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THE REGIONAL MARKET POTENTIAL FOR DIRECT AGRICULTURAL PRODUCT SALES TO TRAVELLERS IN MICHIGAN

By

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ABSTRACT

THE REGIONAL MARKET POTENTIAL FOR DIRECT AGRICULTURAL PRODUCT SALES TO TRAVELLERS IN MICHIGAN

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A recent study on the relationships between agriculture and tourism in Michigan indicated that some potential for direct sales of agricultural products to travellers existed. However, the potential magnitude is unknown. The development of state and regional market potentials for product sales was the objective of this study. Travellers were interviewed about their expressed interest in purchasing specific agricultural products in the future. This study's three major findings were: 1) statewide market potentials were significantly larger for specific crops; 2) there were significant variations in market potentials across regions; and there were 3) significant differences between the potential and actual product sales. The implications from the results are: 1) market potentials may not be as large as they appear; 2) certain products show a greater potential for being the basis of an ag/tourism enterprise than others; and 3) maximum growth potential can only be achieved

through cooperation at both state and local level by agriculture and tourism organizations.

To my long suffering wife Jillian, and Nathanael our son.

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TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

There has been an increasing interest recently in Michigan to study the relationships that exist between agriculture and tourism. Michigan's interest in agriculture as a tourist attraction was generated, in part, by the need to diversify the state's economy away from its dependence on heavy manufacturing. The downturn of the auto industry in the late 70's, and the ensuing period of economic instability prompted the state to consider a new promotional focus for Michigan's economy. Part of the promotional effort focused on the state's second and third most important industries, namely agriculture and tourism. At that time, the two industries accounted for just over 10 percent of the state's economy, and were seen as having good potentials for diversifying a part of the state's economy (Propst et al., 1984).

Initially agriculture and tourism were promoted as separate and unrelated entities, only later was "Agricultural Tourism" recognized as a small component that could tie the two together (Propst et. al., 1984). These enterprises are formed by the combination of agricultural

products and sales with related recreational and educational experiences. Such enterprises include pick-your-own fruit operations, cider mills, agricultural product festivals, farm markets and a host of other related activities. These enterprises in turn have developed into an important source of additional income for some Michigan farmers and add diversity to the tourism sector. Some growth has also resulted in some sectors of the tourism industry (e.g., tour bus companies) as a result of these ag/tourism opportunities. However, ag/tourism enterprises are not necessarily a new phenomenon to Michigan or the nation. For example farm vacations, which form a part of ag/tourism enterprise mix, have enjoyed a long history in the East (Pizam and Pokela, 1980). Similar operations have existed since the 1920's in the form of the western "dude" ranches.

Possibly the greatest strength of ag/tourism is that it combines the unique agricultural, natural, and human resources of any particular state into a unique marketable commodity. The marketability of this commodity can be seen in the effective marketing of California's Napa Valley as a tourist destination by the wine industry (Woodside, 1983). Additionally, the sales of agricultural products to travellers and tourists at the Lancaster County Farmers' market in Pennsylvania by the local Amish community is a good example of the human dimension component. In Lancaster

the agricultural lifestyle of the predominantly Amish community acts as the attraction for tourists. This in turn provides a ready market for the local sale of agricultural products (Hurd, 1987).

In 1982, Michigan started a major promotional campaign emphasizing the state's tourism potential. The "Say Yes To Michigan" slogan exemplifies the recognition and state-sponsored promotion of Michigan's tourism potential. Further evidence of the state's commitment to the promotion of tourism is the Travel Bureau's, $4.3 million advertising budget for the fiscal year 1985 - 1986, placing it sixth in the nation (Spotts, 1986). The "Say Yes To Michigan" promotion was followed by promotions of Michigan's agricultural products, state fairs, and agriculturally related tourist attractions. Promotional efforts by both state agencies and commodity groups has resulted in a greater awareness of Michigan's unique agricultural and tourism resources. Increased media and educational exposure about ag/tourism has resulted in more interest in the concept being shown by some producers and tourist business operators (Fruit Growers News, 1986).

Agricultural-based tourism can have many benefits for successful enterprise operators. Possibly the greatest impact of ag/tourism is felt at the farm level, where many

farmers are suffering from the farm debt crisis. Ag/tourism can benefit the small farm by: 1) providing additional revenue through sales of farm produce to the travelling public (direct marketing); 2) increasing farmers' cash flow, during months when revenue from traditional, production agriculture is low: 3) increasing income to the farm unit through the sale of a recreational or educational experience in combination with product purchases; and 4) providing advantages that result from diversifying farm output instead of reliance on mono-cropping (e.g., planting strawberries for u-pick along with corn).

The benefits to Michigan from ag/tourism promotion in Michigan are: (1) the economic strengthening of the farm unit through the increased product sales; and (2) increased opportunities for tourists to buy authentic products and experience and experience a component of Michigan culture; (3) the positive promotion and image of the state's agriculture. The latter point is exemplified by a recent logo on the Michigan Department of Agriculture, Country Carousel "Michigan Agriculture .. Is Forever" (Michigan Dept. of Agriculture, 1986d) This form of promotion aids the state by promoting the evidence of the strength of the agricultural industry as well as creating a general awareness of the positive role that agriculture plays in Michigan's economy.

Tourism and recreation enterprises can accrue benefits from working with agriculturally based tourism. One of the most important benefits is offering visitors another product or experience as an inducement to visit the area. This product (e.g., sweet cherries) or experience (e.g., pick-your-own sweet cherries and picnic on the farm) is localized to the region or community and can serve as a further drawing card to travellers or tourists. New expenditures will be generated to the community or region by those travellers who have been encouraged to participate in an ag/tourism experience. A good example of this is the estimated economic impact of visitors (product or experience seekers) at the Cherry Festival in Grand Traverse County, Michigan. In a study conducted for the Cherry Festival Association in 1985 it was estimated that the overall attendance for the 5-day festival was 1/2 million people, with an estimated median daily expenditure of $50 per tourist (Data Research Center, 1985). These figures indicate some of the potential for agriculturally based tourism to bring new dollars into a community.

Therefore, it is apparent that a relationship does exists between agriculture and tourism in Michigan. There is ample evidence pointing to the fact that promotion of this relationship can have economic advantages for many agricultural and tourism sectors. However, to exploit this

relationship to its fullest potential, the unique characteristics of agriculture and tourism in Michigan need to be identified and analyzed. The remainder of the chapter will be taken up with a description of the roles that tourism and agriculture play in Michigan's economy. Thereafter, the interface of agriculture and tourism as it relates to the field of direct marketing will be covered. The chapter will conclude with a discussion of definitions that are common to the study and the organization of the remainder of the study.

The Role of Tourism in Michigan

In 1985, Michigan's tourist industry resulted in $12.6 billion in total economic impact (both direct and indirect expenditures), as well as 281,000 jobs (both full and part time), yielding an estimated $1.15 billion in payroll income (Michigan Dept. of Commerce, 1986; Spotts ,1986). In 1982, tourists accounted for approximately one half of all non-commuter travel in Michigan. Travel, in this definition, includes vacation/pleasure (tourism component), convention, and business/commercial trips. Another way to measure the travel market in Michigan is by the means of person trips. In 1982, tourists accounted for 22 million person-trips (1 person making two trips = 2 person trips) (Propst et al,

1984). The 1982 figures were considered record breaking; however, in 1986, highway traffic volume increased by 7.9% and travel by air into Michigan was up by 11.5% over the 1985 levels (Holecek et al., 1987).

Michigan is well-established as a travel destination for tourists and travellers with an overall rank of fifth in the U.S. (U.S. Travel Data Center, 1984). Michigan enjoys a strong locational advantage as a tourist destination as the state is located within one day's travel by car to 46 million people. This comparative advantage has resulted in targeting the state's tourism promotion programs at the surrounding states of Illinois, Indiana and Ohio (Cooper & Ploor, 1984). Michigan also has an impressive natural resource base, which acts as a major attraction for the millions of tourists visiting the state each year. This natural resource base includes over 3000 miles of coastline with 11,000 inland lakes, 3 national parks and an extensive system of state and county parks. The tourism and recreation sector in Michigan is well supported by an extensive state and local highway system. Michigan's favorable location, and impressive natural resources are good indicators of the state's potential to remain a major tourist destination.

The future outlook for tourism in Michigan is good. A three percent increase in travel volume was predicted for

1987 along with a ten percent increase in travel expenditures (Holecek et al., 1987). These travel expenditures are of great importance to retailers and producers in the communities where they are spent. The ag/tourism industry is in a relatively favorable position to capture some of these travel expenditure through the sale of agricultural products and recreational experiences. Travel expenditures can be classified into four categories, lodging, gas, food, and entertainment/ recreation. Since forty seven percent of the travel dollar is spent on food and entertainment/recreation, ag/tourism businesses may then be in a position to capture some of these expenditures.

New monies brought into a region by tourist or traveller expenditures have a positive economic effect on the local communities where they are spent. The impact of this "new" money is mainly realized in the provision of employment opportunities in service industries linked to the tourist sector. A positive economic effect will be felt in local communities if tourists and travelers can be enticed to possibly spend more person-nights in the community. Increasing length of stay might be a direct result of diverse ag/tourism attractions in the community. These, increased employment opportunities offered by service industries linked to tourist businesses, may be more keenly felt in communities with economies linked to depressed

natural resource bases such as timber. New employment generated by travel expenditures in such communities may eventually result in some economic revitalization within the community.

Michigan's Agricultural Industry

Michigan has an extremely diversified agricultural industry, ranking second only to California in the variety of crops grown and agricultural products produced. Michigan leads the nation in the production of 5 crops (dry beans, blueberries, tart red cherries, pickling cucumbers and soft white winter wheat) and ranks fifth or higher in the production of 19 others (Michigan Dept. of Agriculture, 1986b). Some of these other leading crops include apples, asparagus, and spearmint. Michigan also has a well developed floriculture and bedding plant industry, ranking 5th in the nation (USDA, 1982). Completing Michigan's cornucopia of agricultural production are 12 licensed wineries. This partial list serves as an indicator of the diversity and uniqueness of Michigan's agriculture. This diversity should be sufficient to meet the wants and needs of most travellers and tourists with respect to products and experiences.

Agriculture is also an important supplier of jobs in

Michigan, being responsible for about one out of every 8 jobs in the state or 500,000 jobs (Johnson, 1983). Michigan farmers received about $3.088 Billion for their crops and livestock in 1982. When the value of product processing, purchasing and storage are included, the agricultural industry is worth $15.5 billion to Michigan's economy (Propst et al., 1984).

Michigan is in a unique position with respect to ag/tourism in the nation with its unique mix of production agriculture, excellent natural resource base and growing tourism industry. Based on these factors alone, the outlook for ag/tourism enterprise formation in Michigan is promising. However, this growth potential cannot be approached unless there is effective cooperation between the agricultural and tourism sectors within the state. This cooperation needs to be recognized and articulated by both the agriculture and tourism sectors. Cooperation may take the form of joint advertising and cooperative marketing of each other's recreational opportunities or experiences. A case in point is the cooperative marketing of a golfing excursions at The Grand Traverse Resort with tours of the local cherry orchards.

The possibilities and combinations of these cooperative promotion and marketing ventures is limited only by the

imaginations of the operators in the respective agricultural and tourism industries. Resistance to cooperation may disappear as agricultural and tourism operators see the benefits of cooperation by innovators in the ag/tourism field.

The Agriculture and Tourism Interface

When considering the ag/ tourism industry in Michigan, the question needs to be asked; "How can the producers and the consumers come together?" One of the most obvious means to bringing producers and consumers together is provided by direct marketing, where agricultural producers have the opportunity to sell their produce directly to the consumers. Historically fruit and vegetable marketing was decentralized, and carried out at the local level through the efforts of individuals, cooperatives and commodity groups. The post WW II market system has changed into a highly centralized one dominated by middle buyers and chain stores, who control large volumes of produce. This market centralization has often worked to the detriment of the local small farmers, by excluding those producers with limited resources (Adrian et al., 1981).

The exclusion of smaller producers from the main market structure has resulted in economic hardship for some farmers. To alleviate the hardship to small farmers and to encourage alternative market opportunities for them, Congress passed P.L. 94-463 "The Farmer-To-Consumer Direct Marketing Act of 1976" (P.L.94-463, 1976). The stated purpose of the law is ".... to promote, through appropriate means and on an economically sustainable basis, the development and expansion of direct marketing of agricultural products from farmers to consumers." The act provided assistance to the states through federal appropriations, for the creation of direct marketing programs and the provision of facilitative help to farmers and producers.

The Act (P.L.94-463, 1976) combined with increased consumer advocacy on issues of organic and natural food products led to a resurgence of the farmers' market as well as other direct product marketing enterprises. The farmers' markets became popular with consumers who found substantial reductions in produce costs coupled with better quality produce and a more enjoyable shopping experience (Sommers, 1980). Direct marketing has provided a niche for both small producers to get into the market place and consumers with alternative purchasing options.

Traditionally, direct marketing opportunities have taken three forms; (1) Farm Markets, where consumers buy directly from farmers on the farm, (2) Farmers' Markets where farmers come together in a central location to sell their products to local consumers, and (3) "U-Pick" or "Pick-Your-Own" operations where consumers participate in the experience of harvesting the crops that they will consume. A fourth category of direct marketing enterprises includes festivals with an agricultural or product theme. An examples is the Annual Tulip Festival in Holland, Michigan which attracts an estimated 1/4 million visitors over the three day festival period. Processing enterprises, such as wineries and apple cider mills, that also sell their products directly to consumers and/or offer tours comprise a fifth category of ag/tourism business. All of these various direct marketing enterprises have the potential to capture travellers' dollars either on or off the farm. However, to achieve this end, producers will need to have a high quality product on hand, as well as the ability and willingness to apply some general marketing principals.

Direct marketing practices likely have a positive economic impact on both local and county economies. Propst et al., (1984) found that sixty four percent of farm markets and u-pick businesses in their survey made their expenditures within the county, while thiry five percent

made their expenditures within the state. As a result ninety nine percent of the farm market and u-pick operations that responded to the survey spent their earnings within the state.

Producers and communities are not the only ones to benefit from direct marketing of agricultural products. Travellers and consumers also benefit as they are able to purchase fresh, superior quality products, at reasonable prices while engaging in educational and/or recreational experiences. People travelling for pleasure may be inclined to participate in educational experiences as these may be an integral part of the travel experience. Farmers, in turn, may then have the opportunity to educate and introduce, farm life style, as well as rural concerns and values to an increasingly urban and non-farm population.

Purposes

There are currently a small number of successful ag/tourism enterprises in the state. These enterprises combine their agricultural products and recreational, educational experiences into a saleable mix. Those few operations who are actively engaged in retailing to travelers and tourists have captured a large share of the

available market Propst et al. (1984) estimated that only a few ag/tourism businesses, who are actively marketing to travellers have captured up to 90 percent of the Michigan travel market segment.

The major purpose of this study then will be to determine the size of the potential market for the direct sale of agricultural products to travellers by established, and newly developing ag/tourism enterprises in Michigan. A secondary purpose of the study will be to consider how the information of the market potentials can be used by communities and enterprises to further develop ag/tourism opportunities in their areas.

Definitions

It is necessary to define certain terms that have specific meaning in this study. These definitions are taken Propst et al., (1984):

1. Ag/Tourism Enterprise - those businesses and activities (e.g., festivals) that engage partly or wholly in the direct sales of agricultural products to tourists, travellers and other non-local customer groups. A fun, recreational,

learning experience, is an integral part of the agricultural product "package". Includes but is not necessarily limited to agricultural festivals, wineries, farm markets, farmers' markets, fish retailers, and Christmas tree farms and u-pick operations.

2. Agricultural or farm products - Fresh fruits and vegetables, trees, bedding plants, fresh or smoked fish, livestock and livestock products, and processed products like wine, maple syrup, apple cider, juices, jams, honey, cheese and preserves. Agricultural products also include related experiences, activities or services, such as tours by bus, wagon, buggy, sleigh, or foot; demonstrations; contests; vacation farms; rural bed and breakfasts; fishing and hunting; firewood cutting and horse shows.

3. Direct Marketing and Sales- any direct transaction between farmer and consumers; the retail portion of the farm enterprise. In Michigan, the major direct marketing outlets are farm or roadside markets, u-pick operations, farmers' markets, and wineries.

4. Traveller- travel can be for any purpose (business, visiting family and friends, conventions, etc.) except commuting to and from work; means the same as "nonlocal" in this study.

5. Tourist- a term to which a great deal of confusion is attached; usually means someone traveling for pleasure and who either stays away from home overnight or is on a day trip of 60 miles or more one-way from his/her origin.

6. Nonlocal- Anyone whose permanent residence is located one hour or more in driving time from the ag/tourism enterprise; means the same as "traveler"; used to distinguish between "local" and "nonlocal" customers. Does not have to be a person from out-of-state.

7. Agricultural Festivals or Events- these are activities that revolve around or are related to a particular crop, agricultural product, fishery or forest product. The National Cherry Festival held in Traverse City, Michigan is an example of this type of event.

8. Farm or Roadside Markets- these are businesses where individuals sell fresh agricultural products, usually but not always from their farm.

9. Farmers' Market- these are central places where several to many farmers gather during the growing season, to sell their produce. Farmers' markets may be privately operated or sponsored by a public entity (e.g., a municipality).

10. U-Pick Operations- these are farms, orchards and fields where people come to harvest their own fruits and vegetables. Often they are a part of a larger wholesale farm, but size can be variable.

