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ESTIMATING PERSON TRIPS TO DESTINATIONS AND FACTORS
INFLUENCING GROWTH OR DECLINE: A CASE STUDY APPROACH

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Kevin Alan Nelson

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ESTIMATING PERSON TRIPS TO DESTINATIONS AND FACTORS
INFLUENCING GROWTH OR DECLINE: A CASE STUDY APPROACH

By

Kevin Alan Nelson

A DISSERTATION

Submitted to
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ABSTRACT

ESTIMATING PERSON TRIPS TO DESTINATIONS AND FACTORS
INFLUENCING GROWTH OR DECLINE: A CASE STUDY APPROACH

By

Kevin Alan Nelson

The purposes of this study were to develop and test a model for estimating person trips to a tourism community and to examine tourism visitation trends for a 10-year period. There are numerous articles that describe processes for estimating visitation and numbers of visitors to events and destination attractions where visitors must enter through customs or other "gates." However, none of these models can be easily applied to communities or attractions where there are multiple points of entry, people may make multiple visits during a specified period, or people may visit multiple attractions or event venues.

The City of Frankenmuth, Michigan was used as a case study to gather needed information to develop and test the visitation estimation model. Another purpose of this study was to compare the visitation estimates with results from a study conducted in Frankenmuth in 1989.

The estimation method that was developed incorporates (1) information that is regularly collected by local businesses to monitor their own operations and performance with (2) information collected through a self-administered windshield survey conducted in parking areas throughout the community.

After applying the model it is estimated that there were 1.7 million person trips to Frankenmuth from June 1998 to May 1999. This is significantly lower than the estimate of three million annual visitors reported by local officials. Three other data sources were compared with the model produced estimate including hotel tax revenues, traffic counts, and person trips estimated from other information. The comparison revealed no obvious errors in the estimate produced by the model.

The model's estimate of 1.7 million tourists to Frankenmuth appears to be reasonable based on the independent data sources. The survey results also indicate that Frankenmuth will have to identify and attract new markets, stimulate repeat visits, and encourage multiple annual trips from longstanding markets if it is to reverse the decline in visitation.

To Jeanene and all my family for their love, support, and laughter. They have made this difficult process tolerable.

ACKNOWLEDGMENTS

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LIST OF ABBREVIATIONS

Chamber – Chamber of Commerce

CVB – Convention and Visitors' Bureau

MDOT – Michigan Department of Transportatio

Chapter I

INTRODUCTION AND STATEMENT OF PROBLEM

Introduction

Tourism is important to many communities and local economies throughout the United States and the world. Visitors spend money in these communities, thereby strengthening their economies. This tourism may be in the form of attractions, festivals, events, or, on a larger scale, a city or regional destination. Many factors impact tourism visitation including demographics, lifestyles, preferences, and competitive offerings. It is vitally important that tourism communities monitor visitation, assess visitation trends, continuously analyze factors contributing to these trends, and implement strategic product-line and marketing strategies.

The graying of America, increasing diversity, and access to and use of new communications technologies can significantly impact visitation to tourist destinations, attractions and events. If a destination's market has consisted predominately of the babyboomers and their families, then an aging population will inevitably result is decreased visitation unless other markets are

cultivated. Unless a community tracks visitation and visitor characteristics it is very difficult to assess the likely impacts of demographics, social and economic factors.

The ability to forecast person trips effectively requires a benchmark (Moore, 1989). Tourism communities and destination must have counts or reliable estimates of the number of tourists (person trips) visiting during specific time periods, and an understanding of factors that effect visits. Forecasts of person trips can then be made on the basis of anticipated changes in the economy, population, travel patterns, development, etc. These forecasts provide the lead time needed for communities to develop and/or adjust their product-line offerings and marketing.

Many studies have been undertaken to forecast arrivals at tourism destinations around the world; however, most of these forecasts focus on worldwide tourism or visits to a particular country (Archer, 1976; Song & Witt, 2000). Obtaining accurate counts of tourists arriving in a country is a relatively straightforward task since most visitors must enter through customs after arriving on a plane or boat. However, estimating tourism visits to non-gated or

non-fee attractions and festivals, and to tourism communities is much more difficult.

Many communities with a variety of dispersed attractions are characterized by multiple points of non-regulated entry points. A tourist arriving by car can finds a parking space, and then walks or commutes to various attractions including restaurants, shopping and events that may or may not maintain visitation counts. Some may be on overnight trips and stay in hotels that maintain counts or collect sales taxes. It is harder to estimate overnight visitors who stay with family and relatives or day trippers. Even where different counts (hotel revenues, visitation at some attractions) exist, it is a complicated endeavor to estimate the number of tourist parties or visitors represented in those counts. There is always the potential to exaggerate the number of visitors using non-related counts.

This study focuses on difficulties of estimating person trips to tourism communities. Frankenmuth, Michigan served as a case study for developing and testing a model to estimate and explain visitation.

STUDY AREA

The community of Frankenmuth, Michigan was first settled by 15 German missionary emigrants who set up camp along the Cass River in 1845. They were sent by Wilhelm Loehe, a pastor of a country church in Neuendettelsau, Kingdom of Bavaria to give spiritual comfort to the German pioneers and to show the native Indians "Wie gut und sch'n es ist Jesu sein" (how good and wonderful it is to see Jesus). Pastor Loehe sent over four other parties of emigrants to serve the German pioneers and native Indians, but also sent emigrants to help in building the community through industrialization.

While individuals came for varied reasons, farming was the main vocation of the emigrants. Properties were purchased and land cleared to grow crops. However, some of the emigrants were less enthusiastic about the missionary work and began to show interest in developing different types of businesses. By the late 1800's, several hotels had been opened and Mrs. Kern served the first recorded "all you can eat" chicken dinner to a bridal party from Saginaw. Frankenmuth and its two landmark restaurants are world renowned for their chicken dinners.

Slowly, Frankenmuth developed retail shopping through the first half of the 20th Century with Bronner's CHRISTmas

Wonderland opening in 1945. Bronner's CHRISTmas Wonderland, the world's largest Christmas store, operates a 1½-acre showroom and is located on the south side of Frankenmuth.

During the 1950's, I-75 was constructed providing easy access to the area. Also during this time period, a dike was built along the Cass River, controlling annual floods, allowing expansion of the downtown area. In 1957, the Rupprecht Sausage building was redecorated in Alpine-style architecture. Other buildings followed suit and the Alpine-style architectural theme has become the prominent style. Even the McDonalds in Frankenmuth was remodeled to fit with the general downtown theme.

From 1950 to the present, many other businesses were started especially those that attract and serve tourists. Several motels were built and restaurants opened or expanded to accommodate the increasing tourism demand. The Frankenmuth Chamber of Commerce and Convention and Visitors' Bureau promotes Frankenmuth as Michigan's #1 tourist attraction. The two largest restaurants in Frankenmuth, Frankenmuth Bavarian Inn and Zehnder's of Frankenmuth, have a combined seating capacity of over 2,500, and serve over 1.5 million meals and prepare over 700 tons of chicken annually.

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While some think of Frankenmuth as a Christmas town, it is a year-round attraction with tourism opportunities dispersed throughout the town. The majority of Frankenmuth tourists visit a variety of attractions and participate in various community-based events and programs. Visitors can shop the many specialty stores, visit the church originally built by the early settlers of Frankenmuth, play championship golf courses, participate in riverboat tours, visit museums, and any of over 30 events scheduled throughout the year. During Oktoberfest, for example, several thousand people will come for the festival via bus tours, private vehicles, and other arranged tours. During that same time period, others may visit Frankenmuth, not knowing of the festival, and golf, shop, dine, visit museums or other historical sites, visit family and relatives, or simply enjoy the scenery in and around Frankenmuth.

