|---|---|
| 1 | 9,072 | 2.02 |
| 2 | 18,142 | 1.71 |
| 3 | 27,211 | 1.49 |
| 4 | 36,279 | 1.45 |
| 5 | 45,346 | 1.39 |
| 6 | 54,412 | 1.35 |
| 7 | 63,477 | 1.32 |
| 8 | 72,541 | 1.30 |
| 9 | 81,604 | 1.28 |
| 10 | 90,666 | 1.27 |

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Table 61

Cluster Means and Standard Deviations: Hypothesis 6

| Variable | Group 1 (n = 27) | 2 (36) | 3 (26) | 4 (24) | 5 (17) | 6 (4) | 7 (16) | 8 (6) | 9 (4) | 10 (2) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Means** | | | | | | | | | | |
| Water sports | 3.00 | 10.14 | 21.92 | 6.25 | 3.00 | 0.00 | 1.88 | 25.00 | 7.50 | 0.00 |
| Non-water sports | 10.00 | 8.64 | 3.85 | 1.25 | 2.35 | 2.50 | 2.19 | 13.33 | 0.00 | 0.00 |
| Cultural activities | 6.67 | 2.17 | 0.77 | 1.58 | 0.00 | 0.50 | 5.31 | 0.00 | 5.00 | 0.00 |
| Sight-seeing | 8.33 | 17.22 | 35.88 | 6.04 | 12.35 | 1.25 | 5.50 | 3.33 | 7.50 | 0.00 |
| Shopping | 69.81 | 52.56 | 94.19 | 46.04 | 42.65 | 8.75 | 33.44 | 19.17 | 43.75 | 10.00 |
| Cuisine | 56.48 | 68.61 | 92.46 | 55.83 | 41.18 | 23.75 | 35.32 | 22.83 | 3.75 | 5.00 |
| Entertainment | 28.33 | 41.92 | 26.73 | 24.79 | 21.76 | 48.75 | 13.75 | 16.67 | 2.50 | 0.00 |
| Accommodations | 52.70 | 80.67 | 85.88 | 73.54 | 49.18 | 23.25 | 34.87 | 12.50 | 23.75 | 0.00 |
| Miscellaneous | 40.26 | 35.28 | 35.77 | 29.79 | 19.12 | 14.50 | 20.69 | 9.17 | 17.50 | 10.00 |
| Total Expenditures | 275.59 | 317.19 | 392.85 | 245.12 | 191.59 | 123.25 | 152.95 | 122.00 | 111.25 | 25.00 |
| **Standard Deviations** | | | | | | | | | | |
| Water sports | 9.84 | 24.60 | 98.06 | 13.85 | 5.59 | 0.00 | 5.44 | 41.83 | 15.00 | 0.00 |
| Non-water sports | 19.90 | 26.44 | 10.23 | 3.38 | 8.50 | 5.00 | 8.75 | 21.60 | 0.00 | 0.00 |
| Cultural activities | 17.43 | 4.19 | 2.72 | 4.54 | 0.00 | 1.00 | 18.75 | 0.00 | 10.00 | 0.00 |
| Sight-seeing | 17.81 | 39.90 | 98.23 | 7.80 | 17.06 | 2.50 | 11.40 | 8.16 | 15.00 | 0.00 |
| Shopping | 68.16 | 72.24 | 196.21 | 83.63 | 61.29 | 6.29 | 60.24 | 18.55 | 42.70 | 14.14 |
| Cuisine | 56.19 | 85.93 | 70.87 | 63.84 | 51.86 | 20.56 | 43.11 | 38.73 | 7.50 | 7.07 |
| Entertainment | 44.16 | 88.87 | 38.47 | 33.80 | 35.75 | 69.81 | 19.62 | 40.82 | 5.00 | 0.00 |
| Accommodations | 64.46 | 170.07 | 97.78 | 131.72 | 79.53 | 5.38 | 50.23 | 14.05 | 21.36 | 0.00 |
| Miscellaneous | 48.32 | 43.64 | 32.85 | 43.87 | 22.93 | 6.40 | 25.62 | 12.01 | 23.63 | 14.14 |