11. Agricultural Processors- businesses that convert the raw agricultural products into another form for retail or wholesale trade. These include wineries, cheese producers, maple syrup "farms", and cider mills, and often engage in direct sales to visitors and/or offer a guided tour of their establishment.

CHAPTER II

Literature Review

Both agricultural marketing and tourism have extensive and varied literatures, yet few studies have considered the relationships that exist between agricultural marketing and tourism. The purpose of this literature review is to consider the current research relating to the linkages between agriculture and tourism, as well as research in the areas that directly relate to their impacts on society.

Four areas of current research will be reviewed in an attempt to shed some light on the nature of the relationships. Relevant studies on agriculture and tourism will be reviewed with an emphasis on current research on the areas of: (1) travel and tourism, (2) direct marketing, and (3) community development and (4) market forecasting.

The section on travel and tourism research will help identify the nature of the travelling market segment, to include their characteristics and motivations. The direct marketing research section will focus on the linkages between producers and travellers. The market forecasting research will provide an overview of the basic models used

in forecasting the sales volume of products. Finally, research on the impact that both agriculture and tourism have on the community in which they operate, will be reviewed in the community development research section.

The identification of the problem and the problem statement will follow the literature review. The formulation of the study's major objectives will follow the identification of the problem and the problem statement. The chapter will conclude with a short discussion on the assumptions and problems inherent in the study of the demand for the sale of agricultural products to travellers in Michigan.

Travel and Tourism Research

The field of travel, tourism and recreation studies is extensive, with numerous studies carried out worldwide covering a wide variety of topics. Few studies, however, have discussed the relationship between agriculture and tourism (Balisle, 1983; Hermans,1981) and never with the consideration of a possible positive relationship between them.

Recent studies of travellers and tourists to Michigan

(Fridgen et al., 1983; McDonough et al., 1984) have concentrated on three broad topics: the demographics of Michigan travellers, their images of Michigan's tourist places, and the information sources or networks used by these travelers. These studies are of interest as they help identify the potential market of travellers for the direct purchases of agricultural products. The potential market is itself a subset of all travellers in Michigan.

Market segmentation is a key issue in determining the available market and can be simply defined as the specific characteristics of the customers you wish to attract or serve. A good knowledge of Michigan travelers demographic characteristics will be of considerable aid to those wishing to segment their market. Similarly, the images that tourist have of Michigan are important for those planning an enterprise whose success may be determined by the travellers overall image of the location. An example is that of the Thumb Region of southeast Michigan, which is not generally identified as a favorable tourist region (Fridgen et al., 1984). Ag/Tourism enterprises attempting to start in a region such as this may face problems relating to their perceived unfavorable location.

Finally, it is important to know how travellers in Michigan get the information upon which they base their

travel decisions. This has a direct bearing on the means that an enterprise will use to get the information of their market offers to their potential customers. If the method of getting information about agricultural products to the travelling public is improperly directed, valuable resources may be wasted.

A number of demographic studies of Michigan travelers have been carried out over the past few years. These studies have concentrated on identifying the characteristics of the various travelling segments so that their needs can be better served by state agencies and the tourism sector. One of the earliest studies was carried out by the Michigan Department of Transportation (MDOT). Automobile travellers were interviewed at the 11 Travel Information Centers around the state in 1980. This study found that over three-fourths of the travelers surveyed planned to participate in some form of recreational activity while travelling (Michigan Dept. of Transportation, 1980).

A recent study by Fridgen et al., (1983) interviewed travellers at 5 Travel Information Centers in Michigan. The purpose of the study was to determine travellers perceptions and their images of different parts of Michigan as travel destinations. The demographics of this study showed that the travelers interviewed in the sample were above the regional

and national average for income and education. The investigators found that travellers were able to identify 10 tourism regions in the state, and were further able to identify three regions as favorable destination sites. These findings have some effect on the tourist flow and attraction ability of a specific community when compared to an adjacent region or community. The authors maintained that communities not specifically identified as tourism regions or destinations could still create unique images to attract tourists.

Deale (1983) further studied Michigan's automobile travellers and their perceptions of the state's tourism regions. Deale's work concentrated on the travelers images of specific regions, rather than that of the entire state in Fridgen et al's., (1983) study. Deale's respondents associated the western half of the lower peninsula with recreation and tourism but not the eastern half. This has great significance for the establishment of ag/tourism enterprises as the western half of the state comprises some of the major deciduous fruit growing regions of the state and an area with potential for the growth of ag/tourism enterprises.

The other key component in studying travelers in Michigan, is the question of "how do travelers get their

information." This is important, as all travelers rely on information gathered before or after the trip to guide them. This information is used to determine their trip length, trip purpose and quite often the destination. Just how travelers receive their information has been the subject of a number of studies in Michigan.

Research on travellers information systems has been carried out by McDonough (1982) and McDonough and Dyer (1984). These two studies support the findings of the 1980 M.D.O.T. study. The study found that 45 percent of visitors gained information about their trip from friends and relatives; and that 58 percent of the travellers were planning to holiday or travel in Michigan again within 2 years. The importance of return visitation for established ag/tourism businesses cannot be underestimated. Return visitors can be a loyal clientele for established operators as well as providing information to other travellers on the agricultural business. Word of mouth is the cheapest, most efficient, and effective form of advertising. McDonough and Dyer (1984) found that 83 percent of tourists surveyed became aware of a particular destination site by informal sources, such as previous visitors, family or friends. There was strong evidence that, repeat visitors in the travelling party where most often the information sources. To capitalize on the important return visitors it is critical

that travelling customers have a high quality experience to take home and share with others.

Direct Farm Marketing Research

The majority of studies that focus on direct farm marketing are published as Cooperative Extension bulletins or are the work of University Agricultural Experiment Stations (Capstick, 1982; Varner et al., 1982; Brooker, 1982; Stuhmiller and How, 1976). The major focus of these publications is usually to sensitize producers and small farmers to the existence of direct marketing mechanisms, their economic advantage, and the general business characteristics of successful operations. There is little emphasis in these studies about the need to carry out market potential studies, or even attempts to segment purchasers into local and non-local market segments.

The measurement of a potential sales area was the purpose of a study of the Chattanooga, Tennessee Market Area conducted by Adrian et al., (1981). This study concentrated on the barriers facing small producers when trying to enter a centralized market system. One of the findings of the study was that although the potential for sales to

wholesalers and retailers exists in the market area, farmers seemed generally to be satisfied with selling through farmers markets and roadside stands. The authors felt that this may have been due in part to the small size of the farming operations, combined with the farmers apparent indifference to price changes.

The distances traveled by customers to purchase agricultural products from farmers or roadside stands varies. This distance may depend on a number of diverse factors such as: product uniqueness or substitutability, product availability, previous experiences etc. Knowing the distance that customers are willing to travel to purchase products or experiences is important in developing a marketing plan. This provides a means of estimating the population of the trade area and the potential sales volume.

The question of the distance traveled to the point of purchase has been an integral part of a number of studies (Pelsue, 1980; Watkins, 1978). Pelsue's study of roadside stands in Vermont, found that the average distance traveled to a vegetable stand was only 8 miles, while 25 percent of the respondents traveled over 20 miles to shop at fruit stands. In comparison, Watkin's study of Ohio market customers found that only 6.8 percent of respondents traveled more than 20 miles one way to shop at roadside

stands or farm markets. No valid comparisons can be drawn between the distances traveled to the point of purchase in Vermont or Ohio. However, certain products or experiences may prove to be sufficient attractions in themselves as to warrant the distance traveled and travel time costs incurred with their purchase. For example, a 70 mile drive one-way to u-pick sweet cherries in Traverse City, may prove worth the time and expense if combined with a golf game at the Grand Traverse Resort or a tour of local wineries.

None of these studies sought to actively identify the travelling segment of the market. This oversight may have been be due, in part, to the studies being carried out near densely populated areas. This was the case in the Ohio study where the markets were mainly located near the Columbus metropolitan region. This oversight of the travelling public as a specific market segment, may also be the result of what has been termed "marketing myopia" (Kotler, 1983). Direct marketing enterprises have relied on local customers to purchase their products and have been content to serve only this market. Other reasons for this failure to capture the available travelling market may relate to factors affecting their operation such as location, advertising, or the lack of a uniquely identifiable product.

A review of the literature has identified only two

studies that examine the direct market operations and the travelling customer. The first was a pilot farm market project on the New York Thruway, carried out by the Marketing Division of the New York State Dept. of Agriculture (Stuhmiller et al., 1976). The New York Thruway Authority gave the Dept. of Agriculture permission to set up the pilot project at one of the Thruway service areas. The project allowed for two farm market operations at one service area, with business hours restricted to weekends and public holidays during the summer. Analysis of the pilot project indicated that there were definite possibilities for the marketing of fresh produce at roadside service areas. The sales volume suggested that a high percentage of the products sold at the markets would be over and above the amounts normally sold in that part of the state. Gross daily sales for one of the operations ranged from under $250 to over $600, with the highest income taken over Labor Day. This study found, the potential for travellers on a super highway to buy an assortment of agricultural products.

The second study that actively considers the travelling public segment of the market was carried out in Michigan by Propst et al., (1984). The purpose of the study was to identify the non-local or travelling component of the agricultural product purchasing market. Two hundred and seventy four (274) respondents were interviewed at farm

markets, U-Picks, wineries and agricultural festivals in Michigan. The study revealed that 61 percent of the travellers surveyed were repeat visitors, with a little over half (52%) being Michigan residents.

Travellers in the survey were above the national average in education, with a median age of 45 years whose major purpose for the trip was vacationing. Nearly two-thirds (63%) of the respondents planned to stay at least one night away from home within 30 miles of the agricultural operation where they were interviewed. When asked about their information sources 44 percent of the respondents cited informal sources, such as friends and family members, as their primary information sources. When asked how they found the farm outlet or market, prior knowledge or having previously lived in the area accounted for 6 percent of the travelers knowledge. Roadsigns accounted for 21 percent of knowledge of the location of farm outlets. This study was important as it began to identify the travelling, farm produce purchasing segment of the market as well as providing information on how they locate operations or market outlets.

Community Development Research

The relationships between communities and agriculture have primarily been the field of study of rural sociologists. These studies have tended to focus on the relationships and issues of rural poverty, farm size, and land ownership. There has been little research on the economic and social impacts that direct marketing operations may have in the communities where they are located.

One study that considered the influences of direct marketing on the community is that of Tyburczy and Sommer (1983). They pointed out that in many parts of the country, downtown merchants were strong supporters of farmers' markets. More than 90 percent of the farm-community markets in Illinois were sponsored by a chamber of commerce or downtown merchants' association. The business sectors' interest is based on the assumption that farm markets bring people into the center of the city and reverses the trend of shopping in the suburbs. A case in point is the Dutin farmers' market in Syracuse, New York. Within a year of being established the market was drawing 12,000 visitors to the area on a typical summer Tuesday. Local merchants reported increases in store sales of 8-14 percent on market day. Increased interest in the market resulted in some needed improvements by the city to the local downtown area

(Sommer, 1980).

Tyburczy and Sommer (1983) also carried out a study on the effects of farmers' markets on the downtown businesses district of Stockton, California. The study found that more than half the shoppers at the market each expected to spend an average of $26 more downtown, in addition to their market purchases. More than half the shoppers interviewed felt that the market had given them a more positive image of downtown. Ten retailers adjacent to the market were polled to ascertain the impact of the market on their businesses. Half of the merchants felt that the market affected their businesses while the rest felt that it did not.

The authors pointed out that the market had a definite impact on the downtown area. The impacts were that the market brought additional people downtown, had a direct economic impact, and helped create a more favorable perception of the downtown area. Finally, the authors concluded that the market had an important informal educational role. Farmers were frequently asked about their growing practices and costs, providing an informal forum for the discussion of farm and related issues.

Market Forecasting Research

There is a considerable body of marketing research that has dealt with the estimation of sales volumes for new and repeat purchase products (Bass, 1969; Nevers, 1972; Horsky and Simon, 1983). The majority of these studies and the models generated to forecast purchases from them, focused on consumer durables, or goods that are not often repurchased within a year of the original purchase. The purchase forecasting models are complex in nature and require high quality time series data to be effectively run. The use of these models may have application to businesses who wish to determine their part of the market share of a new product or service. However, there are other models that have been developed to track the sales of nondurable consumer purchases (Fourt and Woodlock, 1960; Bass, 1969). Neither the Fourt and Woodlock or Bass models approaches the problem of determining the sales volumes for agricultural products. The authors confined their studies to predicting the sales volumes of new and repeat purchases of soap and other household products.

Interestingly, the conceptual framework for the earlier models of market share prediction is grounded in the concept of "diffusion of innovations." Researchers have used this principle of diffusion to explain the adoption and growth

rates of new and repeat purchases. Bass (1969) attempted to evaluate the theory of diffusion, and proposed in his model that product sales could be forecasted on the basis of innovative and imitative forces in the market place (Lillien and Kotler; 1983). This concept may prove to be of some use in studying the growth of the ag/tourism industry and its popularity as a tourism resource over time.

Bass (1969) hypothesized that product purchases could be behaviorally understood by studying innovators and imitators. His rationale was that initial purchases of the product are made by both "innovators" and "imitators", with the important distinction between them being when they purchase. Innovators are not influenced in the timing of their initial purchase by the number of people who have already bought the product, and would generally represent repeat customer market segment. While imitators are influenced by the number of previous buyers and may eventually develop into a loyal return cliental. Imitators learn in some sense from those who have already bought. The importance of innovators is greater at the beginning of the product cycle but diminishes with time.

The diffusion model has a pattern of sales growing to a peak which is less than the total market potential, then declining to a stable plateau at a level lower than the

peak. This stabilization is a function of the relative growth of the replacement purchasing component of sales (i.e., nondurable goods replacement such as a new car every 4 years), and the decline of the initial purchasing component. Bass tested his model against the historical data of eleven consumer durable goods and found a high degree of accuracy for some products. The model was able to correlate the forecast for the sale of room air conditioners against actual sales with a correlation coefficient of $R^2 = 0.92$.

Nevers (1972) expanded Bass's model and applied the model across a number of market sectors, one of which was agriculture. Nevers applied a slightly modified version of Bass's model to the adoption of hybrid seed corn study in Iowa (Rogers, 1983). The model hypothesized that innovative and imitative behavioral forces can largely explain adoptive human behavior across many market sectors (durable and non-durable). Nevers determined that Bass's model could be successfully applied across a wide range of market sectors, and that it would be useful in providing a tested theoretical framework and rationale for long range forecasting. Both models may have some predictive value for ag/tourism businesses, if the data were available and the assumptions that are implicit to the models are adhered to.

The Problem

There exists in Michigan the potential for the formation of a statewide ag/tourism industry, operating at both local and regional levels. However, the question has been raised concerning the real potential for ag/tourism in Michigan. The determination of the size of the potential market for the direct sale of agricultural produce to travellers, will be the focus of this study. Uncertainty about the stability or potential for growth in an industry will prevent business operators and producers from committing scarce resources to ag/tourism ventures. To minimize this uncertainty, information on the growth potential of the industry has to be gathered.

One of the most accepted methods of minimizing uncertainty about market growth in business settings involves a market study (Kotler, 1984). A market study generates data to indicate what potential exists for the purchase of a particular good or service. This information guides decisions about whether or not to enter a market. In this study, the potential for growth of the industry will depend directly on the actual size of the available travelling market which is defined as those persons having interest, as well as access and income to a markets offer. This travelling market segment would be composed of those

consumers who are most interested in the purchase of agricultural products directly from the producers.

The review of the literature so far has indicated that there exists no easily defined niche within which ag/tourism enterprises fit. More importantly, there exists no central and unique framework whereby these enterprises can be analyzed. Ag/tourism is by nature a hybrid product, having as its major components the diverse fields of, production agriculture and tourism. Furthermore, the point of interaction between agricultural producers and travellers (consumers) is the marketplace which in part operates under the forces of economic decisions. Producers, have a product which they expect to sell at a profit to consumers who, in turn, have wants and needs they wish to have fulfilled. The fulfillment of these needs will determine what, if any, of the farmers' produce will be purchased through direct sales.

Barker (1981) identified three problems affecting the marketing of output or products that are basic to all farmers: (1) transportation of products to the market, (2) price accuracy of consumer demand, and (3) consumer demand. In the case of ag/tourism enterprises, the "transportation" problem is almost nonexistent in the case of farm markets and u-picks, and limited in the case of farmers' markets. The second problem is related to the accuracy with which

prices reflect consumers' demand. This is important as market prices are the chief medium for transmitting the consumers' demands to producers. Since agricultural production tends to be localized geographically with production taking place often at a great distance from the consumers, a consumer-producer communication problem tends to exist. However, when producers are able to meet consumers face-to-face and sell their goods, the prices obtained may be a more accurate reflection of the consumer demand.

The greatest problem, however, is that of estimating consumer demand. Consumer demand for farm products is tied to consumer satisfaction which, in turn, may be fulfilled by a mix of products and services. This is further compounded by the fact that consumer demands for products continually change. It was traditionally assumed that the demand for farm products was very stable (i.e., inelastic). However, this may not hold true for the U.S. and the western world where food is in plentiful supply and consumers can choose how to fulfill their needs from a wide variety of products and services. To actively attract that part of the consumers' discretionary food dollar, producers need to the desires or demands of the customer. This should involve some form of market planning to provide customers with the products and services that will satisfy their needs.