Frankenmuth boasts over 2,000 motorcoach tour parties annually. Although important, these bus tours represent just one of Frankenmuth's tourist markets. There are other markets that come to Frankenmuth, with a great majority coming in private vehicles.

Frankenmuth has a very strong Chamber of Commerce and Convention and Visitors' Bureau (CVB) that coordinates and

finances tourism and community marketing and promotion.
Most of the 260 plus businesses in the community belong to
the Chamber and participate actively in marketing tourism
in Frankenmuth.

Currently Frankenmuth has a population of 4,591 and
more than 260 businesses. Frankenmuth's population
increased at rate of 9.8% compared to a decrease in the
county's population. Hotel revenues and tax collections
increased 161% during the same period (Table 1).

Table 1.

Frankenmuth Population, Hotel Revenue and Tax Data

City of Frankenmuth	1989	1997	% Change
Population (1990 & 2000)	4,408	4,838	9.8%
Room Tax Revenue (1989 & 1999)	$216,201	$564,126	160.9%
Room Revenue (approximate)	$5,405,025	$14,103,150	160.9%

PROBLEM STATEMENT

Although tourism is crucial to the economic well being
of Frankenmuth and a significant amount of money is
invested in tourism product development and marketing, the
Chamber of Commerce and CVB do not have an accurate
estimate of the number of visits or visitors to the
community. This makes it difficult to: (1) assess the

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effectiveness of current marketing activities, (2)

establish measurable marketing and promotional objectives,

(3) evaluate the return on investment from marketing,

promotional spending and special events, (4) estimate the

economic impact(s) of tourism, or (5) determine whether

there is a need for infrastructure and control mechanisms

to protect the community from potential negative impacts.

The lack of accurate estimates of tourism visitation

is a common problem for tourism communities especially

those characterized by many different hospitality

businesses, non-gated attractions and tourism opportunities

distributed throughout the community. Very few communities

have designed or implemented comprehensive systems for

collecting and integrating different measures of tourism

volume such as occupancy rates for lodging establishments,

restaurant receipts, visits to attractions and retail

sales. In part this is because businesses are hesitant to

share "volume of business" information because they fear

that it will somehow put them at a competitive

disadvantage. Even when businesses and attractions

collect and share different types of tourism data, it is

still difficult to apply them (i.e., eliminate double

counting) to derive reliable tourist counts. Short of

gating the entire community, it is difficult for CVBs or

chambers of commerce to develop reliable counts of tourists that visit their communities, never mind being able to segment these tourist market. All they are able to do in most instances is to report trends in different data such as occupancy rates and visits to particular attractions.

Frankenmuth's CVB currently has access to a variety of information that provide a rough indication of tourism volume including visitors to Bronner's CHRISTmas Wonderland, meals served at Zehnder's of Frankenmuth and the Frankenmuth Bavarian Inn, traffic counts, and room tax revenues. They estimate their annual tourist visits based on estimates of visitors to Bronner's CHRISTmas Wonderland and meals served at Zehnder's of Frankenmuth and the Frankenmuth Bavarian Inn.

Bronners estimates that two million persons visit the business annually, and Zehnders and the Bavarian Inn estimate that they too each serve one million visitors each year. Were double counting not an issue, these data could be combined to yield an estimate of four million visitors to Frankenmuth each year. However, some visitors who frequent Bronners also eat at one or both of the restaurants, and some eat at the same restaurant more than once. In an attempt to avoid double counting, the CVB has subjectively removed one million visitors from this total

to arrive at an estimate of three million visitors to Frankenmuth annually. While dinners at the two restaurants and visits to Bronners can potentially be used to estimate person trips, there have been no scientific studies to determine the proportion of tourists that eat at the restaurants or shop at Bronners. Therefore, meal estimates and visits to Bronners are only an indicator of visitation trends.

Developing estimates of person trips using traffic counters on roads through Frankenmuth is also problematic. The counters provide estimates of the number of vehicles entering and exiting Frankenmuth. It is difficult to determine how many of these vehicles contain residents, tourists, business people, etc. Without this information, it is impossible to use traffic counts to estimate the number of tourists or person trips. Another problem is that while traffic counts do provide the number of vehicles, they provide no information about the number of individuals in these vehicles.

A county-wide room tax is collected in Frankenmuth (Saginaw County) and as a result there are data available to estimate sales revenue from hotel/motel rooms in Frankenmuth. While these data provide a way (number of rooms occupied X average overnight party) to estimate the

number of persons staying overnight in commercial lodging establishments, it does not provide an estimate of all overnight visitors (i.e., those staying with family or friends, or in campgrounds) or the number of day visitors to Frankenmuth. However, the availability of these hotel sales data does provide the opportunity to use them in evaluating visitor count estimates based upon other metrics and models.

It is not easy to estimate the number of tourists that visit communities such as Frankenmuth. Even experienced researchers have difficulty coming up with estimates at a reasonable cost. While several methods exist for estimating person trips to closed/regulated events, they are difficult, if not impossible, to apply to communities. There has not been a great deal of published research or methods development directed at counting tourists in such situations.

The focus of this study is to develop a model that utilizes meal counts and visits to Bronners to more accurately estimate total person trips to Frankenmuth, and to allow the application of this model in other communities.

STUDY OBJECTIVES

Four objectives were developed to guide the survey that was part of the study and also design of the visitor estimation model.

Objective 1: Develop and test a method for accurately estimating the number of person trips to a destination using Frankenmuth, Michigan as a case study.

The City of Frankenmuth attracts a variety of tourist

segments who participate in many activities and visit

different attractions. Many of these activities (e.g.,

viewing architecture) are free and not gated making it

difficult to count visitors. This study will create and

test an approach for estimating person trips to a community

characterized by many entrance and exit points, few if any

attractions with entrance fees or counters, and a mix of

day and overnight trippers who arrive in private vehicles

and charter buses.

Objective 2: To compare findings with findings from a similar 1989 study. To evaluate changes over the time period and identify trends to verify estimates of person trips produced by the model.

Using the 1989 study data to compare with those from

the 1999 study will allow the Chamber of Commerce and

Convention and Visitors' Bureau to better identify and

understand trends that may impact visitation to Frankenmuth

in the future. Examining these data may show trends that

will help marketers and businesses in Frankenmuth

understand whether the number of person trips (estimated by

the model) has changed, and if so, in what direction.

Objective 3: Assess the validity of the model produced
            estimates of tourism visitation using other
            tourist counts and measures of tourism.

As previously mentioned, while other methods of

estimating the number of tourists have been used (e.g.,

room nights, traffic counts), there are problems associated

with using these data to estimate total person trips to a

community.   However, these other secondary data can help

assess the validity of model produced estimates. For

example, if room occupancy (parties staying overnight in

hotels/motels) is much greater that the models estimate of

tourist trips the models estimate is obviously incorrect

because it also includes day trippers.

Objective 4: Estimate the cost and identify the technical
            requirements of applying this method on a
            regular basis in Frankenmuth and also in other
            communities.

Using the model to derive an estimate of tourist trips

for one year (1999) does not adequately address the need

for a method to monitor visitation. If the cost and

technical requirements to develop and calibrate the model

is higher than the perceived value of the estimates,

communities will not employ it. This study will include
cost estimates and assessment of technical expertise
required to apply the model on a continuing basis.

ORGANIZATION OF THIS DISSERTATION

This dissertation contains five chapters. This
chapter provided a brief introduction to Frankenmuth and
the objectives of the study. Chapter II reviews literature
relating to: the need for methods that produce reliable
estimates of tourist visits, and methods being used to
produce these estimates. Chapter II also includes a review
of literature that express the need for longitudinal
tourist visitation data. In Chapter III, data sources,
survey design and distribution, non-response bias tests,
data analysis and the model are described. Chapter IV
includes the results of the case study in Frankenmuth along
with a comparison of the person trips estimates using
traffic, room tax data, and other independent estimates of
person trips. Chapter IV also includes a comparison of the
results of this study to the study done in 1989 in
Frankenmuth. Chapter V, conclusions, discusses the
implications of the findings along with limitations and
recommendations for future research. This chapter also

discusses the technical requirements and likely costs for

implementation of the model presented.