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Table 62

Expenditure Ratios

| Variable | Group 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| n = | (27) | (36) | (26) | (24) | (17) | (4) | (16) | (6) | (4) | (2) |
| Water sports | 0.011 | 0.032 | 0.055 | 0.025 | 0.016 | 0.000 | 0.012 | 0.205 | 0.067 | 0.000 |
| Non-water sports | 0.036 | 0.027 | 0.010 | 0.005 | 0.012 | 0.020 | 0.014 | 0.109 | 0.000 | 0.000 |
| Cultural activities | 0.024 | 0.007 | 0.002 | 0.006 | 0.000 | 0.004 | 0.035 | 0.000 | 0.045 | 0.000 |
| Sight-seeing | 0.030 | 0.054 | 0.090 | 0.025 | 0.064 | 0.010 | 0.036 | 0.027 | 0.067 | 0.000 |
| Shopping | 0.253 | 0.166 | 0.237 | 0.188 | 0.223 | 0.071 | 0.219 | 0.157 | 0.393 | 0.400 |
| Cuisine | 0.205 | 0.216 | 0.233 | 0.228 | 0.215 | 0.193 | 0.231 | 0.187 | 0.034 | 0.200 |
| Entertainment | 0.103 | 0.132 | 0.067 | 0.101 | 0.114 | 0.396 | 0.090 | 0.137 | 0.022 | 0.000 |
| Accommodations | 0.191 | 0.254 | 0.216 | 0.300 | 0.257 | 0.189 | 0.228 | 0.102 | 0.213 | 0.000 |
| Miscellaneous | 0.146 | 0.111 | 0.090 | 0.122 | 0.100 | 0.118 | 0.135 | 0.075 | 0.157 | 0.400 |

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Table 63

Classification Cutting Scores: Hypothesis 6

| Group | Cutting Score |
|---|---|
| 10 | 5.42 or less |
| 9 | 5.43 to 19.56 |
| 8 | 19.57 to 42.12 |
| 7 | 42.13 to 67.82 |
| 5 | 67.83 to 70.26 |
| 6 | 70.27 to 70.67 |
| 4 | 70.68 to 95.82 |
| 1 | 95.83 to 99.13 |
| 2 | 99.14 to 115.55 |
| 3 | 115.56 or greater |

Table 64

Classification Function: Hypothesis 6

| Group | Variable | | |
|---|---|---|---|
| | Cuisine | Entertainment | Constant |
| 1 | 0.027 | 0.023 | - 3.723 |
| 2 | 0.024 | 0.017 | - 3.182 |
| 3 | 0.043 | 0.007 | - 4.536 |
| 4 | 0.022 | 0.020 | - 3.562 |
| 5 | 0.012 | 0.009 | - 3.248 |
| 6 | - 0.016 | 0.117 | - 12.677 |
| 7 | 0.011 | 0.003 | - 3.490 |
| 8 | 0.013 | 0.016 | - 4.625 |
| 9 | 0.003 | 0.003 | - 3.931 |
| 10 | 0.000 | 0.000 | - 4.605 |

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Table 65

Classification Matrix for Holdout Sample using All Variables: Hypothesis 6

| Group | Percent Correct | Predicted 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.6 | 1 | 10 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 |
| 2 | 41.2 | 0 | 7 | 4 | 0 | 0 | 2 | 0 | 4 | 0 | 0 |
| 3 | 35.7 | 0 | 4 | 5 | 3 | 1 | 0 | 0 | 1 | 0 | 0 |
| 4 | 0.0 | 0 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0.0 | 0 | 4 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 6 | 0.0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0.0 | 1 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 1 | 0 |
| 8 | 50.0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 9 | 0.0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0.0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | *n* = | 2 | 41 | 15 | 4 | 5 | 4 | 1 | 6 | 1 | 1 |

Classification accuracy = 17.5%

Table 66

Step-wise Discriminant Analysis: Impact of Economic Conditions on Travel Behavior

| Variable | F-Statistic to Enter | Degrees of Freedom |
|---|---|---|
| Transportation cost | 0.67 | 9,122 |
| Food and lodging costs | 0.88 | 9,122 |