To obtain and use this type of information, requires a shift from a selling to a marketing orientation. Barker quoting Rodger (1971) states: "marketing is nothing more or less than the profitable matching of total company resources against market requirements and opportunities." In other words, a company should make what can profitably be sold, not make what it wants and then attempt to sell it. This approach will be seen as radical by most agricultural producers, who continue to see themselves in a production mode only. Economic necessity will eventually force producers out of selling and production modes into that of a marketing orientation. This change of stance, not easy for those who see themselves only in production agriculture, but may be necessitated by economic pressures.

One of the greatest problems that will face producers is the time frame necessary to respond to changes in consumer demand. Production is usually carried out in anticipation of demand, which may result for some crops in a two to three-year time span or longer between the initial decision to produce and a readily marketable product. It is therefore essential that producers be informed of consumers wants, needs, and purchasing patterns, along with information on new marketing trends before decisions to undertake production are entered into. This is possibly the most salient reason for market planning research.

There are few producers, who can afford to stay in agriculture for the long term without making a profit. If producers want to provide the customers with the products they want at a prices they can afford, market research and segmentation will need to be employed. Kotler (1984) defines the goal of marketing management as: "the control of programs designed to bring about desired exchanges with target audiences for the purpose of personal or mutual gain." Marketing theory provides a good conceptual framework for the analysis of the potential market for the direct sale of agricultural products to Michigan travellers. The necessity for producers to have more information on consumers needs, so as to attempt to maximize their product sales is the basis for this study. The variables of the study will be operationalized in terms of the products and services that travellers have shown an interest in purchasing. The information concerning these products and services will be available to aid producers and tourism businesses in market planning decisions.

Problem Statement

The problem under consideration is a valid one as the state has funded the promotion of ag/tourism through a number of channels: (1) promotional campaigns (YES Michigan, etc.), (2) pilot programs at a regional level, and (3) research efforts at Michigan State University. To determine the optimal level of promotion for ag/tourism by the state, the potential market for travellers purchasing direct agricultural products or services needs to be assessed. The determination of market potential is central to all market studies; since no business would rationally enter a market that does not possess the potential for justifying the initial investment. Similarly the state cannot rationally commit funds and manpower to promote an industry for which no measured market potential exists.

Information derived from this research will be of great value to existing businesses by providing evidence for the possible expansion of their products and services. The information will also be useful for those who are considering opening up ag/tourism enterprises, as the regional potentials may indicate possibilities for new enterprise development. The resulting research will also have a useful educational purpose, as it can be used by extension agents to disseminate information on ag/tourism at

a county level. Finally, information on the potential for agriculture as a tourism attraction may be utilized by communities for economic development through the creation of festivals and events related to specific or unique regional agricultural resources.

Study Objectives

For the sake of clarity, Kotler's (1984) definitions of market types were chosen. Kotler sees the estimation of a markets current and future size as one of the most important tasks of market analysis and divides the market into several distinct levels:

1. Total Market--the entire population of interest; in the case of this study the entire set of Michigan tourists.

2. Potential Market--the subset of the total market that expresses an interest in a given product (e.g., the subset of all Michigan tourists interested in purchasing a winery tour.).

3. Available Market--the subset of the potential market that does not just have interest, but also income and access to a particular market offer.

4. Served Market--the subset of the available market that a business or organization decides to actively pursue (i.e., the target market.).

5. Penetrated Market--those who actually buy the product.

The total market is the largest set of consumers and each market level below that represents a reduction in market size until the penetrated market (the actual number of buyers) is reached. Thus, the available market will consists of all those who have both interest in, as well as the necessary income and access to the market offer (i.e., the purchase of agricultural products and experiences in Michigan).

The major goal of this study is to estimate the size of the potential market for the direct sale of agricultural products to travellers in the state. The second goal of the study is to determine if there are any significant regional differences within the state, for products purchased and interest shown by travellers. Both goals are involved with

the issue of estimating the potential market of travelers in Michigan. The final goal of the study is to show how the data may be used to assess the "available" market and further aid ag/tourism enterprises and tourist destination communities.

The specific study objectives now follow.

1. To measure the size of the potential market for the direct sales of Michigan agricultural crops by producers to travellers in specific regions of the state by:

1a. calculating a measure of the statewide potential market by multiplying expressed product interest by the available market of travellers in the state.

1b. calculating the regional potential markets for certain products that travellers have shown an interest in purchasing.

2. To determine whether any significant difference exists between the potential market (those having interest) and the

penetrated market (those actually buying agricultural products) within the study regions of objective 1b.

H_1: There is a significant difference between the level of expressed interest and the level of actual product purchases within the study regions.

H_0: There is no significant difference between the level of expressed interest and the level of actual product purchases within the study regions.

3. To show how the data may be used to assess the "available" market and further aid ag/tourism enterprises and tourist destination communities.

Some assumptions about the demand for agricultural products

While the major objectives of this study are to analyze the potential market for the sale of agricultural products to travellers along with the growth potential for ag/tourism enterprises within regions of the state, some assumptions as to the nature of the demand for ag/tourism experiences need to be addressed before the methods chapter.

One of the basic assumptions of this study is that there is a demand for the sale of agricultural products and, therefore, these types of enterprises. As previously noted by Propst et al., (1984) a small percentage of the established ag/tourism enterprises were capturing about 90 percent of the available nonlocal customer market. This is a strong indicator that there is an active travelling market segment, conservatively estimated by Propst and Combrink, (1986) to be approximately 2.4 million customers. These customers have the desire or expressed interest to purchase agricultural products, access to market opportunities, and the income to purchase these products.

One of the questions that will be raised by the assessment of potential is whether potential can be transformed into actual market demand. The variables which the travelling market segment seems to possess-- interest, access, and income satisfy the standard economic criteria for the definition of demand as described by Eggert (1984). "Demand implies that you have more than the desire for the product but that you also have a need for the product and the means to buy it." One of the basic factors affecting the demand for a good or service is its level of substitutability. The uniqueness and the variety of the products and experiences offered by ag/tourism may, in fact, benefit from having a low degree of substitutability.

Customers who are going to "u-pick" blueberries will have no substitute for the experience of picking blueberries. This low substitutability for certain ag/tourism experiences may serve to strengthen an industry's unique position and provide businesses with a loyal clientele. Data from some studies (Propst et al., 1984; Pelsue, 1980) show a high degree of customer loyalty with many repeat customers.

In the light of data from this and other research efforts, there is every indication that there are more travellers on the nation's highways, and that they will buy fresh produce if the outlets are available (Propst et al., 1984; Pelsue, 1980; Stuhmiller et al., 1977). This study, however, does not determine the actual demand for the purchase of agricultural products by travellers in Michigan. Rather, it concentrates on the potential, which reflects the interest shown in a specific market offer by travellers. As stated above, interest reflects only one component of demand. It is necessary to make inferences and assumptions concerning the other two components, access and income. For example, it is assumed, based on the previous research, that most travellers have the income to purchase agricultural products. Access, then, may be the critical limiting factor. Inferences about access are made both by direct (i.e., asking travellers why they do not purchase more agricultural products) and indirect observation. In other words, the

primary focus of this research effort is on expressed interest (market potential) and not all components of the economic demand for agricultural products.

Other important factors influencing the location and development of ag/tourism enterprises which this study does not address include: the role of competition, the relative advantage of location and traffic flow, and the optimum number of ag/tourism outlets a given region can sustain. These topic areas may be of sufficient importance to the industry to foster individual research efforts at a later date.

There is little available research in the direct farm marketing literature on the role of competition. However, one study by Sommer et al., (1980) compared the pricing mechanisms of farmers' markets to that of supermarket chains. The study results apparently indicate that price competition does not have a significant impact on purchases. Rather, other factors such as product availability, freshness, and freedom from pesticides are more important determinants of purchase (Sommer et al., 1980)

No known research exists on the optimum numbers of ag/tourism outlets that regions can sustain. There is however, a large body of existing research in the retailing

literature where the factors of agglomeration and competition have been well documented (Isard, 1956; Stewart, 1950). A survey of this literature and an understanding of the size of the enterprises' market areas will go a long way to providing an answer to this interesting question.

One caveat needs to be raised here concerning the size of the travelling market segment and their purchasing habits. The estimation of market size, which itself is a function of the population and other market offers (i.e. competition) is of paramount concern in any market potential study (Kotler,1984). The importance of market size estimation cannot be over stressed. There are many concepts and methods in the business and regional economics literature that can be applied to market size estimation. However, these cannot be applied to ag/tourism (or tourism in general) for one very important reason: there is no concensus about how to measure and define the number of tourists/travellers in a region or state.

CHAPTER III

Methods

This chapter is divided into 5 sections. The first deals with the study population, the second with sampling procedures, and the third with study design. The fourth section discusses the secondary data sources, and the final section considers the data analysis. The study population and the study design section are given particular attention due to their importance in the overall research design.

Data to answer the study questions on the potential for the direct sale of agricultural products to travelers in Michigan were collected over a two year period from 1984 to 1985. The two studies (Summer 1984 and Summer 1985) focused on the two major segments of the ag/tourism mix in Michigan: the producers as well as the consumers and their expressed interests (Propst et al. 1984, Propst and Combrink 1986). The two studies were the result of ongoing research in Michigan State University's Department of Park and Recreation Resources.

While data from the two separate studies were used to answer the study questions, this thesis uses data from the Summer 1985 study as the primary data base. The major reason for this is that the expressed interest data is indispensable to the development of a market potential study. Another significant reason is that the author was the primary data collector and analyst for the second study only. Therefore, the Summer 1984 study will be viewed as a secondary data source and will be discussed along with the other secondary data sources.

Study Population

The population was all Michigan travellers (defined previously) during the summer of 1985. The study involved interviewing travellers about their knowledge of, and their interest in purchasing Michigan agricultural products on future trips. Travellers were also asked about what they perceived to be barriers to their purchasing agricultural products on their current and future trips.

To obtain the widest range of responses possible given the limited resources, travellers were sampled only at popular Michigan travel destinations. These destinations were chosen in consultation with researchers from Michigan

State University's Department of Park and Recreation Resources. Thus, from the possible travel destinations in Michigan, 10 of the most popular were chosen based on expert opinion and high visitation rates. This constitutes a non-probability (judgement) sample of all possible travel destinations. In total 616 interviews were carried out from June to July of 1985 in 10 Michigan counties. A list of the survey sites follows:

Frankenmuth Barvarian Festival (Frankenmuth)
Clare Travel Information Center (Clare)
Tawas Point State Park and Mariner Festival (Tawas)
P.J. Hoffmaster State Park (Muskegon)
Ludington State Park and Michigan/Wisconsin Ferry Service (Ludington)
Leland Area and South Manitou Island Ferry Service (Leland)
Traverse City area and Cherry Festival (Traverse City)
Mackinac Island Ferry Service (St. Ignace)
Kalamazoo Flower Festival (Kalamazoo)
Berrien Springs Youth Fair and Horse Show (Berrien Springs)

Respondents were asked to check a list of 63 products, and services that they would be interested in purchasing on their current and future trips to Michigan (see Appendix A,

item 2). this enabled the study to ascertain what products travelers were interested in purchasing. The list included: fruits, vegetables, dairy products, vegetables, processed foods (nondairy), other products (firewood, fish etc.), and services (e.g. winery tours, rural bed and breakfasts etc.).

The survey also gathered other information:

1. The products they had bought (item 2).
2. The amount spent on these products (item 3).
3. The number of visits on this trip to wineries, agricultural product festivals, and agricultural processing plants (item 5).
4. The reasons (i.e., barriers) that prevented them from purchasing Michigan agricultural products (item 7).

Sampling Procedures

The bulk of the surveys were carried out over weekends or during times of peak activity, simply to ensure maximum utilization of scarce resources. However, surveys were also administered on all days of the week depending upon the location of the events and the time of their occurrence to achieve a random sample. As mentioned previously a total of

616 questionnaires were completed by the respondents throughout the lower peninsula. Response to the survey was generally good, with the respondents providing most of the information that was asked for on the questionnaire. There were a total of 23 refusals by respondents who were not willing to complete the survey, resulting in a non response rate of just under 4 percent.

As mentioned in the previous section, a major methodological concern of the study was to obtain as wide as possible a range of responses given the limited resources available. As the project was exploratory in nature and the first of its kind, no set sample size could be determined. To obtain the best spread of responses due to the large population, respondents were surveyed in as wide a variety of locations and settings within the state as was possible. Each location could be considered unique with respect to its physical surroundings and the activities in which the respondents were engaged. These factors have considerable impact on the ability to randomly select respondents and the ease with which they can be interviewed. Depending upon the site characteristics various sampling techniques were used.

Sampling techniques included: (1) stratified and then systematic sampling with a random start at state park campsites; (2) judgement sampling of first group and,

thereafter, systematic sampling of groups waiting in line for ferries; (3) convenience sampling of groups who walked by or registered at non randomly selected locations at festivals during times selected by judgement sampling. Each of these sampling procedures will be dealt with individually as they all have a direct correlation to the studies validity and replicability

Stratified and Systematic sampling The use of a systematic sample with a random start was only used when the surveys were carried out in State Park campgrounds. The sampling interval or consistent distance between population elements for the specific campground was based upon the total number of sites within the campground. The sampling interval itself was determined by the sample ratio of no more than 20 percent of the total number of campsites in any of the campgrounds.

The starting point for the campsite surveys was obtained by using the last two digits of a randomly selected number from a random numbers table. The campsite that corresponded to the last two digits was then the starting point of the survey process, and every "nth" site was surveyed according to the 20 percent ratio (e.g. if campground had 200 sites, 10 sites were systematically selected). The use of the sampling interval however does not

reduce the possibility of periodicity which is always a potential disadvantage of systematic sampling. If the chosen site was empty or the respondents unwilling to cooperate the refusal was noted and the next site was surveyed. This process continued until a response was obtained, thereafter the normal sampling interval was again employed.

To randomize responses further the times that the survey was administered were also stratified according to weekend versus weekday and then time of day (morning or afternoon within each day chosen). This was done to minimize the probability of surveying only one "group" of respondents (e.g., those who stayed at their sites during the middle of the day). It was noted that there was a distinctive age difference exhibited between campers who rarely left their sites during the day and those who were rarely at their sites during the day.

Judgement sampling A judgement sample and thereafter a systematic random sample was employed in situations where the respondents were typically standing in line or were waiting in a specific location for a specific occurrence. Two examples of these situations were (1) respondents lining the parade route prior to the Grand Parade of the Cherry Festival, in Traverse City and (2) patrons standing in line to catch the ferry to Mackinaw Island.

The first group was selected based on the researcher's judgement of an unfulfilled need in the sample. For example the majority of respondents at the sites where the surveys took place were Caucasian and, as such, minorities were underrepresented in the population. A minority group would then be chosen as the start of that survey session, ensuring at least one minority response in the survey. Other criteria were also used to select the first group to be sampled, such as age, and party composition. Once the first questionnaire had been completed, a sampling interval determined prior to start of the session was employed in the same manner as above in the campsite surveys.

The chance selection of the first group represents a non- probability sample and, as such, the sampling error cannot be determined. These samples are generally considered less reliable than probability samples. However, judgement samples are often easier and cheaper to use than probability samples and are appropriate in exploratory studies like this one. In the case of this study the population it would have been to expensive to develop a sampling frame. This resulted in the study making use of available subjects selected according to certain criteria. This process fits Babbie's (1983) definition for judgement sampling. The limitations to the validity of the sample were minimized by the systematic choice of respondents after the initial judgement selection.

No Judgement and Convenience Sampling This method, the least random of all, was employed at agricultural festival and special events. Convenience sampling of groups was carried out at the Berrien Springs Youth and Horse Show, the Frankenmuth Barvarian Festival and the Tawas Mariner Festival. This method of sampling was well suited to festivals where there was generally a high volume of pedestrian traffic at any given time and only one interviewer to collect the data.

The choice of sampling sites depended on the nature of the festival and the available resources or attractions (i.e., a judgement sample). In Berrien Springs sampling was done in the local Cooperative Extension Service tent where there was an exhibit of local produce. The tent was also the collection site for a coupon redemption offer that had been targeted at the Chicago market. The rationale behind surveying the groups registering at the tent was that a high proportion of those redeeming their coupons could be classified as travellers (more than 60 miles one-way away from home). Times of day for surveying (in two hour blocks) were also selected by judgement according to the times when the festivals received their highest use. Babbie (1983) points out that judgement and convenience sampling may be used when it is impossible to compile an exhaustive list of the components that comprise the target population.

Other Study Design Factors

The survey (Appendix A) was a self - administered questionnaire. The respondents were first screened, so that only people who had travelled sixty miles one-way distance from their residence were surveyed. The purpose of asking the screening question was to eliminate the possibility of interviewing "local" residents. This is an important point as the objective of the study is to estimate the potential for the sale of agricultural products to travellers and hence not to locals. The justification for selecting 60 miles one-way from the respondents' residence was discused by Propst et al. (1985). This distance was thought to best approximate 1 hour in travel time from the residence of the respondent and therefore would eliminate most locals and commuters. This figure closely approximates that of the National Personal Transportation Study (Klinger and Kuzmyak, 1986) whose definition of a travel period or trip is " ..travel 75 miles or more from the household." Since comparisons were to be made with the Propst et al. (1985) study, the 60 - mile criterion for a traveler was also adopted in this study.