Chapter II

REVIEW OF LITERATURE

Introduction

This chapter reviews literature that provided the conceptual and methodological foundation for this study. Currently many nations, states, and communities are looking to tourism to show off their culture and import employment opportunities. Many tourism destinations gather little or no information, thereby making guesses about the number of tourists that visit, the effectiveness of their marketing, jobs created, spending, and economic impact. Incomplete and mis-information has produced poor tourism investment, management and marketing decisions (Ryan, 1991).

The review of literature determined that there is very little published material relating to the measurement or estimation of tourist volume. The literature that comprises this review includes: 1) the importance of accurate tourism volume estimates, 2) methods of estimating tourism volume, and 3) the use of longitudinal data in tourism.

IMPORTANCE OF ACCURATE TOURISM VOLUME ESTIMATES

Over the years, a substantial body of tourism literature has argued reasons for obtaining accurate estimates of tourism "demand" and participation (Della-Bitta et. al., 1977; Ritchie, 1984; Getz, 1990; Turco and Kelsey, 1993; WTO, 1995; and Getz, 1997). Having estimates of tourism volume (e.g., number of tourists, party trips) is very important information for a variety of tourism studies including economic impact, conversion studies and advertising effectiveness. Frequently, these studies are limited by the lack of available, relevant estimates of tourism volume.

A large number of studies have examined the economic impact of tourism on a variety of destinations, and the economic impact of special events and tourism attractions. Ritchie (1984) examined the economic impact of hallmark events. These are events such as major sporting events, world fairs, and carnivals and festivals. Long and Perdue (1990) and Della-Bitta et. al. (1977) used the popularity of rural festivals to examine the economic impacts of smaller, short-term events. Still others have studied economic impact analysis in general (Williams and Shaw, 1992; Kottke, 1988; Turco and Kelsey, 1993; and McIntosh, Goeldner & Ritchie, 1995).

According to Brothers and Brantley (1993) while many of these studies focus on estimating tourist spending, a large number partially ignore the critical importance of having accurate attendance figures. They argue that while gathering accurate spending information is important, it is only one piece of the puzzle in making a sound estimate of total spending. They provided an example of the importance of this situation. For example, if average spending by tourists during a period of time was $50 per person per trip and attendance estimated by traffic counts was 20,000 people trips, the spending impact would be one million dollars. But suppose that at the same time another event was being held in another nearby community. If many people attending this other event passed over the traffic counters used to derive estimates of attendance at the first event and the actual attendance is closer to 12,000 person trips, the spending impact of the first event is $600,000 not one million dollars. The accuracy of the total spending impact is contingent on the estimate of the number of persons that attend the event.

Visitation numbers are also an important input in tourism segmentation analyses (Crompton and McKay, 1997; Getz, 1990; Uysal, 1993; Harris, McLaughin, and Hunt, 1993; Andereck and Caldwell, 1994; Crompton and Witt, 1997; and

Getz, 1997). Tourist volume, along with demographic and purchase behavior information, is used to examine segments visiting destinations. Identifiable segments that represent significant visitation or spending potential can be targeted in terms of product development and marketing. While some segments may represent a large number of visitors they may represent a much smaller percent of total visits. Witt (1991) discusses the importance of understanding the "demand" for tourism destinations to serve in better promoting the destination.

The authors of other publications argue that the ability to identify visitation and visitor trends, and forecast visitation is very important in tourism marketing and management (Getz, 1997; Getz, 1991; Witt, 1995; Frechtling, 1997; and Pyo, Uysal, and McLellan, 1991). The ability to discover and describe trends and forecast visitation requires that a benchmark or a series of data be identified. Attendance numbers are the dependent variable in econometric models. Without accurate attendance estimates it is impossible to determine the strength of the relationship with various independent variables such as inflation or income levels (Smeral and Witt, 1996). The availability of reliable attendance figures enhances the

predictive reliability of the econometric models that are developed.

There are other important reasons why visitation numbers are important. For example, Ritchie (1984) describes various environmental impacts associated with different types and levels of tourism and the importance of having visitation numbers in helping communities predict and manage these impacts. Turco and Kelsey (1993) and La Lopa, et al. (1997) explain why it is important for festival organizations to have accurate attendance numbers when it comes to acquiring sponsorships and public support for their events. Getz also discusses the importance of attendance numbers in attempts to estimate the proportion of repeat visitors to an attraction or community (Getz, 1997).

There are other methods for estimating dispersed populations. Lancia and Bashir (1996) review methods for estimating wildlife populations. While many of these methods are not directly transferable for estimating tourism visitation, some of the principles are applicable.

METHODS OF ESTIMATING TOURISM VOLUME

Several different methods have been used by communities, destinations, events and researchers to

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produce estimates of the number of tourists visiting destinations. Each of the different methods has advantages and disadvantages including the degree of accuracy.

Vehicle Counts

Many times it is possible to count traffic, by one means or another, to determine the flow of traffic into and out of an area (Della-Bitta et. al., 1977; Getz, 1991; Getz, 1997; and Harris, McLaughlin, and Hunt, 1993). Entrance and egress to sites or destinations must be monitored (e.g. traffic counters, manual observation counts) to derive vehicle counts. The average number of persons per vehicle is determined using various sampling schemes or visitor surveys (i.e., size of your travel party). Total attendance is then obtained by multiplying the total number of cars by the average number of occupants determined from the sample.

Vehicle counts, unless the community or attraction is clearly the trip destination, often do not provide clear cut estimates of tourist volume. Estimating tourist volume is difficult given that local resident, business and pass-through traffic are included in the counts. It is nearly impossible to determine the proportion of cars that contain tourists or people visiting the area for other purposes

unless a survey is conducted in conjunction with traffic counts. Traffic counts are also difficult when attempting to estimate tourism traffic visiting urban areas that have multiple entrance and exit points. Getz (1997) suggests stopping a sample of the cars to determine their intent. However, traffic stops were recently made illegal in Michigan for other than police business (e.g., sobriety checks).

Another method of counting cars is observational videotaping including license plates (Getz, 1997). The owner's name and address can be obtained from motor vehicle records and a follow-up questionnaire can be mailed to them to determine purpose, destination and characteristics of the trip. While feasible, this option is quite expensive. For example, in Michigan each request for a name and address associated with a license plate number cost $6.50 in 1999.

Counting Moving Pedestrians

People move around within tourism communities like Frankenmuth, and it is feasible to count them as they leave or enter an area (Getz, 1991; Getz, 1997). This method involves either counting all people coming and going from an area, or taking counts on a regular basis. For example,

the sampling plan may involve counting for two minutes
every half-hour over a 10-hour period. This would produce
21 counts over the 10 hours. Total attendance is estimated
by multiplying the average of the counts by the number of
two-minute segments in 10 hours (300).

Employing this estimation method would be difficult in
tourism communities such as Frankenmuth because of the
dispersed nature of tourist attractions and the number of
available entrance points to the community. The question is
where to count to provide a valid representation of overall
tourist visitation. Also, obviously not everyone who
enters the community, even in tourism dominated
communities, is a tourist; some of those counted are
residents or persons visiting for other purposes. This can
not be determined by visual observation alone.