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Table 67

Classification Matrix for Holdout Sample using All Variables: Hypothesis 7

| Group | Percent Correct | Predicted 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 16.7 | 2 | 12 | 8 | 1 | Ø | Ø | Ø | Ø | Ø | Ø |
| 2 | 52.2 | 2 | 12 | 7 | 1 | 1 | Ø | Ø | Ø | Ø | Ø |
| 3 | 4.5 | 3 | 16 | 1 | 1 | Ø | Ø | Ø | 1 | Ø | Ø |
| 4 | Ø.Ø | 2 | 7 | 3 | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| 5 | Ø.Ø | 3 | 8 | 2 | Ø | Ø | Ø | Ø | 1 | Ø | Ø |
| 6 | Ø.Ø | Ø | 3 | 3 | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| 7 | Ø.Ø | 1 | 2 | 2 | 1 | 1 | Ø | Ø | Ø | Ø | Ø |
| 8 | Ø.Ø | 1 | 1 | 1 | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| 9 | Ø.Ø | Ø | 2 | 2 | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| 1Ø | Ø.Ø | Ø | 2 | 1 | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
|  | n = | 14 | 65 | 3Ø | 4 | 2 | Ø | Ø | 2 | Ø | Ø |

Classification accuracy = 12.8%

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Table 68

Means and Standard Deviations: Economic Influence on Travel Decisions

| | | Variable | | | |
|---|---|---|---|---|---|
| | | Increases in Transportation Costs | | Increases in Food & Accommodation Costs | |
| Group | n | Mean | Standard Deviation | Mean | Standard Deviation |
| 1 | 45 | 3.91 | 2.37 | 3.91 | 2.34 |
| 2 | 54 | 3.31 | 2.11 | 3.78 | 2.14 |
| 3 | 42 | 3.26 | 2.10 | 3.93 | 2.10 |
| 4 | 34 | 3.91 | 2.23 | 4.35 | 2.32 |
| 5 | 25 | 4.20 | 1.89 | 4.16 | 1.80 |
| 6 | 9 | 4.33 | 2.06 | 4.22 | 2.17 |
| 7 | 17 | 4.41 | 1.80 | 4.24 | 2.25 |
| 8 | 7 | 3.71 | 2.63 | 4.71 | 1.98 |
| 9 | 10 | 2.90 | 2.51 | 2.70 | 2.58 |
| 10 | 5 | 3.00 | 1.58 | 3.80 | 1.79 |

Table 69

Classification Functions: Hypothesis 8

| | Function | |
|---|---|---|
| Variable | 1 | 2 |
| Shopping facilities | .874 | 1.140 |
| Constant | - 2.137 | - 3.439 |

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Table 70

Classification Cutting Scores: Hypothesis 8

| Group | Cutting Score |
|---|---|
| 1 | 2.38 or less |
| 2 | 2.39 or greater |

Table 71

Group Means and Standard Deviations for Belief Score: Hypothesis 8

| | Group | | | |
|---|---|---|---|---|
| | 1 | | 2 | |
| Variable | Mean | Standard Deviation | Mean | Standard Deviation |
| Water sport facilities | 1.61 | 1.28 | 1.79 | 1.34 |
| Non-water sport facilities | 2.60 | 1.64 | 2.85 | 1.71 |
| Cultural interests | 3.39 | 1.79 | 3.52 | 1.64 |
| Scenic beauty | 1.46 | 1.10 | 1.52 | 1.15 |
| Pleasant attitudes of the people | 1.87 | 1.25 | 2.10 | 1.38 |
| Rest & relaxation | 1.59 | 1.08 | 1.51 | 1.01 |
| Shopping facilities | 2.35 | 1.56 | 2.82 | 1.80 |
| Cuisine | 2.27 | 1.39 | 2.46 | 1.47 |
| Entertainment | 2.76 | 1.67 | 2.89 | 1.56 |
| Suitable accommodations | 1.81 | 1.19 | 1.87 | 1.29 |

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Table 72

Step-wise Discriminant Analysis: Demographic Differences as a Function of Travel Distance

| Variable | F-Statistic to Enter | Degrees of Freedom |
|---|---|---|
| Social index | 3.08 | 1,152 |
| Income | 1.16 | 1,152 |
| Age | 1.21 | 1,152 |
| Sex | 0.19 | 1,152 |
| Education | 1.35 | 1,152 |

Table 73

Means and Standard Deviations: Demographic Differences as a Function of Travel Distance

| | Group | | | |
|---|---|---|---|---|
| | 1 | | 2 | |
| Variable | Mean | Standard Deviation | Mean | Standard Deviation |
| Social Index | 2.20 | 0.95 | 2.38 | 0.97 |
| Income | 31,269.95 | 13,058.69 | 33,353.37 | 12,829.71 |
| Age | 38.40 | 14.29 | 35.02 | 13.18 |
| Education | 14.37 | 2.77 | 14.32 | 2.91 |