If the answer was "yes" to the distance question, the interviewer requested their cooperation in answering the questionnaire. If the answer was "no" the respondent was

thanked and the interview was terminated. Once the respondent agreed to be a part of the survey the researcher would explain the reasons for the survey and the purposes of the study before allowing the respondents to fill out the questionnaire. If the respondents were part of a group then they were encouraged to get group input on the products of interest questions. Since the majority of travel is done in families and other groups, information at the group level was solicited. The researcher was not involved in the actual completion of the questionnaire but was available to clarify any problems (definitions, etc.) that the respondent may have had.

Secondary Data Sources

To obtain data that would help meet the study objectives use was made of a variety of different secondary data sources. These data sources ranged from statistics on crop availabilities and fruiting dates released by the Michigan Department of Agriculture (Michigan Dept. of Agriculture, 1986a. & 1986b.) to Mich. Dept. of Transportation vehicle counts (Spotts, 1986). Secondary data sources were judiciously used in places where no primary data sources pertaining to the study existed.

Summer 1984 Ag/Tourism Study. One of the most important secondary data sources used in this study was that of Propst et al., (1984). The goal of the study was to explore the relationship, that existed between agriculture and tourism in Michigan. The study objectives were:

1. To determine the extent (magnitude, timing, and location) of agricultural festivals, farm markets, farmers' markets, u-pick farms, and certain industries (e.g., wineries).

2. To assess the number of tourists and tourist dollars generated by these 5 types of agriculturally-related activities.

3. To examine the potential of these 5 activities for attracting tourists.

The researchers made use of three different data collection methods to gather the information necessary, to meet the study's objectives. First an inventory of all the agricultural festivals, u-pick operations, farmers' markets, farm markets and certain industries (i.e., wineries) located in Michigan was carried out. Secondly, interviews were conducted both on-site and off-site at selected festival, u-picks, wineries etc., to investigate people's awareness of

agricultural products and events. Personal, on-site interviews were carried out at 23 direct market and agriculture related festivals, in sixteen counties in the southern lower peninsula. The objective of the interviews with on-site travelers was to learn:

(1) what agricultural products they were buying
(2) how much of the product(s) they were buying
(3) how much they were spending on these products

Details of the study regions, as well as the methods used in contacting travelers etc., can be found in great depth in Propst et al., (1984) along with a discussion on the relationships between agriculture and tourism in Michigan. Finally, the researchers sent a mail out questionnaire to a sample of Michigan roadside farm markets and u-pick operations. The purpose of the business survey was to assess the operations' characteristics (length of season, products sold etc.), number of tourists served, tourist dollars generated and promotional media used.

Michigan Dept. of Transportation Traveler Flows. Use of traveler flows as indicators of tourism activity are widely used as a basis for planning and marketing decisions in the travel and tourism industry. There are various indicators of traffic flow, such as counts of passengers enplaning and

deplaning at international airports or the number of passengers using an international ferry service.

This study made use of Adjusted Average Daily Traffic counts (ADT's) which were obtained from the Michigan Department of Transportation and used in TRAVEL AND TOURISM IN MICHIGAN: A STATISTICAL PROFILE (Spotts, 1986). ADT's were used to derive travel figures for various locations that fell within the study region. The ADT's used in the study were already derived in the Travel and Tourism profile and use was made of them without any further adjustments.

Ross Roy Survey. Use was made of an annual survey on Michigan Tourism carried out for the Michigan Department of Commerce by the Ross Roy agency. Figures for the number of tourists in Michigan in 1985 were used from the Ross Roy fact sheet provided by the Michigan Travel Bureau. It must be stressed that these figures were only used to establish the lower bound for a range of traveler activity (Michigan Dept. of Commerce, 1987).

Michigan Dept. of Agriculture Statistics. A great deal of use was made in the study of statistics on crop availability, dispersion, and yields, provided by the Michigan Department of Agriculture (MDA). The distribution

of many direct marketing businesses were obtained from the department's County Carousel (MDA, 1986d) publication. Some further counts of direct marketing facilities was obtained from The Michigan Certified Farm Markets division of the Farm Bureau (MACMA, 1986). Finally, the 1986 County Food and Agricultural Development Statistics (MDA, 1986c) book was used to provide evidence of agricultural development in specific counties.

Nationwide Personal Transportation Study. Data were also obtained from the second volume of the Nationwide personal Transportation Study (Klinger and Kuzmyak, 1986). The data for this report was analyzed from the "travel diaries" kept by 8500 households for the year 1983-1984. Household throughout the U.S. and were selected according to strict probability sampling criteria. The travel diaries reflect the daily travel by trip purpose, vehicle occupancy, destinations etc., of the selected households. The NPTS was able to develop national averages of non-comercial household travel in the U.S. from the data collected by the survey.

Objective 3 Objective 3, is concerned with the question of how best the data can be used to assess the available market and further aid ag/tourism enterprises and tourist destination communities. This analysis will be exploratory,

product potentials and matching these with existing opportunities within the region. Objective 3 was also answered by evaluating item 7 (Appendix A) which identifies the barriers to overcome in trying to achieve market potential. These data were analyzed and discussed by Propst and Combrink (1986), but will be paraphrased in the discussion section as a secondary data source because of their importance to the fulfillment of objective 3. This info will be useful for those planning to enter or who are already at the point of entering the ag/tourism marketplace as it indicates strategies for increasing the numbers of non-local customers.

Data Analysis

To analyze the data, a number of methods were used. First the data were coded from the questionnaires, and then entered into the CDC 750 mainframe computer at Michigan State University. The data were then analyzed by using a prepared statistical program Statistical Package for Social Sciences developed by Nie et al., (1984). The initial runs of the data set were used to check for coding errors and to generate frequency distributions for the variables. Subsequent analyses were performed on a micro computer using

SPSS/PC+ (Norusis, 1986).

Objectives 1.b and 2 were the only ones requiring statistical analysis. As all the data relating to objectives 1.b and 2 were at the interval level a more powerful statistical test than those used for nominal or ordinal data could be used. Babbie (1983) defines interval level measurement as data where "...the logical distance between attributes can be expressed in meaningful standard intervals with no fixed zero point." Analysis of Variance (ANOVA) was suited for use in the regional difference data (objectives 1.b and 2) as a test to determine whether the observed differences between groups were significant or not. The basic assumptions of ANOVA are: (1) interval or higher scaled data, (2) randomly selected sample from a population with a normal distribution, (3) variation between groups is normal. In the case of both objectives 1.b., and 2., the hypothesis of equal means between study units was assumed.

In the case of objective 1.b., some analysis was needed to determine whether the observed differences between the regions were the result of sampling error or whether they were valid. The regional differences between products were analyzed with the procedure ANOVA in the SPSS package.

When considering objective 2., some data recombinations

had to be carried out to develop the data for the penetrated market figures. Purchase data from the 1984 survey that corresponded with the 1985 study regions were combined with the 1985 study purchases to provide the penetrated market figures. The penetrated market was expressed by those who bought a specific agricultural products within the region. Once the data recombinations were made, it was possible to separate the penetrated and potential markets.

Data were recombined where possible to reflect the purchases of both 1983 and 1985 respondents. In cases where this was not possible, due to the unavailability of data for both years in a specific county, available data for the year were be used. For example, if apricots were purchased by respondents in Muskegon county in the Summer of 1984 but not in 1985 then the 1984 purchase figures were used. The difference in size between the potential and penetrated markets was then calculated by the following formula:

Difference = Regional Potential - Regional Purchases

The difference between the potential and the penetrated markets were then used to answer the hypothesis of Objective 2.

2. The data reflecting the product purchases and the expressed interest were measured as percentages of interest shown in and or percentages of purchases of a specific product. The differences between the two measures reflects the disparity between the levels of product interest and the actual amount of products bought. These differences, were then be compared across regions. This comparison across regions will indicate whether any one region has an advantage vis-a-vis another with respect to specific product sales potential.

Chapter IV

RESULTS

The major goal of this study was to consider whether there exists a potential market for the direct sale of agricultural products by farmers to travellers in Michigan. The research questions formulated in this study deal with the problem of defining market potential at three levels of aggregation. The first is a statewide potential for the sale of products and can be considered to be a macro application of the data to the research question. The second level of aggregation takes place at the regional level where the actual sales of products to travelers will be compared across regions of the state. The final level involves the application of the data to the community level which is the smallest level of aggregation that will be studied.

The first section of the chapter measures the market potential for the direct sale of agricultural products to travellers in the state. This measure of market potential was obtained by using expressed interest data (item 6. in Appendix A) from the summer 1985 study. Objective one has two sections. The first deals with the statewide potential while the second considers the regional potential for

product sales. The second section compares the actual sales (penetrated market) of products to the potential market. Comparisons are made across regions using data derived from Propst et al., (1984) and: item 6 in appendix A. The third and final section considers the possible impact that product sales may have in the communities where they are sold.

Potential Market Estimation

Objective 1 of the study involves measuring the potential market for direct sales to travelers. The objective was previously stated in terms of a measure of the market potential for the sale of agricultural crops in Michigan:

1. To measure the size of the potential market for the direct sales of Michigan agricultural crops by producers to travelers in specific regions of the state by:

    1a. calculating a measure of the potential market by multiplying expressed product interest by the available market of travellers in the state.

1b. calculating the regional potential markets for certain products that travelers have shown an interest in purchasing.

Objective 1.a., Statewide Potential Market

The determination of the current and future size of a market is one of the most important and crucial steps in the process of market analysis according to Kotler (1984). As was previously noted in the study objectives in chapter 2., Kotler (1984) divides the market into several distinct strata. The strata that was most important to the study objectives was the potential market, which is; that subset of the entire market expressing an interest in a given product. For example, the potential market for apples would comprise the subset of all Michigan travellers who are interested in purchasing apples.

Determining the size of the potential market was the major objective of section 1 of the study. To determine the size of the statewide potential market required the measurement of:(1) the professed interest of travellers in purchasing agricultural products (i.e., the potential market), and (2) the total number of travelers in Michigan (i.e., total market). The calculation of the potential

market for any given product was then based upon the following formula:

potential market = % interest in buying x total number of travellers

The percentage of interest respondents expressed in buying a product was derived from the expressed interest portion on the 1985 summer survey (item 6 in Appendix A). Inherent in the use of these figures is the assumption that the survey sample is representative of all Michigan travellers. This assumption is reasonable, as the demographic data of the respondents are similar to that of other representative studies carried out by Michigan State Universities Park and Recreation Resources Department (Propst et al., 1984; Propst and Combrink, 1985; Fridgen et al., 1985).

Estimating the number of travellers or tourists on the other hand is far more complex. The total number of Michigan travellers or tourists is not well known, but estimates range from a high 49.2 million person-trips to a more moderate 24 million person-trips (Michigan Dept. of Commerce, 1987). The difficulty involved in determining the number of tourists in Michigan (or any state) for any given

year or time period lies partly within the definition of a tourist. There is much debate in the literature over the definitions of "tourist". Attempts to further define the role of the tourist have resulted in the use of descriptive variables or categories such as travel for pleasure, or visits to friends and relatives.

There is a reasonable consensus opinion in the literature that tourism involves a trip away from the place of residence, to a new location for the purposes of pleasure and recreation (Leiper, 1979). This catch-all definition however fails to include those who may use business or convention trips for tourism related activities. Another major stumblingblock to determining the number of tourists results from the inability to measure travelers entering or leaving the state boundaries. While checkpoints exist on the U.S./Canada border, there is no consistent system for measuring the number of tourists arriving in Michigan from other states.

Because of the difficulty in defining and developing a standard measure of tourist activity, various indicators of travel volume have been used as proxies for actual tourist counts. The U.S. Travel Data Center in 1978 identified 12 U.S. travel indicators ranging from established receipts or retail sales to the domestic demand for motor gasoline (U.S.

Travel Data Center, 1978). The wide variety of travel indicators used attests to the difficulty of obtaining any accurate level of tourist activity. While it would be convenient to be able to use the terms traveller and tourist interchangeably in this study it would not be technically correct. The term traveller will be used in the study under the reasonable assumption that tourists are a subset of all travellers in Michigan. More specifically this study concentrates on those travelers who are more than sixty miles one-way from their places of residence. This then increase the likelihood that the tourist subset of all travelers in Michigan will be included in the study and that the people merely commuting to and from work will be excluded.

To derive a precise estimate of the total number of travellers in Michigan over the study period was beyond the scope of this project. However, the nature of the research question required that this figure be derived for use in the potential market formula. Use was made of the 1985 estimates of person-trips provided to the Michigan Travel Bureau by the Ross Roy Agency (Michigan Dept. of Commerce, 1987). The 1985 estimate for the total person-trips taken in Michigan was 46.9 million person trips. When two or more persons travel together in the same vehicle, each person is counted as making one trip. This definition is also consistent with

the person trip measurement used in the National Personal Transportation Study (Klinger and Kuzmyak, 1986) which further defines a person trip to include all private or public modes of transportation.

Determining Statewide Market Potentials

The statewide market potential figures were derived from two separate sources (1) the Ross Roy Agency figures of a total of 46.9 million person trips for 1985 (Michigan Dept. of Commerece, 1987), and (2) adjusted daily traffic counts for major travel routes obtained from Spotts (1986). Two sets of figures were used so that a range of market potential could be determined. The Ross Roy Agency figures will supply the lower bound of the range while the adjusted traffic counts will supply the upper bound of market potential. Due to their importance to the study the methods for deriving both sets of figures will be discussed in some detail and appear in technical Appendix B as well.

Travel Bureau 1985 figures

As the Ross Roy Agency figure of 49.6 was for the total number of person trips in Michigan it gave no indication of the total amount of persons who traveled in Michigan. This was in part due to the current measure of travel activity the person trip. The figure could not then be translated directly into persons as there was no assurance that the total represented single person trips. To reduce this problem the figure had to be reduced by dividing it by the average amount of person trips so that the potential market could be measured in persons. The conversion of person trips to persons was achieved by dividing by 2.07 which was the 1985 national average of person trips. The reduction coefficient of 2.07 was obtained from the U.S. Travel Data Center's National Travel Survey (1985).

The national average of person trips was obtained by dividing the national average of person trips by the number of persons in the study resulting in the average number of trips taken by one person in a year. The use of national averages was justified as there were no available figures for the average person trips at the state level. The use of national averages was further justified as national averages were used to determine the average vehicle occupancy for reducing the statewide adjusted daily traffic counts.

The lower bound was then calculated using the following formula:

A / B = C where:

A = 49.6 total person trips in Michigan.

B = 2.07 person trips per year.

C = Potential Market (number of travellers in Michigan in 1985)

Applying this formula to the 49.6 million person trips in Michigan in 1985 yeilded the following:

49.6 million / 2.07 = 23.96 million persons

The 23.96 million persons was rounded up to 24 million persons for ease of computation. This figure was then plugged into the potential market formula as the total number of travellers in Michigan.

Adjusted Daily Traffic Counts

It was felt that the market potentials would be better displayed by offering a range of potentials the lower bound of the range was determined by using adjusted average daily

traffic counts. These traffic counts were obtained for well established travel routes in Michigan as determined in Spotts (1986). The use of traffic counters poses some problems however, due to a lack of any other statewide travel data they were used. While traffic counts do not provide any information about the travelling party, their destination, or the party composition, they do provide a proxy for general travel activity.

Permanent traffic counters were used in the following Michigan counties: Alpena, Berrien, Calhoun, Chippewa, Clinton, Grand Traverse, Mackinac, Marquette, Oakland, Ogemaw, Roscommon, Saginaw, Sanilac, and St. Clair. The annual adjusted average daily traffic counts were summed and then multiplied by 365 to provide a measure of travel flow for the year of 1985 (see Table 1). The following calculations were performed:

1. The annual adjusted daily traffic counts for the counters in the state were totalled and then multiplied by 214 days. The 214 days reflects the 7 month growing season for all crops in Michigan. The length of the growing season was an important factor in determining the size of traffic volume count, as it would upwardly bias the market potential if it were assumed that agricultural products were available yearound. The use of 214 days as opposed to 365 days

provided a more reasonable market potential figure.

Then the annually adjusted average daily total was multiplied by 365 to provide a total vehicle traffic count for 1985.

225,786 x 214 = 48,318,204 vehicles (traffic flow)

2. Once the adjusted traffic counts were developed some further modifications had to be carried out to convert the traffic counts (vehicle counts) to person-trips and then logically to persons. As the seasonally adjusted traffic accounts are simply counts of vehicles they give no indication of the trip purpose or the composition of the travelling party in the vehicle. Two major adjustments have to be carried out before the traffic count data can be used for the regional potential market estimation. These adjustments involve estimating the average number of people per vehicle, and the percentage of non-commuters to eliminate those who are travelling to and from work.

The two factors of average vehicle occupancy and trip purpose do not get much attention in the transportation planning literature, due in part to the complexity and expense of developing an accurate measure for them.

Table 1

Adjusted Average Daily Traffic Counts for All Michigan Regions

County	Adjusted Average Daily Traffic Counts
Upper Peninsula	
Marquette	3,376
Mackinac	14,572
Lower Peninsula	
Chippewa	4,388
Grand Traverse	7,371
Alpena	5,257
Ogemaw	3,282
Roscommon	6,077
Clinton	15,645
Sanilac	2,946
St. Clair	9,109
Saginaw	73,009
Berrien	2,843
Calhoun	18,871
Oakland	59,090
Total	225,786

Source (Spotts, 1986).