Police Method

This is similar to the counting pedestrians method,
but the counts are taken in defined areas (Getz, 1991;
Getz, 1997). This method is sometimes used to estimate
attendance at un-gated community festivals and events.
Counting is confined to predefined areas (cells) and times
during the course of an event. The cells or counting areas

should be high traffic areas and not be located near entrances or exits. The total of the counts is averaged and then this average is multiplied by the total number of cells within the event area to arrive at an estimate of attendance.

There are some obvious limitations to this method. First, is determining the locations of cells or counting areas especially when visitors are not equally distributed throughout the community, or event area. Tourists inside businesses (e.g. shopping, restaurants) also make it difficult to obtain an accurate count of persons inside a cell. Also, it is similarly difficult to determine tourists versus persons that happen to be inside the cell for other purposes without a companion survey of some sort. While the police method may provide reasonably accurate estimated of attendance at special events, it is difficult to utilize to estimate community-wide tourism visitation estimates.

Tag and Recapture

This method discussed by Brothers and Brantley (1993) is adapted from bio-statistical methods for estimating dispersed wildlife populations such as moose and wolves

(Ricker, 1975; and Lancia and Bashir, 1996). Persons are selected at random as they enter a tourist area and they are "tagged" for later observation. It is recommended that at least 10% of the estimated attendance be tagged. Time is given for these tagged individuals to mix with non-tagged individuals and then a random selection of visitors is taken to determine the percentage of this party that has been tagged. The total number of attendees is then calculated from this proportion.

This method has many of the same problems as the methods already discussed. While this method may be useful in determining the number of visitors to a specific event, it is not realistic to make these counts over a period of time sufficient to estimate person trips to a tourist community for an extended period of time (e.g., a year)

Parade Counts

When an event includes a parade then parade counts may serve as a valid estimate of attendance (Getz, 1991; Getz, 1997). With the parade count method, the length of parade route is used subtracting places along the route where viewing is impossible. The viewable length is divided into equal segments and persons viewing the parade are counted. The next step is determining segments along the parade

route that have significantly more or less viewers and remove those segments from the sample. Persons along the route in the remaining segments are counted and the average count of the "average" blocks are multiplied by the total number of "average" blocks and add in the isolated blocks for the total.

While this method may have merit for limited duration events such as a parade, marathon, or road race it is not very feasible for estimating dispersed tourism visitation to a community over the course of an entire year. Also, while it could be used to estimate attendance at an event on the parade day, it would not be reliable for a more dispersed community-based event.

Static Crowds

The static crowd method is similar in many regards to the parade count method. It is best suited for a situation where a crowd occupies a particular space, and there is relatively little coming or going (Della-Bitta et. al., 1977; Getz, 1991; and Getz, 1997). The area is divided into grids or sections, and visitors are precisely counted. The counts can be taken using aerial photographs where grids can be drawn directly on the photograph. Sections are then randomly chosen and counts made and the average of

these sections is obtained. Total attendance is then
obtained by multiplying the previously determined average
by the total number of sections in the area.

This method works well with open-air festivals or
events; however, most destinations have many shops,
restaurants, hotels, etc., making this type of counting
impossible except during special events.

USE OF LONGITUDINAL TOURISM DATA

After a thorough examination of the tourism journals
and trade publications, it became clear that the use of
longitudinal data in the tourism field is very limited.
After examining the major journals related to recreation
and tourism (i.e., Journal of Travel Research, Journal of
Leisure Research, Annals of Tourism Research, etc.) one
article was found dealing directly with longitudinal data
(Roche, 2000). This study dealt with mega-events and their
impacts on the host region. The problems associated with
using this methodology in Frankenmuth have been discussed
earlier in this chapter.

Time series analysis was possible for this study,
however, due to available data from a similar Frankenmuth
study completed in 1989. Chapter IV will explore the
results of this study and compare its results with the

findings from the 1989 study. These results will provide a look at the use of longitudinal data related to a tourism destination. While past studies have used time series data in forecasting demand, this study will show that examining market data over time can provide useful information for gaining an understanding into a variety of potential problems and give clues to correcting some of these problems. The importance of this type of research was set forth by Yaman & Shaw (1998) where they talk of the need for destinations to conduct market research and to examine change over time through continued inquiry.

CONCLUSIONS

The review of literature indicates the importance and various uses of tourism visitation data and estimates. These uses include planning, management, marketing and impact assessment and control. Many of the methods have been developed to estimate attendance at special events. While a variety of methods have been developed and used to estimate tourism volume, none of these techniques that are commonly used are practical when dealing with a community where people enter through various points, may stay for more than one day, and where tourism activities and attractions are widely dispersed. It is not feasible to

utilize these methods for estimating annual tourism

visitation to a tourism-based community like Frankenmuth.

The literature review establishes a need for a method that

can efficiently be used to estimate visitation to tourism

communities and to compare the estimates that are produced

with other independent tourism visitation

indicators/measures.

Chapter III

METHODS

Introduction

The literature review clearly established that there
has been little research or development of methods to
estimate tourism related visitors and visitation to
communities and dispersed attractions. Most of the methods
focus on estimating attendance to special events. These
methods have a number of limitations and they cannot
feasibly be utilized to estimate annual tourism visitation
(annual person trips to a community like Frankenmuth). In
part this is because communities either do not have, or are
unwilling to invest, the time and money it requires to
apply visitor tracking systems

The literature review along with conversations with
Directors of Convention and Visitor Bureau indicated that
there is a significant need for a method to estimate
tourism visitation that is based on measures of tourism
that are collected on a regular basis. The method must
provide estimates of overall visitation not just the number
of overnight visitors staying in commercial lodging
establishments. Tourists on day trips and persons staying

with friends and relatives must be integrated as part of the estimates. It must incorporate various measures of tourism volume that are both reliable and publicly available. Tourism businesses including restaurants, lodging establishments and attractions collect information that could be useful in estimating overall tourism visits, but frequently they are unwilling to share this information because they are concerned that it will provide the competition important insights to their business strategies and performance. The data used as a basis for the estimation method must continue to be collected, and the methods used to obtain the data must remain relatively constant.

A variety of different methods for estimating dispersed community-wide tourism and other dispersed populations (e.g., wildlife) were examined, including those discussed in chapter II, to determine an approach for estimating tourist visits to Frankenmuth and other similar tourism communities. While the research client desired reliable visitation estimates, it was essential that the estimation method was not too costly, or so complicated that the CVB staff could not produce the estimates without outside assistance. The purpose of this study is to develop and test a model for estimating person trips to

Frankenmuth, Michigan that can then be applied in other tourism communities. This chapter describes (1) the primary and secondary data used to develop the model, (2) the methods for conducting the survey that collected the primary data including questionnaire development, the sampling scheme, data collection and coding, and non-response bias analysis, and (3) the Tourism Visitation Estimation Model.

DATA NEEDS

It was determined that the following information was needed as inputs into the model. Some of this information had been collected in a 1989 survey, but there were concerns regarding the extent to which visitors and their trip characteristics had changed over ten years.

1) The size of tourist parties - the average number of persons. This would provide a basis for estimating the number of parties from information in the number of visitors.

2) The origin (place of residence) of the people surveyed and visiting Frankenmuth. There was the potential that Frankenmuth residents in town for

shopping or to eat at restaurants would be sampled. Therefore, individuals were asked to provide their zip code in order to determine residency so that surveys completed by locals could be deleted from the analysis.

3) It was crucial to the development of the model to derive and estimate the proportion of visitors comprising parties that ate at either the Bavarian Inn or Zehnders restaurants, and the number of different meals that they ate at either or both of these restaurants. The percentage of people that ate at either restaurant could then be determined by dividing the number of people that ate a meal, or meals, by the total number of people surveyed during the time period. This information was used to estimate multiple meals in order to eliminate double counting of visitors. If a visitor ate at both restaurants during his/her trip, the second meal was subtracted in order to determine the total number of visitors that ate meals at the restaurants. While this person represented two meals they still represented only one visitor.