However, some measures of vehicle occupancy and trip purpose were found at both the state and national level. At the state level two studies were found that answered the question indirectly. They were the Holland/Zeeland Origin and Destination Study (Department of State Highways.,1967) and the Cadilac Area Weekend Origin and Destination Survey (Michigan Department of Transportation, 1980). Both these studies asked travelers about their trip purpose and destination and provided figures of average vehicle occupancies. This question also received some consideration in the 1984-1985 survey of users at Michigan Welcome Centers carried out by the Michigan Department of Transportation (1986). The average vehicle occupancy rate for visitors to the Information Center at Clare was a high 2.3 persons reflecting most likely the fact that only travel or tourist groups used the Information Center where the interviews were carried out (Cobb, 1987).

At the national level, the Department of Transportation of the Federal Highway Administration commissions a survey every 5 years of personal travel in the United States. These studies develop national averages for such variables as the destination of vehicle trips and average occupation rates of vehicles by travel purpose. The latest study in the series is the Nation Wide Personal Transportation Study 1983-1984 (Klinger & Kuzmyak, 1986) which contains a wealth of data on

personal travel. The decision to use the Klinger and Kuzmayak (1986) figures for average vehicle occupancy and trip purpose was based partly on the age of the two Michigan studies (1967 and 1980) and the possible bias of the Clare figure in reflecting only those travellers actively seeking information at the TIC's. It was felt that the national averages would provide a more reasonable and conservative basis for expanding or contracting the adjusted traffic counts. The national average for number of vehicle occupants on trips of 41 miles or more and for non-home-to-work trip purposes was 2 occupants, which accounted for 72 percent of the respondents. While this figure is lower than the MDOT figure of 2.3 measured at the Clare TIC, it is based on a more heterogeneous sample and is more consistent with the definition of "traveler" used in this study.

The national average for trip purpose by vehicle occupancy shows that 31 percent of all trips taken were for the purposes of to or from work and work related business. The remaining 69 percent of non-commuter trips are split into 25 percent of trips related to education, religious and civic activities and 44 percent trips related to leisure time travel or vacation. The 44 percent of trips relating to leisure or discretionary time travel provide a coefficient by which to multiply the adjusted traffic counts to eliminate the commuters and business travellers while not

upwardly biasing the potential market size. However, this method may still underestimate the total travel volume as many business trips (conventions etc.) are also for pleasure. It would not be incorrect to add some small percent of the business trips to the 44 percent to capture that portion of the for pleasure business trips.

The formula used to calculate the number of travelers in Michigan is:

A x B x C = D

48,318,204 x 2 x .44 = 42,520,020

Where:

A = Statewide Adjusted Traffic Counts

B = National Average Vehicle Occupancy Factor (2)

C = National Percentage of Non-Commuters Factor (.44)

D = Number of Travelers in Michigan

These figures were not seasonally adjusted, as they were taken for an entire year. There may be significant differences in travel volume between the summer and winter travel seasons.

Results Objective 1.a.

The results of objective 1.a., a measure of the statewide market potentials for various products are summarized in Table 2.

It is important to note, that certain products exhibit a far greater market potential than do others. From the table it is apparent that fruit has the highest overall market potential of all the products that travellers expressed an interest in purchasing. The highest individual market potential however, is that of corn in which 57 percent of the study population expressed an interest. Fruit's market potential was generally higher across all the categories with the exception of apricots, red tart cherries and other melons which had low market potentials. The potentials of apricots and other melons may also be low due to the fruit not being in season at the time the questionnaire was administered.

Vegetables also have a relatively high overall market potential with lettuce and carrots having the highest market potential next to that of corn. Vegetables also accounted for some of the lowest market potentials of the study with only 6 percent of the study population showing any interest

Table 2

Statewide Potential Interest

Products	% Exp. Int.[d]	Market Potentials[a] High[b]	Low[c]
Fruit			
Apples	46	19780000	11040000
Apricots	20	8600000	4800000
Blueberries	48	20640000	11520000
Cantaloupe	36	15480000	8640000
Cherries	56	24080000	13440000
Cherries Red-Tart	21	9030000	5040000
Melons (Water)	29	12470000	6960000
Melons (Other)	21	9030000	5040000
Nectarines	30	12900000	7200000
Peaches	47	20210000	11280000
Plums	26	11180000	6240000
Raspberries	42	18060000	10080000
Strawberries	48	20640000	11520000
Tomatoes	33	14190000	7920000
Flowers & Plant			
Bedding Plants	6	2580000	1440000
Flowers (Cut)	10	4300000	2400000
Flowers (Dug)	7	3010000	1680000
Shrubs	7	3010000	1680000
Trees	7	3010000	1680000
Dairy Products			
Cottage Cheese	18	7740000	4320000
Cheese	35	15050000	8400000
Eggs	42	18060000	10080000
Milk	33	14190000	7920000
Vegetables			
Beans (Green)	18	7740000	4320000
Beans (Other)	11	4730000	2640000
Broccoli	27	11610000	6480000
Carrots	30	12900000	7200000
Cauliflower	24	10320000	5760000
Corn	57	24510000	13680000
Cucumbers	28	12040000	6720000
Egg Plant	18	7740000	4320000
Lettuce	41	17630000	9840000
Peppers (Green)	21	9030000	5040000
Peppers (Others)	8	3440000	1920000
Potatoes	32	13760000	7680000
Pumpkin	17	7310000	4080000
Rhubarb	13	5590000	3120000
Spinach	14	6020000	3360000
Squash	17	7310000	4080000
Sugar Beets	10	4300000	2400000
Turnips	6	2580000	1440000
Water Cress	6	2580000	1440000
Zucchini	15	6450000	3600000
Processed			
Cider	35	15050000	8400000
Fruit Juice	34	14620000	8160000
Jams, Jellies	38	16340000	9120000
Maple Syrup	34	14620000	8160000
Wine	34	14620000	8160000
Other Products			
Firewood	16	6880000	3840000
Fish (Smoked)	29	12470000	6960000
Fish (Fresh)	25	10750000	6000000
Honey	30	12900000	7200000
Mushrooms (Domestic)	12	5160000	2880000
Mint	6	2580000	1440000
Other Herbs	4	1720000	960000
Services			
Farm Tours	9	3870000	2160000
Winery Tours	28	12040000	6720000
Vacation Farms	18	7740000	4320000
Rural Bed & B	18	7740000	4320000
Product Process	8	3440000	1920000
Forestry Plants	8	3440000	1920000
Forestry Museum	10	4300000	2400000

a Market Potentials for the direct sale of agricultural products to travelers in Michigan obtained by multiplying the percentage expressed interest in a product by the number of travelers.

b High range 43,000,000 travelers created by summing Annual Adjusted Average daily traffic counts for the popular travel rates and multiplying by 214 days (length of growing season) and reduced by average vehicle occupancy rate and percentage non-business commuter travel.

c Low range 24,000,000 travels created by reading Travel Bureau figures from Ross Roy Agency by national average person trips to obtain the number of persons.

d Expressed Interest is the interest to purchase the specific product on future trips in Michigan.

in turnips and watercress. Both dairy and processed products showed relatively high market potentials with eggs and jams and jellies leading their respective categories. The processed products exhibited a high overall potential ranging between 34 and 38 percent expressed interest.

There were some surprises in the category of other products, as smoked fish and honey displayed the greatest market potentials at 29 and 30 percent expressed interest, respectively. The lowest market potentials for the study were found in the flower and plant category which never exceeded 10 percent of interest. The final section of the table covers additional services that the survey respondents were interested in purchasing or experiencing. Winery tours were by far the most popular with 28 percent of the respondents expressing an interest in participating in a winery tour. The low expressed interest shown in some of the services such as product processing plants may be the result of little public awareness of the fact that tours are available.

It must be remembered that these market potentials are only indicative of the potential size that the market may reach. Due to the conservative approach expressed in the use of even the high estimates of total number of Michigan travellers, the market potentials may in fact be larger than

expressed. However, conversely even if the lowest estimate of market potential is achieved this still represents a large base of customers. For example, there was only a 4 percent expressed interest in herbs but when the market potential is calculated for the lower bound it still results in a possible 960,000 customers. It is important to remember that no single business can capture the total potential market. Rather, the business will capture only that percentage of the target market that has interest, income and access to the given product.

Regional Market Potential

As previously stated in this chapter objective 1.b., considers the regional market potentials for specific agricultural products that travellers have shown an interest in purchasing.

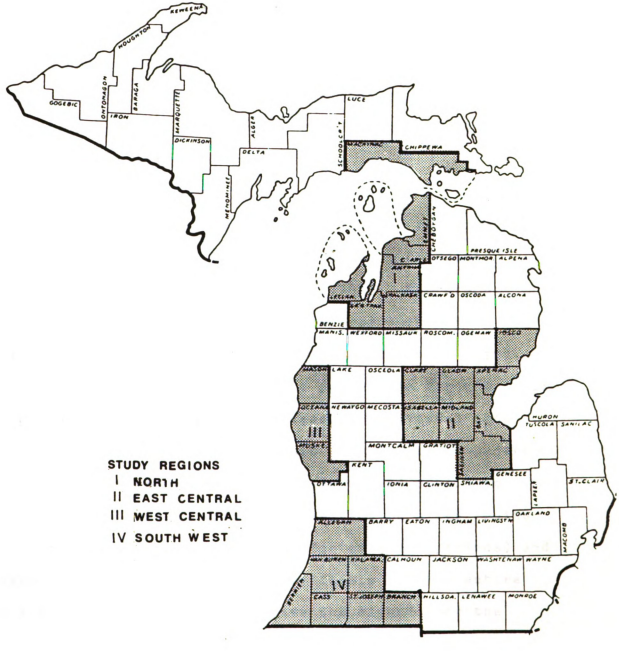
The regional market potentials were calculated by the same formula used to calculate the potential market in objective 1.a. However, figures representing the potential travelling market segments in the specific regions will be considerably smaller than the aggregate figures for the whole of Michigan. The regions used in this study do not correspond with any of the recognized regional divisions in

the state as they were developed by the researchers to reflect more accurately tourist destinations rather than administrative divisions. For the purposes of this study the lower peninsula was divided into four regions (see Figure 1.) encompassing the following counties: East Central (Saginaw, Clare, Iosco); West Central (Muskegon, Mason); Southwest (Berrien, Kalamazoo); Northern (Leelanau, Grand Traverse, Mackinac). Figure 1., actually covers more counties than were in the original study area indicated above. The extra counties were included to indicate those counties that provided data on spending patterns that were used to answer objective 2.

There were and are no readily available figures, reflecting tourist visitation in the regions defined by this study. The four Regional Tourist Associations in Michigan do not attempt to track visitation levels in their regions and were unable to provide any reliable information for the study. To overcome this lack of data, traffic counts on the major highways entering the study regions were used. As all of the study regions lie in the Lower Peninsula, no traffic counts were used from the Upper Peninsula, with the exception of northbound traffic over the Mackinac Bridge. The Mackinac Bridge counts were necessary to include Mackinac County in the Northern region.

Figure 1

Study regions used to determine regional ag. product potentials



Permanent traffic counters were used in the following counties: East Central (Clare, Ogemaw, Roscommon, Saginaw, Arenac); West Central (Lake, Oceana, Mecosta); Southwest (Berrien, Calhoun); Northern (Grand Traverse, Mackinac, Cheboygan). The figures that were used were annually adjusted daily traffic counts for 1985 (Spotts, 1986). Travel volume was calculated only for the months that the crops mentioned in the interest questionnaire were available (excluding processed non-dairy as these products are available year round).

The produce dates were obtained from the farm-fresh produce availability calendar in the Country Carousel (Michigan Department of Agriculture, 1986d). The product availability season stretches from asparagus in May to cauliflower in November, a seven month season (214 days). However, instead of calculating the potentials for all crops by the 214 day crop availability season, individual crop availability figures were used. This also serves to prevent the inflation of the market potentials beyond realistic figures; as most crops, with the exception of a few fruits e.g.,(apples, which can be stored for extended periods) and processed products, would not be available for the entire crop availability season. To derive the figures for the regions annual adjusted traffic counts, were used to derive the indictors of traffic volume. The following calculations

were performed:

1. The annual adjusted daily traffic counts for the counters all the major tourist regions were totaled. Totals were calculated for traffic counters along major travel routes in Northern, East Central, West Central and Southwestern regions. These calculations can be found in table 2. The process followed exactly the method used in calculating the statewide traffic counts for the upper bound of the statewide market potentials.

The formula used to calculate the number of travelers in Michigan regions is:

An example of the use of this formula follows for the Northern region is:

$$A \times B \times C = D$$

$$30{,}674 \times 2 \times .44 = 26993.12 \text{ persons}$$

Where:

A = Regional Adjusted Daily Traffic Counts

B = National Average Vehicle Occupancy Factor (2)

C = National Percentage of Non-Commuters Factor (.44)

D = Number of Travellers in a Region per day

To add further clarity to the number of travellers in a specific region, use was made of the crop availability data provided by the Michigan Department of Agriculture's Country Carousel (1986). Data were available on the average length of crop availability for the majority of the products that travelers expressed an interest in purchasing on future trips. However, crop availability figures were not available for the Upper Peninsula which is marginally included in the study area with the inclusion of interviews at St. Ignace. The crop availability figures are averages developed over 25 years of crop recording data and can be regarded as accurate measurements. Some of the crop availabilities may also depend upon the arrival of the first frost, which may have considerable effect on the length that the crops are available. The date for the first frost was set as October 1, as this is consistent with the Crop Reporting Service data and the Michigan Department of Agriculture recommendations for the arrival of the first frost. The regional traveler figures for a specific crop (i.e., strawberries) which has a 25 day crop availability figure for the Northern region will become:

$$D \times 25 = E$$

26993.12 persons x 25 days of availability = 674,828 persons

Where E will represent the number of travelers comprising the total market for the sale of strawberries in the Northern region.

It follows logically that the market potential for strawberries in the northern region is:

E x % of travelers in region who expressed an interest in buying strawberries.

In the case of the northern study region, 45 percent of the respondents indicated that they were interested in purchasing strawberries on the present or future trips.

Therefore, the market potential for strawberries will then be:

674828 x .45 = 30,3673 persons

The use of the crop availability data allows the development of potential market figures by crop and by region. This lends greater depth to the analysis of the regional potentials.

Results of Objective 1.b.

The results of objective 1 b., are tabulated in Table 2. Results for this objective will be dealt with at two levels: (1) the overall market potentials across the regions for all products and (2) regional differences for notable products.

Market Potentials Across Regions.

Once again fruit dominated the market potentials for all the regions vis-a-vis other products. Apples and black cherries dominated the fruit categories with the highest expressed interest and correspondingly the highest market potentials. However, there were individual products such as peaches in the South West and strawberries in the West Central region that had higher market potentials than other regions. This again may be the result of products that were in season at the time of interviewing, as was the case with peaches in the South West region. Across regions the only other product that held a significant position was corn with an expressed interest ranging between 43 to 65 percent.

Dairy products exhibited a generally high market potential across regions with between 15 and 55 percent

interest being expressed in those products. This is noticeably higher across regions than for the same category in the statewide market potentials. Vegetables with a few regional exceptions such as broccoli, potatoes and lettuce did not generate high market potentials. These low potentials may again have some bearing on the seasonability of some of the produce that was listed in the questionnaire. The low levels of interest may have actually been indicators of some real differences in demand. Quite possibly travellers were not interested in the products listed.

The processed products also showed a generally good market potential of at least 30 percent and upward of expressed interest. The level of expressed interest in cider was interesting to note as the interviews were conducted prior to the fall cider season. A consistent level of interest was shown in wine across the regions which was not reflected in the statewide market potentials.

Fish both smoked and fresh, as well as honey had reasonably high market potentials across the regions. Little interest was shown in the purchase of herbs or mint with interest ranging between 2 and 6 percent. In terms of services, winery tours were the most consistent across regions with little interest being shown in product processing and forestry plants tours. Some interest was

shown in rural bed-and-breakfasts. Flowers and plants showed the least potential for sales (between 4 and 14 percent) with the regional exception of cut flowers in the South West which had an expressed interest of 22 percent.

Market Potentials Between Regions

This discussion of the results will be detailed a little differently from the previous discussion in that product categories will be analyzed separately instead of being viewed as a collective unit across all regions. The null hypothesis of equal means for the regions was assumed to provide some basis for testing the whether the observed differences between the regions was possibly the result of sampling error. Analysis of variance statistics were calculated for all the product groups in the study regions at the .05 decision level. Groups of products (fruits, vegetables, etc.) were then compared across regions to test for significant differences in sample means. The results appear in table 3.

The null hypothesis of equal means was rejected for three of the product categories; fruit, flowers and plants, and vegetables. The null hypothesis could not be rejected for the categories of; dairy, processed (non-dairy), and

services. Kruskal-Wallis tests were run for those product categories with products of 5 and less to determine wether they came from identical populations. The test results were significant for only the dairy and processed categories.

Interest was greatest for all fruits listed in the West Central region than in any of the other regions. There was little difference between the levels of interest expressed in the other regions, with the East Central region having the lowest expressed interest in fruit. The South Western region had the the highest expressed interest in flowers and plants with the remaining regions showing little expressed interest. The West Central region showed the highest expressed interest in dairy products, with the Northern and East central regions showing little difference in the level of interest. The South West region showed the least interest in dairy products. The West Central region showed the highest expressed interest in vegetables with little apparent difference being shown in the Norther and Southwestern regions. The lowest interest in vegetables was shown by the East central region. The Northern region showed the greatest interest in processed products, with the West Central region following close behind. The Southwestern region showed the lowest interest in processed products. The greatest interest in the "other products" category was shown in the West Central, which was closely followed by the South

West. The lowest interest for "other products" was in the Northern region. Interest was greatest for services in the West Central region, with little difference being shown between the Northern and Southwestern regions.

The remainder of the results for this section were developed from the visual inspection of Table 4., which expresses the regional market potentials for products. This enriches the ANOVA analysis of Table 3., by making comparisons across regions as well as by specific products.

While fruit once again had a generally high market potential in comparison to other products or services, there were some notable regional variations in expressed interest. The greatest interest for apples was in the West Central region which is not a dominant producer of apples or stone fruits. There was also a reasonable degree of interest in blueberries throughout the regions, with the West Central region showing the greatest level of interest. The borders of the West Central Region tend to fall within the boundaries of the major blueberry production area in the state. Sweet cherries were uniform across regions in terms of interest shown and would appear to have good potential markets for their sale. Red-Tart cherries, however, do not show any great potential for sales in comparison to sweet cherries across the regions.

Table 3

Analysis of variance test

for regional differences among product categories

Product	n	Degrees of Freedom among	Degrees of Freedom within	F - Ratio	Accept or Reject H_0
Fruit	14	3	52	3.36	R
Flowers & Plants	5	3	16	8.78	R
Dairy	4	3	12	1.59	A
Vegetables	20	3	76	4.02	R
Processed (non-dairy)	5	3	16	1.57	A
Other	7	3	24	.48	A
Services	7	3	24	1.63	A

Peaches appear to have a good market potential that is substantially higher in the peach growing region of the South West than in other regions. Raspberries appear to have good market potentials in all the regions except the East Central one. Strawberries also appear to have good market potential which is again highest in the West Central region. The West central region appears to dominate all the other regions for the most interest shown in specific fruit crops with only apricots and red-tart cherries having expressed interests below 28 percent.

Flowers and plants had generally low market potentials averaging between 4 and 10 percent expressed interest. There appears to be little in the way of market potentials in the North, West Central and East Central regions. However, the South West shows a significant increase in interest with the greatest gain being shown in the cut flower potential market with an expressed interest of 22 percent. This may be due in part to a sampling bias as one of the survey sites was at the Kalamazoo Flower Festival which may have jogged respondents professed interest somewhat.

Interest in dairy products appeared to be consistent across regions with cheese and eggs dominating and cottage cheese bringing up the rear. However, the West Central region again dominated the level of expressed interest in

product purchases with between 50 and 55 percent for three of four products.

Vegetables were the largest category of products about which travellers were queried. With the exception of corn, which made a strong showing across regions, few products appear to dominate in their market potentials. Lettuce, carrots and cauliflower appear to have reasonable market potentials across the regions. The West Central region again appears to dominate at the level of expressed interest with good market potentials of 35 percent and upwards for green beans, broccoli, carrots, lettuce and potatoes. There are also a number of vegetables in the region such as zucchini, green peppers and cucumbers which show lower market potentials of between 27 and 29 percent expressed interest. These combined with the strong showing of the other products indicates the South West region to be a region exhibiting good market potential.

In the processed category, no single product appears to be dominant within a region as potentials are generally good for all products with little apparent difference being shown across regions as well.

Table 4

Potential Interest By Regions

Products	crop availability days	North[a] Exp.Int.[c] (Percent)	North[a] Market Potential[d] (Persons)	East Central Exp.Int. (Percent)	East Central Market Potential (Persons)	West Central Exp.Int.[c] (Percent)	West Central Market Potential[d] (Persons)	South West Exp.Int. (Percent)	South West Market Potential (Persons)
Fruit									
Apples	78	39	821131	34	1035793	69	413988	46	1254609
Apricots	34	24	220264	21	278867	14	36614	18	213997
Blueberries	64	42	725575	42	1049853	62	305222	27	604226
Cantaloupe	61	37	609235	25	595620	46	215840	37	789201
Cherries	31	56	468601	56	678030	67	159765	42	455268
Cherries Red-tart	15	17	68832	21	123030	23	26538	22	115390
Melons (Water)	61	30	493974	23	547970	48	225224	16	341276
Melons (Other)	61	21	345782	18	428846	28	131381	17	362606
Nectarines	15	34	137665	22	128888	28	32307	36	188821
Peaches	51	45	619492	29	577654	57	223609	62	1105650
Plums	43	28	324997	16	268712	38	125689	20	300714
Raspberries	63	44	748249	26	639754	53	256839	45	991309
Strawberries	25	45	303673	44	429627	65	124996	37	323443
Tomatoes	186	22	1104558	34	2469967	47	672442	36	2341377
Flowers and Plants									
Bedding Plants	61	4	65863	2	47650	8	37537	14	298616
Flowers (Cut)	306	4	330396	7	836602	8	188302	22	2353965
Flowers (Fresh)	92	4	99335	6	215595	7	49537	14	450372
Shrubs	306	5	412995	5	597573	7	164764	9	962986
Trees	92	4	99335	9	323392	6	42460	10	321695
Dairy Products									
Cottage Cheese	365	15	1477873	15	2138373	30	842283	14	1786803
Cheese	365	38	3743946	44	6272561	50	1403805	23	2935463
Eggs	365	42	4138045	49	6985352	50	1403805	45	5743297
Milk	365	31	3054272	23	3278839	55	1544185	26	3318349

a For the purpose of this study the regions were composed of the following counties; North (Leelanau, Grand Traverse, Mackinac), East Central (Clare, Saginaw Iosco), West Central (Muskegon, Mason), South West (Berrien, Kalamazoo).

b Crop Availability Days - number of days any specific crop is available during the growing season.

c Percentage of Interest shown by respondents in purchasing a specific product the present or future trips.

d Market potential for the sale of apples in the North region expressed in persons i.e. potential market is 821,131 persons.

Table 4 contd.

Products	crop availability days	North[a] Exp. Int.[c] (Percent)	North[a] Market Potential[d] (Persons)	East Central Exp. Int. (Percent)	East Central Market Potential (Persons)	West Central Exp.Int.[c] (Percent)	West Central Market Potential[d] (Persons)	South West Exp.Int. (Percent)	South West Market Potential (Persons)
Vegetables									
Beans (Green)	92	14	347671	13	467122	35	247685	14	467122
Beans (Other)	92	9	223503	15	538987	11	77844	7	225186
Broccoli	123	24	796837	21	1008843	40	378450	24	1032220
Carrots	78	29	610584	23	700683	39	233993	31	845497
Cauliflower	153	34	1404182	22	1314660	36	423680	14	748989
Corn	81	56	1224408	43	1360357	53	330221	65	1841002
Cucumbers	123	31	1029248	26	1249044	29	274376	23	989211
Egg Plant	123	32	1062449	20	960803	10	94613	19	817174
Lettuce	90	30	728814	27	949086	41	283838	46	1447626
Peppers (Green)	92	15	372505	15	538987	27	191071	17	546881
Peppers (Other)	92	15	372505	13	467122	15	106151	5	160847
Potatoes	77	26	540402	20	601478	45	266531	27	726960
Pumpkin	31	17	142254	16	193723	17	40537	17	184275
Rhubarb	214	15	866479	11	919803	15	246919	15	1122434
Spinach	123	16	531225	9	432361	16	151380	11	473101
Squash	77	17	353340	13	390961	17	100689	17	457715
Sugar Beets	92	13	322838	8	287460	7	49537	11	353864
Turnips	92	7	173836	2	71865	3	21230	8	257356
Water Cress	90	7	170057	2	70303	6	41537	7	220291
Zucchini	92	8	198669	13	467122	29	205225	13	418203
Processed									
Cider	62	36	602486	26	629599	46	219378	33	715421
Fruit Juice	365	43	4236570	20	2851164	35	982663	34	4339380
Jams, Jellies Preserves	365	47	4630670	28	3991629	38	1066891	37	4722266
Maple Syrup	365	36	3546896	37	5274653	29	814207	34	4339380
Wine	365	31	3054272	40	5702328	34	954587	31	3956493
Other Products									
Firewood	365	12	1182299	11	335109	39	1094968	2	255258
Fish (Smoked)	92	31	769844	30	913935	26	183995	27	868575
Fish (Fresh)	92	20	496673	31	944399	25	176918	24	772067
Honey	365	34	3349846	20	609290	27	758054	42	5360410
Mushrooms (Domestic)	365	7	689674	12	365574	21	589598	10	1276288
Mint	90	5	121469	6	182787	6	41537	6	188821
Other Herbs	90	3	72881	2	60929	5	34614	6	188821
Services									
Farm Tours		7	1890	10	304645	12	923	7	2448
Winery Tours		31	8368	26	792077	30	2308	26	9091
Vacation Farms		21	5669	13	396038	16	1231	22	7693
Rural Bed & Breakfast		16	4319	10	304645	21	1615	18	6294
Product Processing		8	2159	6	182787	18	1385	7	2448
Forestry Products		5	1350	8	243716	17	1308	5	1748
Forestry Museums		8	2159	7	213251	24	1846	3	1049

The "other products" category provided few startling revelations with fresh and smoked fish dominating in the North and East Central region both of which possess extensive fishing activities.

One standout is that of firewood in the West Central region. This figure is so dominant in comparison to the rest of its category that it requires some explanation. Part of the reason for the high expressed interest results from the fact that the majority of interviews were conducted in two state parks. It may well be that the state park users perceived a greater need and therefore an interest in firewood than respondents in the other regions where the study population was more heterogeneous.

The services category provides low market potentials for product processing plant tours, forestry plant tours and forestry museums. While rural bed-and-breakfasts and vacation farms appear to have more appeal in the North, West Central and South West. Winery tours are favoured in all four regions. However, the majority of Michigan wineries are located in the south west quadrant. This may pose a marketing problem which in some way has been overcome by retail winery outlets which are spread throughout the state.

Estimating Regional Differences Between Actual and Potential Markets

Objective 2., deals with the differences that may exist between the size of the interested market and the purchasing (penetrated) market. Objective 2., states:

To determine whether any significant difference exists between the potential market (those having interest, access, and the means to purchase agricultural products) and the penetrated market (those actually buying agricultural products) within the study regions of objective 1b.

H_0: There is no significant difference between the level of expressed interest and the level of actual product purchases within the state.

To determine if there is a significant difference between the potential and penetrated markets certain information was required. First, information on the expressed interest (potential market) of travellers to buy agricultural products is required see table 3.

Second, information on the actual product purchases of travellers in the study regions of Michigan is needed. These

data define the penetrated market (those who purchased agricultural products), and were available from both Propst et al. (1984) and this study. Both on-site studies contained questions asking the respondents about their product purchases on the present trip. By recoding the product purchase data from Propst et al. (1984) to conform to the same regions as those of this study's regions, two complete sets of product purchase data were obtained. However, similar products were aggregated within study regions to provide a single measure of a product purchase. If a product was not purchased in the summer 1984 study but was purchased in the summer 1985 study that product category was dropped for the region. Only products that were purchased in at least three of the study regions were used resulting in only 23 completed product categories.

Data were combined where possible to reflect the purchases of both Propst et al. (1984) and the present study's respondents. In cases where this was not possible, due to the unavailability of data for both years in a specific county, only data for one year was used. The difference in size between the potential and penetrated markets was calculated with the following formula:

Difference = Regional Potential % - Regional Purchases %

Differences between the potential and penetrated markets reflect the disparity between the levels of product interest and the actual amount of products bought. These differences were compared across regions (table 5) to indicate whether any one region had an advantage vis-a-vis another with respect to specific product sales.

The differences give a more useful measure of the potential for various products than just the percentage expressed interest. For example at first glance, the potential for apples, say, looks high (34% of the interviewees in the East Central region expressed an interest in buying apples). However, 18 percent currently buy apples, so the difference, 19 percent allows less in the way of growth potential than in the West central region where the difference is 37 percent (69%-32%).

Results for Objective 2

It is readily apparent when considering Table 5., that there is a discrepancy for almost all products between the penetrated and potential markets. In some cases the difference is quite large. For example, none of the respondents in the East central region bought blueberries, yet 42 percent said they had an interest in purchasing the

product.

It is interesting to note that for apples in the South West region there is a negative discrepancy where the penetrated market exceeds the potential market. One of the possible reasons for this reversal is that the surveys were administered in the region during the height of the apple season, and more respondents may have purchased apples than would normally. Cider shows a large potential for sales in all the regions. However, the penetrated market for cider may have been higher had cider been in season during the survey period. Seasonality likely has a marked effect on many products in the study as sales may have been higher had they been in season.

It would appear from the data that there is substantial potential for most products in all the regions. This information may then be used to guide business decisions for the future in terms of new products to try or services to provide. For example it would probably not be a wise decision to invest in apple production with the express purpose of reaching the travelling market in the South West region.

Table 5

Comparisons of regional market potentials to levels of regional differences

(Potential vs. Penetrated Markets)

Products	North (205) (Percent)			East Central (158) (Percent)			West Central[a] (133)[b] (Percent)			South West (120) (Percent)		
	Purch.	Int.	diff.	Purch.	Int.	diff.	Purch.	Int.	diff.	Purch.	Int.	diff.
apples	5[c]	39[d]	(34)[e]	18	34	(16)	32[c]	69[d]	(37)	56	46	(0)
bedplant	*	4	(4)	1	2	(1)	*	8	(8)	2	27	(22)
blueberry	*	42	(42)	*	42	(42)	7	62	(55)	9	26	(17)
other beans	2	9	(7)	1	15	(14)	3	11	(8)	8	7	(1)
green beans	1	14	(13)	1	13	(12)	*	35	(35)	*	14	(14)
cider	2	36	(34)	*	26	(26)	6	46	(40)	*	33	(33)
corn	7	56	(49)	6	43	(37)	14	53	(39)	25	65	(40)
cherries	28	56	(37)	14	56	(42)	43	67	(24)	*	42	(42)
cucumber	*	31	(31)	2	26	(24)	2	29	(27)	3	23	(20)
cheese	2	38	(36)	1	44	(43)	4	50	(46)	*	23	(23)
fresh fish	3	20	(17)	2	31	(29)	11	25	(14)	2	24	(22)
smoked fish	6	31	(25)	4	30	(26)	*	26	(26)	*	27	(27)
green pepper	*	15	(15)	*	15	(15)	1	27	(26)	3	17	(14)
honey	*	34	(34)	*	20	(20)	*	27	(27)	1	42	(41)
juice	1	43	(42)	1	20	(19)	*	35	(35)	1	34	(33)
lettuce	1	30	(29)	1	27	(26)	*	41	(41)	4	46	(42)
melon	1	21	(20)	4	18	(14)	6	28	(22)	8	17	(9)
maple syrup	1	36	(35)	1	37	(36)	8	29	(21)	1	34	(33)
peach	*	45	(45)	3	29	(26)	6	57	(57)	28	62	(34)
potatoes	1	26	(25)	1	20	(19)	5	45	(40)	3	27	(24)
raspberries	2	44	(42)	2	26	(24)	*	53	(53)	1	45	(44)
strawberries	2	45	(43)	10	44	(34)	10	65	(55)	*	37	(37)
tomatoes	3	22	(19)	3	34	(31)	5	47	(42)	7	36	(29)
wine	3	31	(28)	1	40	(39)	4	34	(30)	2	31	(29)

a For the purpose of this study, the regions were composed of the following counties; West Central (Mason, Muskegon); East Central (Saginaw, Clare, Iosco);South West (Berrien, Kalamazoo); North (Leelanaw, Grand Traverse, Mackinac).

b Number of interviewees.

c Percentages based on number of respondents i.e. 32% of 133 travelers in the West Central region bought apples. This represents the penetrated market for apples in the West Central region.

d Similarly 69% of 133 travelers in the West Central region said they were interested in buying apples on future trips, and represents the potential market.

e Difference between % expressed interest and % purchasing product i.e. difference of 10% between potential and penetrated market for apples in the South West Region.

* less than 1%

A series of ANOVA's were carried out comparing the penetrated and potential markets for product categories at the .05 confidence interval level. The null hypothesis of equal means was assumed for the differences between the penetrated and potential markets. ANOVA tests were only carried out on the fruit, vegetables, processed and "other products" categories. The remaining product categories were comprised of a single data point which made them impossible to analyze. Kruskall-Wallis tests were run for all the categories to determine wether they were drawn from similar populations. The Kruskall-Wallis tests proved to be significant for three of the four product categories indicating that they were drawn from similar populations. The one exception was the fruit product category which was not significant. The ANOVA results for the differences between the penetrated and potential markets follow in Table 6.

Table 6

Analysis of variance

test for differences between penetrated and potential markets

Product	n	Degrees of Freedom Among	Within	F-Ratio	Accept or Reject H_0:
Fruit	7	3	24	3.09	R
Vegetable	6	3	15	.59	A
Processed (non-dairy)	4	3	12	.37	A
Other (products)	3	3	8	1.83	A

A caveat needs to be sounded at this point when considering some of the large discrepancies between the penetrated and the potential markets. It should be remembered that the potential market represents the second largest level of agglomeration next to the total market. The capture or attainment of market potential is beyond the scope of any organization unless it operates as a total monopoly with no competititon. This is far from true for farmers and other agricultural producers who generally operate under severe constraints of competition. So while the discrepancies may look large and hint at unlimited potentials for sales, the target market serviced by the enterprise will always be considerably smaller.