4) Lodging taxes, traffic volume, and other independent estimates of person trips were gathered from the government and other organizations to assess the accuracy of visitation estimated by the model. The lodging tax data were combined with other data collected on the visitor survey to estimate hotel nights. Dividing total taxes collected by the tax rate gives total room sales revenue for hotels/motels for any given time period. Dividing this by the average cost of a room per night yields room nights for the time period.

The survey asked whether the responding party stayed overnight in Frankenmuth, type of lodging, and the length (number of nights) of stay. This information in combination with an estimate of person trips was used to develop another estimate of hotel/motel room nights for comparison purposes.

Traffic count data can also provide a rough estimate of person trips to an area. Data from traffic counters operated by the State of Michigan and Saginaw County were also used to assess the

visitation estimates derived from the model. The
total number of vehicles passing over a traffic
counter on the main road entering Frankenmuth from
the south was obtained. The Michigan Department of
Transportation indicated that 25 percent of vehicles
passing over the counter are non-personal
(commercial) vehicles, i.e., large trucks, etc.
These vehicles were removed from the count. But, the
traffic counts still include resident traffic and
people who live outside Frankenmuth, but cross the
counter to get to work. The total number of
tourists entering Frankenmuth was estimated using
the average number of people per car entering
Frankenmuth from the survey. This number was
compared to the person day estimate from the model.

THE TOURISM VISITATION ESTIMATION MODEL

The formulas presented in Figure 1 were developed
based on a review of other estimation models, an
understanding of the nature of tourism in Frankenmuth and,
availability of tourism data in Frankenmuth.   The cost of
collecting data and running the model was a primary factor
that was taken into consideration.

FIGURE 1
TOURISM VISITATION ESTIMATION MODEL - GENERAL

1) $TV_1 = V - RV$

where: TV_1 are tourist visits at the chosen attraction; V
           is the total number of visits at the attraction;
           and RV are resident visits.

2) $MV_1 = TV_1 - (TV_1 / AM_1)$

where: MV_1 is the number of multiple visits by
           individuals surveyed (only the second or greater
           occurrence is deleted here, the first visit
           remains); and TM_1 is the average number of
           occurrences from individuals surveyed; AM_1 is the
           average number of visits per person surveyed.

3) $TPD = (TV_1 - MV_1) / PT$

           where: TPD is the total person day visits the
           destination for the time period; TV_1 are tourist
           visits at the chosen attraction derived from
           equation one; MV_1 is the multiple visits by
           tourists at the attraction; and PT is the
           percentage of tourists that visited the
           attraction on their trip.

Theoretically, this model eliminates many of the

problems of other estimation models that were described in

Chapter II. It is relatively straightforward and

efficient. Knowing the total number of visitors that

visit/frequent a specific community attraction (e.g.,

Bavarian Inn or Zehnders restaurant) makes it is possible

to estimate total person trips by calculating the

percentage of individuals visiting that attraction. If the

attraction continues to collect and make accessible its

visitation/attendance data, it would only be necessary to

periodically update the proportion of all tourists that

visit the attraction. Figure 2 presents the same model

only with specific application to Frankenmuth.

FIGURE 2
TOURISM VISITATION ESTIMATION MODEL - FRANKENMUTH

1) $TM_1 = M - RM$

where: TM_1 is total meals eaten by tourists at both the
           Bavarian Inn and Zehnders restaurants; M is the
           total number of meals served by both the Bavarian
           Inn and Zehnders of Frankenmuth; and RM is the
           number of meals eaten by local residents.

2) $MM_1 = TM_1 - (TM_1 / AM_1)$

where: MM_1 is the number of multiple meals eaten by
           individuals surveyed (only the multiple meals are
           deleted, the first meal remains); and TM_1 is the
           total number of meals eaten by individuals that
           completed a survey; AM_1 is the average number of
           meals eaten by those surveyed.

3) TV = (TM$_1$ − MM$_1$) / PT

where: TV is the total person trips to Frankenmuth
           during a specified time period; TM$_1$ is tourist
           meals derived from equation one; MM$_1$ are multiple
           meals eaten by tourists at the same restaurant or
           both restaurants on the trip; and PT is the
           percentage of tourists that ate at one or both
           restaurants on their trip.

While most of this equation is self-explanatory, some
additional information is appropriate. Although the two
restaurants are well known local attractions in the center
of the tourist district, a proportion of visitors to
Frankenmuth may not eat at either of the restaurants. Some
tourists eat only one meal on the trip at one of the
restaurants, some eat multiple times at one restaurant, and
there are others, especially overnight visitors who eat at
both restaurants on a single trip. The final two
situations must be recognized and adjusted to allow the
model to provide an accurate estimate of visitors. If an
individual eats more than one meal at one of the
restaurants, or eats one or more meals at both restaurants
on a single trip, it is necessary to eliminate the multiple
meals to accurately represent the number of visitors. This
is accomplished by calculating the average number of meals
eaten (non-local) by visitors and then dividing the average

into the total number of meals served by the restaurants. This number is then subtracted from total meals served by the restaurants to an estimate of the number of visitors that eat at the restaurants, and the total number of visitors.

It is possible, after estimating and subtracting the multiple meals to estimate total person trips to Frankenmuth dividing the adjusted total number of meals served (tourist meals) by the percentage of people that ate at, at least, one of the two restaurants during their trip on which they were sampled. The third formula in the series would be unnecessary if the measurement attraction (e.g., the two restaurants in the case of Frankenmuth) is only visited once during a particular trip.

A more straightforward form of the model is as follows:

FIGURE 3
MATHEMATICAL MODEL

$$[A(1-PL)/f]/Pct = \text{person trips}$$

A   - Attraction count

PL   - Percentage of A that are local visits

f   - number of visits per trip for tourists that visit at least once

Pct   - percentage of tourists visiting the attraction one or more times during the trip

In addition to meal counts, the Bavarian Inn and Zehnders collect and maintain important information about their diners. Both restaurants reported that resident meals are 2% of the total meals they serve. This is an estimate based on years of knowledge of the restaurant owners. Based on this estimate 2% of the total meals served by the two restaurants were subtracted. The remainder of the meals were served to visitors from out-of-town. Again, based on the experience of the owners it was determined that a relatively small percentage of these meals were served to business only travelers.

VISITOR SURVEY INSTRUMENT

Several alternative methods were considered for collecting trip information from visitors to Frankenmuth. These included personal interviews, mail surveys, telephone surveys, and self-administered surveys. The methods were compared on the extent to which they would meet the study objectives and budgets. They were also compared with respect to the need to collect information from tourists visiting Frankenmuth at various times of the day, at various times of the year and at various locations in Frankenmuth (not just near the two restaurants).

Telephone surveys were determined not to be practical due to the lack of a representative sampling frame that provided the telephone numbers of visitors. On-site surveys were considered infeasible due to the amount of information that needed to be collected, the number of completed surveys that were needed, and the cost of interviews. Also, an on-site survey would obviously take place before the trips were completed and therefore the information collected would provide an incomplete picture of the trip (e.g., only partial expenditure estimates). Therefore, placing the surveys on vehicles in parking lots frequented by tourists was seen as the most effective data collection method. This method was also chosen because the 1989 survey had been conducted in a similar manner, allowing for a more direct comparison of results from the two studies. Individuals could fill out the survey after leaving Frankenmuth and take the time needed to make sure that they understood the questions and return them at no cost to themselves using the postage-paid envelope provided. Finally, the self-administered survey was chosen to reduce time and money commitments for the local chamber of commerce.