CHAPTER V

DISCUSSION

The focus of this sub-section will be to determine whether the study objectives were met, and the extent to which they were met. Each objective and its results will be dealt with separately in the light of the data collected and the analysis carried out to meet the specific objective.

Statewide Potential

The purpose of this objective was to measure the statewide market potentials for specific products. This objective was achieved to the degree that a measure of the market potential was calculated. However, due to the difficulty of obtaining accurate measures of travellers this measure should only be used as a "ball park" estimate of the total state market potential.

The greatest potential for the direct sale of agricultural products was shown by fruit. Almost all types

of fruit showed some level of potential, with several products dominating the group. These products are apples, sweet cherries and blueberries. Michigan is relatively well placed to supply most of the potential market requirement for fruit products. For example, Michigan leads the nation in the production of red-tart cherries. This crop, however, does not have the same market potential among travellers as sweet cherries. The state sweet cherry crop in 1986 stood at a reasonable 62 million pounds with a value of approximately $13.5 million (Michigan Department of Agriculture, 1986b). The sheer size of this crop, of which about 90 percent is sold as fresh produce should prove adequate to meet the future needs of travellers.

The state is also well positioned with respect to satisfying traveler interest for apples, blueberries and peaches. While Michigan does not lead the nation in any of these three products, substantial acreage are devoted to their cultivation and Michigan is one of the nation's leading suppliers. Apples alone have 48,000 acres devoted to their production with an approximate value of $61 million in 1986 (Michigan Department of Agriculture, 1986b). Peaches have considerably less acreage devoted to their production However, the 1986 season peach crop was still valued at a respectable $7.7 million dollars. No figures are available for the estimated worth of the 1986 blueberry crop. However,

3,259 acres are given over to the production of tame blueberries in the three principal counties in which they are grown. Michigan also has an ample supply of strawberries ranking fifth in the nation with a little over 2,800 acres planted to strawberries annually.

The low market potentials for flowers and plants is perplexing from a supply point of view as Michigan is a national leader in many horticultural crops. It is ironic that while Michigan leads the nation in the production of bedding plants, and is ranked second in the production of gladioli and lilies, there is little expressed interest in any of these products. There appears to be some potential for a lucrative market since Michigan appears to have an unlimited supply of horticultural and floricultural products. Those operations who are able to overcome the barriers of a lack of interest may be able to realize some extra sales. The lack of expressed interest may be due possibly to a lack of knowledge by travellers and consumers and could be rectified by concentrated marketing and advertising strategies.

Dairy production in Michigan is presently in the doldrums with inroads being made into the dairy herds by the Federal Government's Dairy Herd Reduction scheme. Michigan still places about sixth in the nation in milk production

but there is no certainty as to how long the state can hold this position. However, there should be no problem however, in the state being able to meet traveler's interests in purchasing milk. This market is relatively underdeveloped as few dairy operations sell directly to travellers. This potential market segment may be difficult to serve due in part to increased health and service standards that will be required of sellers who wish to market their produce directly to travellers. The remaining three categories cheese, cottage cheese and eggs may already be served by supermarkets and grocery store chains. However, the travellers interviewed in Propst and Combrink (1985) indicated that they were interested in these product categories. There always exists the possibility of conducting tours at these operations and theses combined with limited sales of some dairy products may provide a market to pursue.

Michigan is well placed to supply the needs of the potential market for all the vegetables that were on the questionnaire. Corn and more specifically sweet corn would appear to have the greatest market potential of all the vegetables. However, sweet corn is also one of the most widely grown field crops in Michigan with 13,300 acres planted to sweet corn in 1968 (Michigan Department of Agriculture, 1986b). The sale of sweet corn to travelers may

not realize as high a yield as the market potentials show due to competition from numerous growers, as well as out of state competition. Traditionally sweet corn and other field crops are sold at the roadside from market stalls or out of trucks beds creating a great deal of competition for the relatively short time period that the crop is available for sale.

Some other field crops which have reasonable market potentials are carrots, lettuce and potatoes which may also need some unique or specialized marketing focus to capture a greater share of the travelling market segment. The remainder of the interest in other vegetables may well be supplied by the existing direct marketing enterprises. It is debatable whether a six percent expressed interest in watercress can be parlayed into any substantial form of market offering by a producer or marketer. Some of the products showing low potentials may still be able to provide marketers with some product diversity and uniqueness thus enabling them to enlarge the product mix that they have available for sale and position specific products in the minds of travellers.

There appears to be a relatively strong interest expressed in processed products. These products seem to show some of the greatest potential for extra sales as they tend

to embody some of the concepts of successful ag/tourism: a product plus an experience (Propst et al., 1984; Propst and Combrink, 1986). Three of these products wine, maple syrup and apple cider provide the traveler with the opportunity to engage in a meaningful experience with the product in most of the processing stages prior to purchase. This is the type of authenticity often desired by travelers making purchases and destination decisions (Pizam and Pokela, 1975). The potential to capture increased sales in this area must still be tempered with the reality of competition. This is seen by the predominance of cider mills in the apple belt of Berrien County. However, increased knowledge of target markets and a willingness to provide an experience along with product can lead to increased sales for these enterprises.

The category of "other products" provide some interesting possibilities in terms of marketing strategies, as well as some scope to differentiate the product mix being sold. There appears to be a high level of interest expressed in honey, yet this product is already well marketed through the normal product channels. However, honey production may lend itself to some specialized marketing involving the purchaser in some type of educational experience while purchasing the product. Both smoked and fresh fish appear to have good market potentials as well. However, the major fish

producing areas are coastal, with their marketing facilities usually coastal as well. This does not place the producers of these products in a good position to market their wares to travellers outside of the coastal region. It may prove worthwhile to market the product in the hinterland as well if storage and transportation costs are not prohibitive.

There is some interest in taking part in what is essentially the education component of ag/tourism. Winery tours are popular and this correlates to the interest that was expressed in the purchase of wine. The only other service areas that show any potential are rural bed and breakfasts and vacation farms. Interest in these two services may be relatively low due to a lack of knowledge on the part of the travelling population as to their availability. Vacation farms are a more difficult service to judge the potential for as their are very few working vacation farms to study in Michigan. However, Pizam et al., (1981) found that 15 percent of the respondents to their study would like to spend a vacation on a farm. There is no way to tell whether this market has a potential as high as is indicated.

Regional Potential

The purpose of this objective was to calculate the regional potential markets for the listed products. These regional potentials are possibly the most important as most enterprises involved in pursuing non-local travellers find themselves operating at the regional level. All the ag/tourism enterprises in the state operate in one or more of the regions so an analysis at this level will provide them with a salient point of reference to the expressed interest for the products that they offer. Objective 1.b., was met to the extent that it provides measure of both regional and interegional market potentials.

Once again fruit was dominant in the potential market estimations, with the highest market potentials being shown for sweet cherries. This is consistent with the statewide market potential measures. There appears once again to be a consistent correlation between high expressed interest and high product visibility within regions. This point is borne out by the fact that there was 62 percent expressed interest in apples in the West Central region, which includes two counties with extremely high levels of apple production. Also there was a 56 percent interest in cherries in the Northern region, the major cherry production area in

Michigan.

However, the West Central region had the highest expressed interest at 67 percent for sweet cherries. This potential may also be the result of crop availability, as the West Central region accounts for approximately 23 percent of the state's cherry crop. The East Central region appears to have the greatest market potential for cherries: a 56 percent level of expressed interest with little cherry production occurring within its boundaries. Some economic advantage to sellers may be realized by shipping cherries into the region for resale to travellers. However, use of this tactic may require some extra advertising expense for retailers who will have to overcome the barrier created by the perception that the region is not usually considered a part of the fruit belt. Furthermore, those who currently produce cherries in this region may be in an advantageous position to capture a large share of the travelling market.

Blueberries appear to have their greatest market potential in the West Central region, the major blueberry production zone. falls within this region. Both the East Central and Northern region show some potential for sales of blueberries and these may prove to be areas into which sales should be expanded. However, blueberries will have to be transported and marketed in these regions and this may prove

to be prohibitively expensive.

The West Central region appears to have the greatest potential for the sale of most agricultural products to travellers. It must be noted, however, that the West Central region, while having high potentials for most products, also happens to be a major area of fruit production. This may not necessarily translate into lower market potentials for various products, but indicates the increased probability of competition and smaller market shares for individual enterprises. Interest in fruit appears to be lowest overall in the Northern region, which may be compounded by the fact that the Northern region is not perceived as a fruit producing area with the exception of tart and sweet cherries. Nonetheless, the Northern region is one of the most popular travel destinations in the state, and the potential for sales to travellers cannot be overlooked.

There appears to be little in the way of market potential for the sale of flowers and plants in any of the regions. The only region showing some potential is the South West, which happens to be the major floricultural and bedding plant production area in the nation. The large interest in cut flowers in the South West, in comparison to all other regions, may have been compounded by interviews carried out with respondents during the Kalamazoo Flower

Festival. A possible cause for this overall low potential market may be the difficulty involved in transporting the flowers and plants while on a trip. Another factor influencing low potential markets may be wholesale nature of the cut flower and bedding plant industry, with plants produced on consignment for markets, resulting in a lack of the product in the market place. There may be some potential for the creation of some ag/tourism enterprises with an emphasis on nursery tours combined with flower and bedding plant sales, especially if traveler awareness of the availability of such products is increased.

With the exception of cottage cheese in which there was little expressed interest, eggs, cheese and milk all appear to have good market potentials. Milk and cheese production tends to be centered close to the urban areas of the middle of the state with little dairying activity in the Northern region. In addition, there is substantial dairy production in the Upper Peninsula. Some enterprises that specialize in the retail sale of native cheeses such as Pinconning and Amish. These types of sales enterprises are specialized with respect to their clientele and may provide additional opportunities when combined with other products, such as wine.

Vegetables do not generally show high market potentials

with the exception of sweet corn. The Northern region appears to have the best potential for vegetables overall with reasonable levels of interest being expressed in broccoli, carrots, cucumbers and potatoes. The Northern region itself is not well known as a vegetable producing region with the possible exception of the irrigated vegetable growers in Grand Traverse County. The West Central region also appears to have reasonable market potentials for most vegetables. In comparison to the Northern region, the West Central is well placed to supply most of the products of interest within its region.

The West Central region again holds a slight edge over the other regions with respect to processed products. The interest in all products appears to be high, with apple cider topping the list. The least variation between the same products within regions is shown in the processed product category. This is an indication of the high interest shown in processed (nondairy) products and the potential for their sale. Perhaps the greatest potential for product sales lies with the processed products. My reasons are two fold. First, most are available year round and present few storage problems (apple cider being the exception). Second, they provide the opportunity for producers to combine a fun, educational experience along with their product and create a unique marketing niche for themselves.

The "other products" category provided some interesting comparisons across regions. The most glaring is that of the high interest in firewood expressed in the West Central region which was explained in the results section. The high interest in firewood was the result of data collection carried out almost exclusively in two state parks, resulting in a sharply skewed demand for firewood. Both smoked and fresh fish proved to be products of interest in the Northern and East Central regions. This tends to fit the pattern of product knowledge in a region that is perceived to be home to the product. This is specifically so for the Northern region where respondents identified smoked and fresh fish with the community of Leland, in Leelanau County. There was relatively little interest expressed in honey, mushrooms (domestic), mint and other herbs across the regions. These products may have difficulty in supporting businesses in themselves, yet may provide the needed diversity to expand the overall product mix of some operations.

There is little difference between regions with respect to the services that travellers would be interested in purchasing or experiencing. Winery tours were popular choices but, with a few exceptions in Grand Traverse and Leelanau counties, all the wine making operations in the state are centered in the South West region. The wineries have overcome this location factor by establishing tasting

rooms and wine cellars at selected tourist destinations around the state. The wine industry has seen the need to take its product to the public, as well as ensuring that their products have relatively high profiles. Vacation farms and rural bed-and-breakfasts may prove to be hidden areas of market potential. However, determining the actual interest in purchasing these services will need to be a whole new field of study in itself.

In closing there appear to be unique areas of market potential around the sate with respect to specific crops. Of all the regions, the West Central appears to be the outstanding region in terms of the high levels of expressed interest and correspondingly high potential markets. Yet all regions have more potential than is currently realized.

Potential versus Penetrated Markets

The major purpose of objective 2 was to determine whether there was a significant difference between the size of the potential (interested) market and the penetrated (purchasing) market. The differences between potential and penetrated markets was statistically significant for 19 of

23 products.

The greatest discrepancy between the potential and penetrated markets exists for peaches in the West central region. However, blueberries, raspberries and strawberries also have a large discrepancy in the West Central region. The discrepancy in the berry crops may have some importance to enterprises in the region who currently service that section of the market with areas large discrepancies indicating possible market potentials. The discrepancies are relatively stable across the regions with no single region standing out with regards to any specific product. However, the least discrepancy for a product with a large expressed interest involves apples in the South West where product purchases actually outstripped interest. This may have been due to the survey being conducted during the apple season.

This discrepancy provides further evidence of a market for the direct sale of agricultural products to travellers in Michigan and yields an indicator (difference between potential and penetrated) of the relative size of the market. This market however, will be tempered by competition from other producers, availability of the product for sale, and the continued interest of the traveling market segment in that particular market offer.

Barriers to Achieving Potential

The data needed to answer Obj. 3., were reported in Propst and Combrink (1986). The data from the relevant section of the report will be summarized here. Kotler (1984) notes that the size of the potential market is further reduced by income and access. Therefore, he defines the "available" market as a subset of the potential market that has interest in and income for as well as access to a particular market offer. We already know that the interest for direct agricultural product purchases is there. In terms of the available market income is likely to have little effect on reducing the size of the potential market. There are sufficient studies of Michigan travellers and tourists to indicate that they generally posses higher than average incomes (Deale 1983, Fridgen et al. 1983). Therefore, the key factor creating a barrier for ag/tourism businesses is access.

Access is not limited to geographical location but rather has much to do with knowledge, awareness and image. Propst and Combrink (1986) identified 13 barriers that travellers identified as reducing their willingness to purchase agricultural products. These barriers are listed in Table 7., and include barriers of knowledge, awareness and

image. All barriers may be overcome to a great extent by effective communication about the product by individual businesses and units of state and local government. This effective communication requires (1) providing accurate product information (2) two-way flow of information, and (3) injecting the information into sources that travellers use for decision making concerning their trips.

The results in Table 7 indicate the types of information that should be provided to travelers concerning farm products.

First, businesses and units of government should let travellers know that farm outlets provide more than just produce. They provide an experience-- the opportunity to buy fresh, locally grown produce in an outdoor environment. Secondly, businesses and tourism operators must inform travelers that direct prices are comparable to grocery store prices. Finally, travellers must be aware that farm products are available during their trips, the types of products available and where to buy them.

Table 7

Barriers to purchasing Michigan agricultural products by location of interview.[a] (Summer, 1985; 616 total respondents)

Barriers	Frankenmuth[b] (64)[b]	Clare TIC (33)	Tawas (61)	Hoffmaster (57)	Ludington (48)	Mt./Wis. (28)	Traverse City (74)[b]	Mackinac (96)	Leland (35)	Kalamazoo (73)	Berrien Springs (47)	Total
	(Percent)											
Having to buy in too large a quantity	27[c]	15	21	32	13	21	15	7	6	19	4	16
No room in the vehicle	38	55	39	19	15	46	39	39	49	32	40	36
Products will spoil before I reach home	47	58	36	21	29	43	46	14	43	36	34	38
Prices are too high	44	39	23	21	27	11	32	37	46	41	43	34
Can get all I need near home	20	21	31	25	31	21	15	28	37	32	40	27
Buy these products at grocery stores	42	24	44	26	25	43	45	70	77	55	70	49
Didn't know these products were available	6	9	30	4	2	11	19	42	54	37	21	23
Don't know where to buy these products	11	12	23	23	23	25	16	29	40	21	21	22
Don't know when to buy these products	3	9	10	11	15	0	18	32	14	21	17	16
Products not in season	28	12	34	46	40	25	53	30	17	26	28	33
Unsure of product quality	13	6	13	5	8	7	11	7	11	10	4	9
Not enough time on this trip	11	6	3	2	13	4	3	3	3	4	2	5
Just not interested	5	0	5	0	4	0	7	0	0	0	1	2

[a] Location of interviews. Frankenmuth, Clare Travel and Information Center, Tawas State Park, P.J. Hoffmaster State Park, Ludington State Park, Michigan/Wisconsin Ferry Service, Traverse City Cherry Festival, Mackinac Island, Leland area, Kalamazoo Flower Festival, Berrien Springs Youth Fair and Horse Show.

[b] Number of travelers interviewed.

[c] Travelers could check more than one barrier, therefore, the totals do not sum to 100%; for example, 27% of the Frankenmuth respondents indicated that "Having to buy in too large of quantity" was a barrier.

The two way flow of information between buyer and seller is critical. It is not enough for farm outlet operators to simply provide information about their business and products. They also need to talk to their customers, constantly asking customers what they are interested in buying and where they are getting their information. The third element of effective communication injecting information into sources that travellers use, may require more planning and cooperation than the other methods. Word of mouth or informal communication has been identified as one of the most efficient means of getting information to travellers. Some of these word-of-mouth methods include: (1) attractive, accurate and current printed materials (2) providing a quality product, including friendly and knowledgeable employees; and (3) providing business information to community residents, travel information center personnel, lodging and campground employees, gas station attendants, and resturant workers. All these methods if practiced by businesses or tourist promotion agencies will help to create an awareness of the opportunities offered by ag/tourism and quite possibly greater sales.