The self-administered survey that was developed to gather trip information needed to develop and calibrate the

model was similar to one used in a 1989 study of visitors to Frankenmuth. The purpose of the 1989 study was to develop a visitor profile that could serve as a basis of comparison to assess visitor trends. Questions comprising the 1989 survey instrument served as a starting point and questions were added to meet the requirements of the model. Specifically, questions related to eating at Zehnders and the Bavarian Inn were added to allow for the collection of data needed for the visitor estimation model. Some questions were deleted because they did not perform well or, they produced data that was not needed to identify visitor trends.

The questionnaire was revised several times prior to pretesting. Changes were made in content, clarity, layout, and overall ease of completing the survey. Several months before the scheduled start date, the survey was pretested to determine willingness to complete the survey, performance of various questions, and possible survey fatigue. Placing surveys on windshields in various parking lots was evaluated to determine whether a sufficient number of surveys would be returned to perform the analysis. This method of sampling and survey distribution was also used in the 1989 study. The prestesting identified the need for further modification of the survey instrument and

increasing the value of the incentive used to entice people to return the survey. The study in 1989 had a response rate of about 30%. The response rate for the pretest was approximately 50% and it was felt that increasing the incentive would encourage a higher response rate. The Frankenmuth Chamber and CVB offered the chance to win lodging and meals in Frankenmuth as a further incentive to encourage tourists to respond to the questionnaire. After a couple of months of lower that projected response rates the chamber offered free tickets to Oktoberfest if respondents returned a separate post card along with the survey. This did not appreciably increase the response rate and there was some concern about the actual number of surveys that were distributed.

The final survey instrument was 68 questions long, with some questions having multiple parts (Appendix B). The questionnaire begins by asking the respondent's home residence zip code. Frankenmuth (48734 zip code) residents skipped most of the questions except questions about meals eaten at the two restaurants. Non-residents (tourists) completed questions that collected information about party size and composition, trip characteristics (e.g., overnight vs. day trip, trip length), where they lodged if on an overnight trip, other trip destinations, whether they were

first time or repeat visitors, and if they were repeat visitors the frequency of their visits to Frankenmuth and perceptions of how Frankenmuth's image, products, and services have changed over the years. All non-residents were asked whether they ate a meal at either Zehnders or the Bavarian Inn Restaurant, how many meals they ate at the two restaurants, and how many persons in their travel party ate those meals.

SAMPLING SCHEME

By far the busiest tourist months in Frankenmuth are June thru August. The Bavarian Inn and Zehnders indicated that many more meals are served in June, July, and August. This was validated by other information provided by the CVB. The budget permitted for the distribution of 4,500 questionnaires of which 1,800 were distributed during the summer and 2,700 the remainder of the year.

Cars in nine different tourist parking lots were sampled using a systematic random sampling method. The number of surveys distributed in a particular lot on a given day was determined by the size of the lot and the average occupancy of the lot as determined by a traffic study conducted in Frankenmuth in 1993. Table 1 shows the capacity of the nine lots, their average occupancy, and the

average number of spaces filled. The surveys were
distributed proportional to the percent of cars in that
lot. Table 2 also shows the distribution of the 600 surveys
distributed between June and August 1998.   From September
to May, 300 surveys were distributed in similar
proportions.

TABLE 2

NUMBER AND PERCENT OF SURVEYS DISTRIBUTED IN PARKING LOTS

Lot Number	Lot Name	Capacity	Occupancy	Average Spaces Filled	% of Average Filled (Total)	Surveys to Place
1	Bronner's Lot	1,000	80%	800	32.1%	193
2	Zehnders	574	94%	540	21.6%	130
3	East Covered Bridge	465	85%	395	15.8%	95
4	Bavarian Mall	335	65%	218	8.7%	52
5	Bavarian Inn Lodge	330	62%	205	8.2%	49
6	South Bavarian Inn	147	100%	147	5.9%	35
7	School Haus Square	150	45%	68	2.7%	16
8	CVB Lot	67	95%	64	2.6%	16
9	Drury Inn/Satow	140	42%	59	2.4%	14
	Totals			**2,494**		**600**

A review of traffic counter data provided by the
Michigan Department of Transportation (MDOT) showed that

approximately two-thirds of the traffic into Frankenmuth

takes place Monday through Friday. Therefore, the sampling

plan called for two-thirds of the surveys to be distributed

in parking lots during the weekdays. Further, a

Frankenmuth parking study, reported that 34% of the parking

is in the morning, 45% in the afternoon, and 21% during the

evening. Surveys were distributed in the mornings,

afternoons, and evenings in that proportion (Table 3).

TABLE 3

DISTRIBUTION OF SURVEYS ON WEEKDAY AND WEEKEND DAYS
AND TIME OF DAY (JUNE THROUGH AUGUST)

	Weekday 67%				Weekend 33%				
Lot *	34%	45%	21%	100%	34%	45%	21%	100%	Grand
	AM	PM	EVE	Total	AM	PM	EVE	Total	Total
1	44	58	28	129	22	29	14	65	160
2	30	39	18	87	15	19	9	43	108
3	21	28	13	63	10	13	6	32	79
4	12	15	7	34	6	8	4	17	44
5	11	15	7	33	5	7	3	16	41
6	8	11	5	24	4	5	3	12	29
7	3	5	2	10	2	2	2	5	14
8	3	5	2	10	2	2	2	5	13
9	3	5	2	10	2	2	2	5	12
	135	181	84	400	68	87	45	200	600

* See Appendix C for geographic location

A random starting point was first selected in each lot

by an employee of the Frankenmuth Chamber of Commerce.

Employee parking areas were avoided. A survey was attached

to the windshield of every fifth vehicle until all the surveys were distributed. If there were not enough cars to distribute all surveys using this sampling interval, then the person dispensing the surveys decided on a different sampling interval to insure the required number of surveys were distributed.

Surveys were placed in plastic bags, to protect the contents from inclement weather, along with a brochure from Frankenmuth (with map), a postage-paid post-card that respondents could send in to win prizes (meals and lodging in Frankenmuth and tickets to Oktoberfest), a postage-paid envelope for the survey, and a cover letter.

DATA COLLECTION AND CODING

Persons who received the survey instruments on their car windshields were asked to mail it back along with the post-card (for the drawing to win lodging or meals in Frankenmuth), to the Michigan Travel, Tourism, and Recreation Resource Center (Center) at Michigan State University. Surveys were marked to show missing data and to clarify any unclear written responses. Data were entered into SPSS[®] by specially trained employees of the Center. Checks were built into SPSS[®] to make sure that out-of-range values could not be entered. This reduced data entry

errors. A series of frequencies were performed on the data to identify possible coding errors. Questionable responses were examined against the completed survey errors and obvious mistakes were recoded.

FRANKENMUTH STUDY - 1989

As mentioned previously the survey was modeled after a similar study conducted in 1989. This was for the purpose of making comparisons of trip and visitor characteristics over the course of ten years.

The 1989 study used a similar survey distribution method (e.g., car windshields). However, there were some differences in the sampling and methods that are important to recognize when comparing the findings from the two studies. In the 1989 study surveys were distributed in thirteen lots and in all but one lot, 10 percent of the parked cars were marked with paint (not including employee parking). However, sampling the paint-marked spaces proved a problem in the winter because of a harsh winter and continuously snow covered lots.

The response rate for the 1989 study was approximately 30%. A response rate of 30% for this method of distribution, without follow-up reminders, is considered very good.

Surveys were placed at 10am, 2pm, and 4pm in a sample scheme not described in detail in the research report. This distribution schedule is similar to the placement time frame of surveys used for the 1999 study, which fall between 9am and 5pm. While it is understood that the 9am to 5pm distribution schedule does not capture the evening market, it does maximize the comparability of the two studies.

The 1989 survey instrument is very similar to the instrument used in the 1999 study. The questionnaire used in the 1999 research used the 1989 survey as the starting point. The Frankenmuth Chamber of Commerce wanted to gather information for comparison with the 1989 study. Changes were made to the survey based on changes in Frankenmuth and in attempt to clarify questions and gain more specific information. Changes made in the survey are discussed in Chapter IV as each section of the questionnaire and the results are presented.

RESPONSE RATE AND NONRESPONSE BIAS

The nature of this distribution survey method, including the inability to send follow-up reminders, generally produces a low response rate. Out of the 4,500 surveys scheduled for distribution, 634 useable surveys

were returned (14%). The target response rate was 33%. While a low response rate was expected, this was much lower than anticipated. The additional incentives offered to increase responses did not appreciably increase the number of responses. Given the very low response rate additional analyses were conducted to assess the quality and representativeness of the data. One problem that was of discovered was that out of the 945 surveys distributed during evening hours, only one survey was returned (see Table 4). This is a response rate of 0.1 percent. The AM and PM time periods received much higher response rates. Due to the extremely low response rate for the evening, the decision was made to drop it from the data set. The surveys represent day-time, not evening visitors. The response rate for surveys distributed during the morning and afternoon periods is 18%. There is no reason to believe that these surveys, especially those tourists who were sampled in the late afternoon, are not representative of those who would have received questionnaires during the early evening hours.

TABLE 4

RESPONSE RATE OF SURVEYS DISTRIBUTED AT DIFFERENT TIMES OF THE DAY

Surveys	AM	PM	EVE
Placed	1,530	2,025	945
Returned	240	393	1
Rate	15.7%	19.4%	0.1%

Response rates across different parking lots did not differ greatly except for three lots (see Tables 5 & 6). Lots number three, four, and seven yielded response rates below 12% while response rates for the other lots were at least 14.7%. Response rates in parking lots near the Bavarian Inn and Zehnders did not differ much from the response to surveys distributed in other lots. This leads one to believe that the results of the study would not be greatly biased by the low response rate.

TABLE 5

RESPONSE RATE FOR EVENING DISTRIBUTED SURVEYS

Lot	Surveys Placed	Surveys Returned	Response Rate
Bronners	1,440	212	14.7%
Zehnders	972	163	16.8%
East Covered	716	56	7.8%
Bavarian Mall	390	37	9.5%
Bavarian Inn	365	58	15.9%
South Bavarian Inn	269	51	19.0%
School Haus	121	14	11.6%

Lot	Surveys Placed	Surveys Returned	Response Rate
CVB Lot	121	20	16.5%
Drury Inn	106	17	16.0%
Total	4,500	628	14.0%

TABLE 6

RESPONSE RATE WITHOUT EVENING SURVEYS

Lot	Surveys Placed	Surveys Returned	Response Rate
Bronners	1,138	212	18.63%
Zehnders	768	163	21.23%
East Covered	566	56	9.90%
Bavarian Mall	308	37	12.01%
Bavarian Inn	288	58	20.11%
South Bavarian Inn	213	51	24.00%
School Haus	96	14	14.65%
CVB Lot	96	20	20.92%
Drury Inn	84	17	20.30%
Total	3,555	628	17.66%

A comparison with the 1989 survey, and also a Tourism Household Survey being performed by the Travel, Tourism and Recreation Resource Center at MSU, was conducted to investigate possible areas on non-response bias. The household survey collects travel and trip information from Michigan and Midwestern states. Data collected from the Household Survey was used to compare findings from this survey to check for potential response bias. The 1989 survey collected data between 10am and 4pm allowing for

even greater reliability in comparing results from the two studies.

The results from the three studies were compared on the number of visitors on overnight trips and the proportion staying overnight in Frankenmuth on the trip. The 1989 survey found that 45% of visitors stayed overnight in Frankenmuth compared to 34% for this study (Table 7). The difference is significant, but the finding is supported by other data from the survey and general knowledge about the area. In general, people visiting Frankenmuth are taking more day trips and visiting other destinations both before and after their visit to Frankenmuth. Also, the supply of lodging facilities in the area around Frankenmuth increased significantly since the 1989 study. Visitors to the area are able to stay closer to the freeway and the Outlet Mall (Appendix C) making a daytrip to Frankenmuth more convenient.

TABLE 7

LODGING FREQUENCY BY STUDY

	Household	1999 Study	1989 Study
Lodging	25.0%	34.0%	45.0%
Motel	85.0%	86.7%	
B&B	0.0%	1.5%	
Camp	5.0%	3.9%	
F&R	6.7%	7.9%	

The age of the respondents was also compared across the two surveys. The age distribution is very similar, except there were more respondents under 25 in the 1999 survey (Table 8). This could, in part, be due to efforts by Frankenmuth to diversify their market by attracting more young families.

Table 8

AGE BREAKDOWN BY STUDY

Age	This Study	1989 Study
Under 25	20.8%	4.9%
25-34	11.0%	14.0%
35-44	15.9%	19.1%
45-54	19.0%	21.6%
55-64	15.2%	23.8%
65-74	13.5%	14.4%
75+	4.6%	2.2%

Finally, income categories were compared between this study and the Household survey. Categories were different between the two studies but could be combined to create three comparable categories. Income also showed no significant differences among the income categories from this study and the Household Survey. Results from the 1989 survey were not included due to problems with the change in

the value of money over time and the income categories used in the 1989 study (see Table 9).

TABLE 9

INCOME BY STUDY

Income	1999 Study	Household Study
Below $31,000	15.3%	22.9%
$31,000-$50,000	26.8%	28.4%
Over $50,000	57.9%	48.6%

Party size was also examined and this was shown to be 2.8 people per party for both the 1989 and 1999 studies. Finally, repeat visitors were also examined and found that in 1989, 72.6% of the people had been to Frankenmuth prior to this trip, while 82% of the people (from the 1999 study) reported having been in Frankenmuth prior to this trip.

The percentage of tourists that ate meals at one of two restaurants estimated from the 1989 and 1999 surveys was very similar. There is also no statistical difference in the number of tourists frequenting the restaurants between those that received surveys in the morning and afternoon (see Table 10). There is no reason to believe that the proportion of restaurant patrons would be different for those sampled in the evening hours.

TABLE 10

PARTY EATING BY TIME OF DAY SURVEY WAS DISTRIBUTED

	Yes	No	Total	% Yes
AM	206	249	455	45.3%
PM	357	376	733	48.7%

Table 11 shows the propensity for individuals to eat a meal by where they parked. This table is based on questions 57 and 60 in the questionnaire where parties are asked whether or not they ate at a particular restaurant during their stay. The data show that people have a tendency to park close to where they plan on eating and then walk to the other attractions around town either before or after eating. In those lots that are not adjacent to one of the restaurants, the averages for eating at Zehnders or Bavarian Inn Restaurant are relatively close.

TABLE 11
PARTY EATING BY PARKING LOT

	Bavarian Inn				Zehnders			
	Yes	No	Total	%	Yes	No	Total	%
Bronners	100	104	204	49.0%	83	115	198	41.9%
Zehnders	39	113	152	25.7%	135	23	158	85.4%
East Covered	28	23	51	54.9%	11	39	50	22.0%
Bavarian Mall	9	25	34	26.5%	6	26	32	18.8%
Bavarian Inn	41	15	56	73.2%	14	35	49	28.6%
South Bavarian Inn	44	7	51	86.3%	9	37	46	19.6%
School Haus	7	7	14	50.0%	4	10	14	40.0%

	Bavarian Inn				Zehnders			
	Yes	No	Total	%	Yes	No	Total	%
CVB Lot	12	8	20	60.0%	4	15	19	21.1%
Drury Inn	7	10	17	41.2%	6	9	15	40.0%

Finally, the longer a party stayed, the more likely
they were to eat at one of the restaurants. Table 12 shows
the comparison of overnight versus day visitors and their
tendency to eat at either restaurant. It is also
interesting to note that visitors staying overnight had no
greater tendency to eat at either restaurant.