Limitations

One limitation in this study is the estimation of the number of travellers and tourists who visit Michigan. The accuracy of the study will depend to a large degree upon the accuracy to which this number can be defined. In the case of this study the best available measures were used, with strict care being taken not to overestimate the findings.

The representativeness of the sample is also a limitation that may have a significant effect on the results of this study. Due to limited resources, interviews could only be carried out at selected tourism destinations in the state. Every effort was made to preserve the random sampling of the respondents to ensure the representativeness of the sample. However, nonprobability sampling procedures were used often. Therefore, sampling error could not be precisely defined or randomness assured. The fact that a majority of the sampling was obtained by nonprobability methods has implications for the generalizability of the research results. At best, the research results point out areas of potential purchase interest for travellers in 1985, but may not be generalizeable to the entire population over time.

The small sample size in some of the study units is a

third study limitation. This is especially noticeable in some of the spending data cases. For example, in Clare County, only 6 respondents out of 33 (5.4 percent of the summer 1985 sample), had bought agricultural products on their trip at that time. This is rather a small sample from which to develop generalizable results. For this reason, county data were aggregated into regional data.

The accuracy of the respondents recall may also be questioned in certain cases. Respondents may have difficulty in recalling the amounts spent on agricultural products. Furthermore, some respondents experienced difficulty in identifying the produce that they bought as coming from Michigan. There is even a possibility that some of the produce was bought in a grocery store or supermarket, even though we asked respondents to specify only those products bought outside of such establishments.

Unfortunately, no ag/tourism enterprises or studies have the luxury of a well developed methodology for estimating the size of the market area. A review of the economic geography and marketing literature shows that the question of market size has been adequately dealt with, mainly through the use of gravity models. Interested readers are directed to Reilly's (1929) seminal study of retail relationships.

Isard's (1956) study deals with the market area from a production region to market location standpoint, one that is commonplace in the agricultural economics literature. Little interest has been shown in the location of the consumer relative to the market offer. Couter (1979) however makes use of the market area planning concept for producers, when considering the acreage of produce to plant for pick-your-own operations. It is apparent when reviewing the literature that these measures of market areas and their populations assume static populations of potential customers. Enterprises concerned with offering a product to the size of travelling public are immediately faced with the uncertainty of the size travelling population and, therefore, the size of their potential clientele. This topic requires some specialized methodologies that have not been well researched or developed yet. In addition some consistent definitions of the terms "tourist" and "traveller" are needed.

A final limitation of this study is that the product interest question (potential market) was only asked during the summer, and interviews for both studies were essentially conducted in the summer. Travellers and tourists in the summer may have different desires and product purchasing interests than those at other times of the year. However, this may not be a very serious limitation since 70 percent

of travel occurs in Michigan during the summer months (U.S. Travel Data Center, 1985).

CHAPTER VI

SUMMARY AND CONCLUSIONS

The major objective of this study was to measure the potential market that exists for the direct sale of agricultural products to travellers in Michigan. The study considered the size of the potential market at three different levels. First the overall state potentials for products, followed by the regional potentials and concluding with the difference between the actual and potential markets at a regional level. Finally the study compares the data on market potentials and matches it with the existing levels of ag/tourism development in the study regions.

The major data for the study were derived from research carried out in the summer of 1985. The objective of the summer 1985 study was to determine whether travellers in Michigan were interested in purchasing agricultural products. Travellers and tourists were questioned at various destinations around the state as to their interest in purchasing specific agricultural products directly from the producers. This data comprised the basis for the potential interest component of the study. Combined with the 1985 data

were actual sales figures of the 1984 study (Propst et al., 1984) which were used to analyze the differences between the levels of actual and potential product sales.

Certain products generated far higher market potentials than did others at the statewide level. This was most apparent for fruit which dominated at both the state and regional level, while plants and flowers had the lowest market potentials of all categories. At the regional level certain products predominated however, these levels of dominance could often be correlated to the availability of a specific product within the region at the time of the interview. Inter regionally the dominance of different products was more noticeable with certain regions having marked potential over others for the sale of specific products. Finally the hypothesis of no difference between the actual product purchases and the potential product sales within regions had to be rejected. In summary there appears to be some concentration of high market potential within the state for certain product sales.

Implications

This sub-section of the chapter will focus on the implications of the research. The focus will be on what questions were answered and how do they contribute to the body of knowledge as well as the meaning of this research to the "real world."

Contributions to the Body of Knowledge

This research effort has borrowed from a number of bodies of theory, yet does not have its roots in any one single theory. This somewhat "messy" approach was due to the fact that no succinct body of theory has been developed to define a field as diverse as agricultural tourism. The literature studied to provide a conceptual background for this research included writings from such diverse fields as marketing research, farm market research, tourism research, diffusion of innovations research and market forecasting research.

The problem statement indicated that information on consumer preferences was necessary for a successful agricultural marketing enterprise. The consumers in this study comprise the travelling market segment. The study

concentrated on the interest of travellers translating interest into market potential.

This research adds to the body of knowledge that exists on ag/tourism as a unique field. There has been little research to date on the travelling market segment with respect to the purchase of agricultural products and experiences from direct market outlets. This research may be the first that has specifically developed a measure of the potential market, namely expressed interest. There have been other studies (Stuhmiller, 1976; Lockertz, 1986) which have considered the potential market for product sales. However, they did not attempt to define market potential from the point of the consumers expressed interest, but rather assumed interest to be a given or static variable. Herein lies one of the unique strengths of this study: market potentials were estimated at the state level and disaggregated to the regional level, based on the expressed consumer interest.

Contributions to the Practice of Ag/Tourism

The uniqueness of the concept of agricultural tourism permeates this thesis. Some practitioners in the field have felt that the concept should be renamed "rural tourism."

However, such renaming may cause the concept to loose its unique agricultural identity. For example, a tour of the Blue Diamond Almond processing plant in Fresno, California would constitute an ag/tourism experience at all levels, yet takes place in an urban setting. Part of the great strength of this field lies in its ability to relate agriculture and its products to experiences (both educational and physical) in a package that can be marketed and sold to interested travellers.

It must be remembered that ag/tourism is a blending of two diverse components, agriculture and recreational experiences, in such a way as to attract persons to purchase the products. It was pointed out earlier the mix of these products and activities is only limited by the imagination of the enterprise or host community. Some of the better examples of this are product related festivals, such as the Maple Syrup Festival in Shepherd, Michigan. The festival originated as a school district fundraiser in which maple sap was tapped, and made into syrup which was used for a yearly pancake breakfast (Tolksdors, 1986). Since then the festival has turned into an educational event with sap being tapped in proximity to the sugar shack where it is reduced to syrup and bottled. Visitors can take part in all the phases of the sugaring such as placing buckets, gathering sap, or bottling the syrup. While the event is still used as

a fundraiser, it has extended beyond a few individuals donating syrup, to a community wide event with a high level of support.

A county-by-county inventory of agricultural businesses or events having a strong tourism component or potential was carried out by Propst et al., (1984) as a part of their initial research into ag/tourism in Michigan. Their results are presented in figure form and provide a relatively up to date picture of the concentrations of u-picks, farm/roadside markets, farmers' markets, wineries and agricultural festivals (not county fairs) in the state.

Use can then be made of the market potential data and the existing direct marketing operations inventory by planning organizations, business or financial institutions. The best use of this research, will be to act as a springboard for making rational and informed decisions on the wisdom of entering a specific region or county with the intention of targeting a specified market or bringing about changes in an existing market operation. However, one major problem with the inventory is that it was collected for "all" businesses and therefore includes both ag/tourism and other direct business outlets. This may prove to be a problem with identifying the state of the market i.e., is the market flooded with ag/tourism enterprises.

One further caveat needs to be stated at this point, with relation to the potential earnings of an ag/tourism enterprise. The level of profitability will depend on many factors including the size of the operation, level of indebtedness, overhead, plant and equipment and location. Economies off scale operate in ag/tourism enterprises as they do in other enterprises, so larger organizations will tend to be favoured over smaller ones in their ability to market their produce and weather competition. Some practitioners feel that at best, ag/tourism provides an additional income but cannot be construed as a life or farm saving enterprise. This is a general feeling, there are however some exceptions. Larger operations appear to be in a position to capture a large percent of the travel market share and appear to receive high earnings from their majority income travellers.

One important factor that has not been stressed so far in the arena of ag/tourism is the need for cooperation between enterprises and tourist organizations. In many counties there exists well developed tourism organizations alongside ag/tourism enterprises, with no cooperative linkages existing between them. To actively meet the needs of travellers and tourists within counties and regions, cooperation has to be fostered between tourist organizations and enterprise operators. There is some movement at the

moment towards developing these linkages between tourism and agricultural groups in the state. An example of this cooperation is the Pick-Michigan campaign in South West Michigan that involves growers, the local tourist council and the Cooperative Extension Service in a joint marketing plan that stresses the regions unique agricultural resources. However, much work still has to be done before the necessary high levels of cooperation that will benefit both parties can be achieved.

In conclusion, there appears to be every indication that there exists a good market for the direct sale of agricultural products to travellers. However, the barriers to increased product sales need to be recognized and dealt with constructively. These barriers which tend to reduce the potential for sales also include the attitudes of the owners to direct marketing and the lack of cooperation. All these barriers will work towards reducing the potential market for any product offered. The conclusions are also restricted by the dependance on non probability sampling techniques. However, the diversity of techniques that were employed to reach the respondents provides some level of confidence that the potential is high. As more research regarding Michigan tourism needs becomes available, this information should be passed along to farmers and other ag/tourism individuals as they stand to benefit greatly from understanding this

potentially important market segment.

Recomendations for Future Research

This research effort along with the few other writings on ag/tourism (Propst et al.,1984; Sommer, 1980, Pizam & Pokela,1980) have simply scratched the surface of the field. Research in Michigan has now been done on the nature of ag/tourism, an inventory of ag/tourism enterprises and festivals, and most recently, the expressed interest of travellers in the direct purchase of agricultural products. These studies have all been concerned with what could be described as the macro picture of ag/tourism.

A new and useful direction to this research would be to move down to a more micro level of analysis. This could take the form of a case study of an existing and successful ag/tourism enterprise located in Michigan. The study should consider such factors as competition, product diversity, return visitation, and advertising. Another study might examine critical mass of operations that an area can support. This research would greatly nocrease the existing knowledge base and help practitioners and researchers get a

better handle on some of the important issues facing ag/tourism enterprises.

Another area of importance to the whole field of ag/tourism would be to examine present cases of cooperation between agricultural producers and tourism groups in the state. These relationships should be studied in the light of their success or failure, so as to be able to provide some guidance for newly developing coalitions.

APPENDIX A

Questionnaire

Michigan State University
Department of Park and Recreation Resources
1985 Agriculture - Tourism Interest Study

INSTRUCTIONS: Please answer each question that applies to you. Use the definitions of Agricultural Products given below in answering some of the questions. This form takes about five minutes to complete and all your responses will be held in strictest confidence. Answer all questions in order and please do not return to answer any questions previously left out. Please return the form to the interviewer when you have completed it. Your answers will help provide Michigan travelers with better information and high quality farm products.

AGRICULTURAL PRODUCTS-- fresh fruits and vegetables; trees, shrubs and bedding plants; fresh or smoked fish; and certain processed food (wine, honey, maple syrup, apple cider, cheese, preserves, fruit juice).

1. Please name any 5 of Michigan's agricultural products:

_____ _____ _____ _____ _____

2. On this trip did you purchase any agricultural products in Michigan?

_____ NO _____ YES--Please list ONLY those agricultural products you purchased OUTSIDE OF GROCERY OR CONVENIENCE STORES:

(if NO skip to Question #4)

_____

_____

3. If you answered "YES" to question 2, how much did you spend on the agricultural products that you purchased in Michigan. Round to the nearest whole dollar. $ _____

3a. Is this estimate of the amount you spent on agricultural products in Michigan accurate? _____ NO _____ YES _____ IT'S CLOSE

4. During the rest of the trip, do you plan to purchase any agricultural products in Michigan OUTSIDE OF GROCERY OR CONVENIENCE STORES ?

_____ NO _____ YES--Please list the agricultural products you intend to purchase on the rest of your trip:

_____

5. On this trip, did you:

	(CIRCLE)	
a. visit an agricultural festival or event?	NO	YES
b. visit a winery?	NO	YES
c. visit an agricultural processing plant?	NO	YES
d. tour a forestry plant?	NO	YES
e. visit a forestry museum?	NO	YES

1 2 3

1
4
5 6 7 8

9 10 11 12

13 14 15

16

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25 26

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32 33 34 35

36 37

38 39 40

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42

43 44 45 46

47 48 49 50

51 52

53 54

55 56

57

6. From the list below, please place a check beside the products or services you would be interested in purchasing on this or future Michigan trips.

FRUITS

__apples
__apricots
__blueberries
__cantaloupe

__cherries
__cherries (red tart)
__melons (water)
__melons (other)
__nectarine
__peaches

__plums
__raspberries
__strawberries
__tomatoes

FLOWERS AND PLANTS

__bedding plants
__flowers (cut)
__flowers (dug)
__shrubs
__trees

DAIRY PRODUCTS

__cottage cheese
__cheese
__eggs
__milk

VEGETABLES

__beans (green)
__beans (other)
__brocolli
__carrots

__cauliflower
__corn
__cucumbers
__egg plant
__lettuce
__peppers (green)

__peppers (other)
__potatoes
__pumpkins
__rhubarb

__spinach
__squash
__sugar beets
__turnips
__watercress
__zucchini

PROCESSED (EXCEPT DAIRY)

__cider
__fruit juices
__jams, jellies preserves
__maple syrup
__wine

OTHER PRODUCTS

__firewood
__fish (smoked)
__fish (fresh)
__honey

__mushrooms (not wild)
__mint
__other herbs

__OTHER PRODUCTS: PLEASE SPECIFY
_____

SERVICES

__farm tours
__winery tours
__vacation farms
__rural bed and breakfasts
__farm product processing plant tours

__forestry plant tours

__forestry museums

__OTHER SERVICES: PLEASE SPECIFY
_____

__NOT INTERESTED IN ANY OF THESE PRODUCTS OR SERVICES

7. Which of the following reasons may prevent you from purchasing Michigan agricultural products? (Even if you have purchased some agricultural products, please answer this question).

__having to buy in large quantity
__products not in season
__prices are too high
__no room in vehicle

__can get all I need near home
__didn't know these products were available
__will spoil before I reach home
__unsure of product quality
__I buy these products at grocery stores
__don't know WHERE to buy these products
__don't know WHEN to buy these products
__just not interested
__other: specify_____

8. Where is your permanent residence located?

_____ _____
city or county state or province

9. Are you staying overnight in Michigan away from your permanent home?

__NO __YES--How many nights? _____ nights

__ Check here if you are a seasonal resident

10. What is (or was) your destination for the trip you are on? (city and/or county) _____

11. What is the primary purpose of your trip? (check only one)

____visit family and friends
____business
____recreation
____other: please specify_____
_____

12. Are you on a bus tour? ____NO ____YES

13. How many people INCLUDING YOURSELF are in your party?
_____people

14. How many of these persons, INCLUDING YOURSELF, are in the following age categories?

___less than 5 years old
___5-12 years old
___13-17 years old
___18-25 years old
___26-29 years old
___30-39 years old
___40-49 years old
___50-59 years old
___60 or above

15. Is your party: (check only one)

___all family members
___all friends
___friends and family
___organized club or group

16. Education: Please CIRCLE the number that represents the highest level you completed.

1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7+

Grade School High School College

17. What is your sex? (circle one): M F

40 41 42 / 44 45 46 / 47 / 48 49 50 / 51 52 / 53 54 55 / 56 / 57 58 / 59 60 61 / 62 63 64 / 65 66 67 / 68 / 69 70 / 71

APPENDIX B

The Determination of market Potentials

at a lower point than to reach market potential.

This method had a number of inherent methodological errors, namely that person-trips do not equal persons, and the objective of the study was to measure market potential not just seventy five percent of market potential. To overcome these errors, a new range was created using for the lower level the unadjusted Ross Roy Agency figures, and for the upper level, the adjusted average daily traffic counts for tourist routes in Michigan. Both sets of figures had to be converted by applying reduction factors of: (1) national average person trips to Ross Roy data to reduce person-trips to persons, and (2) national average vehicle occupancy rates to traffic counts to eradicate commuters and business travel. The range was then set up with only two measures of high and low, but both measuring the total market potential for product sales in Michigan.

The calculation of the total number of tourists in Michigan i.e., the potential tourist market was the result of a number of iterations. Calculating the number of tourist/travellers was complicated and fraught with numerous methodological pitfalls. The most difficult issue to resolve was how to measure tourist/travel activity, as there is little agreement in the literature about how they are to be measured.

The Ross Roy Agency figures supplied by the Michigan Travel Bureau measured the total tourist/travel activity for 1985 as 46.9 million person trips. This figure was then reduced by fifteen percent or 7.03 million person trips as no confidence interval was supplied for the figure. This resulted in a figure of 39.87 million person trips as the potential market for agricultural product sales to travellers in Michigan. This figure was then rounded up to 40 million person trips for ease of calculation. To prevent overestimation of the results a range was set up to measure the potential. The upper level of the range was set at seventy five percent of the total or 30 million person-trips. The lower level was set at twenty five percent of total or 10 million person-trips. The rationale for reducing the total number of person-trips was that market potential is never attained but the curve tends rather to flatten out

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