TABLE 12

OVERNIGHT AND DAY VISITORS EATING HABITS

	Bavarian Inn Restaurant			Zehnders		
	Yes	No	% Yes	Yes	No	% Yes
Overnight	140	91	60.6%	130	94	58.0%
Day	136	198	40.7%	135	191	41.4%

Overall, it appears that there is not a significant
degree of non-response bias. However, the lack of data on
non-respondents makes a scientific assessment impossible.
The conclusion was that the data was representative and
provided a solid basis for developing the model. This study
will, therefore, go forward on the assumption that the
study is representative of visitors to Frankenmuth.

Chapter IV

DATA PREPARATION, MODEL ANALYSIS AND RESULTS

Introduction

This chapter presents the analyses that were part of the model development process. The chapter includes the following sections: 1) Data Preparation and Analysis Survey Analyses, 2) Estimation of the Visitor Estimation Model, and 3) Evaluation of the Model.

ANALYSIS PROCEDURES

Before it was analyzed the data were examined for coding errors and whenever possible they were corrected by checking against the completed surveys. However, as with any project data entry errors will occur because of typographical errors or inability to interpret a respondent's writing. As already mentioned, the data entry range controls incorporated into the data entry process eliminated much of the entry errors.

The data was examined for outliers defined as values greater than three standard deviations from the mean for that variable. For example, some respondents mistakenly

answered the party size question by providing their entire travel party which sometimes included persons traveling in more than one vehicle. The question clearly asked only for the number of persons traveling with them to Frankenmuth in the same vehicle since vehicles were sampled. Therefore, parties larger than three standard deviations from the mean were removed from the sample to provide a more representative view of the average party size.

The data analysis was focused on producing information needed to develop the model. An analysis of the residence zip-code of survey respondents was performed to identify and remove residents of Frankenmuth from the data set. It was assumed that each survey that was from the occupants of the vehicles that were sampled represented a travel party. The average number of persons per visitor/tourist party was calculated as a basis for estimating the percentage of tourists that ate at one or both of the restaurants. Just estimating the percentage of parties that ate at either or both of the restaurants was not sufficient to estimate the percentage of tourists that ate at either or both of the restaurants because of differences in party size. Additionally, it was necessary to calculate the number of meals respondents ate at the Bavarian Inn Restaurant and Zehnders of Frankenmuth. The survey collected information

on the number of times (meals) they dined at both of these restaurants during their trip.

Data on the numbers of meals served between June 1998 through May 1999 were provided by Zehnders of Frankenmuth and the Bavarian Inn Restaurant. This information along with the number of tourist parties and percentage of tourists that ate one or meals at either or both restaurants provided the primary input to develop the model. The restaurants also provided an estimate of the percentage of their guests that lived in Frankenmuth. Each restaurant reported that about 2% of its meals are served to residents of Frankenmuth. Resident meals were then deducted from the total meals served by the restaurants leaving the number of meals served to tourists. Table 13 reports the number of meals served by both restaurants and the estimated number served to tourists

TABLE 13

**TOTAL MEALS, RESIDENT MEALS, AND TOURIST MEALS SERVED BY
THE BAVARIAN INN AND ZENDERS IN 1999**

Month	Total Meals	Estimated Resident Meals	Estimated Tourist Meals
Jun-98	117,350	2,347	115,003
Jul-98	153,551	3,071	150,480
Aug-98	164,590	3,292	161,298
Sep-98	129,712	2,594	127,118
Oct-98	144,634	2,893	141,741
Nov-98	134,646	2,693	131,953
Dec-98	143,537	2,871	140,666
Jan-99	55,119	1,102	54,017
Feb-99	84,560	1,691	82,869
Mar-99	74,534	1,491	73,043
Apr-99	88,897	1,778	87,119
May-99	105,191	2,104	103,087
Total	1,396,321	27,926	1,368,395

The next step was to estimate and subtract multiple meals to eliminate the potential of double counting visitors (Table 14). Since some tourists ate more than one meal at either or both of the two restaurants during their trips 1.4 million tourist meals does not translate into 1.4 million tourists. For example, if a party of three people visited Frankenmuth and two of the party ate one meal at both restaurants, and the third individual only ate one meal at just one of the restaurants, the total meals would be five even though only three people were in the party visiting Frankenmuth. In this case, it is necessary to

remove the multiple meals in order to give an accurate

picture of the number of tourists in the party.

TABLE 14

ESTIMATED NUMBER OF INDIVIDUAL TOURIST MEALS BY MONTH ESTIMATED FROM THE 1999 SURVEY

Month	Total Meals Served	Resi-dent Meals	Total Tourist Meals	Average Meals Per Tourist	Number of Multiple Meals	Individual Tourist Meals
Jun-98	117,350	2,347	115,003	1.17	17,012	97,991
Jul-98	153,551	3,071	150,480	1.08	11,495	138,985
Aug-98	164,590	3,292	161,298	1.07	10,791	150,507
Sep-98	129,712	2,594	127,118	1.52	43,445	83,673
Oct-98	144,634	2,893	141,741	1.02	2,674	139,067
Nov-98	134,646	2,693	131,953	1.17	19,378	112,575
Dec-98	143,537	2,871	140,666	1.05	6,063	134,603
Jan-99	55,119	1,102	54,017	1.03	1,334	52,683
Feb-99	84,560	1,691	82,869	0.91	0	82,869
Mar-99	74,534	1,491	73,043	1.12	7,897	65,146
Apr-99	88,897	1,778	87,119	1.49	28,489	58,630
May-99	105,191	2,104	103,087	0.93	0	103,087
Total	1,396,321	27,926	1,368,395	1.13	148,578	1,219,816

Finally, it was necessary to estimate the percentage

of tourists that ate at either or both of the restaurants

in order to estimate the number of person trips. Given

that the meal data were combined for both restaurants, the percentage of people eating at either restaurant was needed to calculate total person trips. This was done by determining the percentage of people that ate at only the Bavarian Inn, only at Zehnders of Frankenmuth and both of the restaurants during their trip. If one million tourist meals were served, and 50% of the tourists ate only one meal at one of the two restaurants, the model would estimate that there were two million person trips during the time period (one million that ate one meal, and one million that didn't eat any meals at these restaurants).

VISITOR ESTIMATION MODEL

The model was utilized to estimate the number of person trips to Frankenmuth for the twelve-month period June 1998 to May 1999. Although it is technically possible to utilize the model to also estimate monthly tourist visits, the low overall response rate to the survey for any particular month could have been subject to large sampling errors.

The number of tourist meals was first estimated by subtracting the estimated number of resident meals (2% of all meals served) from the total meals served at the two restaurants. The model estimates that approximately 1.37

million meals were eaten by tourists at the two restaurants

during the 12-month period

FIGURE 4
TOURISM VISITATION ESTIMATION MODEL - RESULTS

$$1) \quad TM_1 = M - RM$$

1,368,395 = 1,396,321 - 27,926

> where: TM_1 is tourist meals at the Bavarian
> Inn & Zehnders; M is the total number of meals
> served; and RM are resident meals.

The purpose of the second equation is to remove

multiple meals eaten by tourists. This includes more than

one meal eaten at the same restaurant or both restaurants.

From the survey data it is estimated that approximately 13%

(157,426 meals) of the tourist meals were in this category.

$$2) \quad MM_1 = TM_1 - (TM_1 / AM_1)$$

157,426 = 1,368,395 - (1,368,395/1.13)

> where: MM_1 is the number of multiple meals
> eaten by individuals surveyed (only the second or
> greater meal is deleted here, the first meal
> remains); TM_1 = tourist meals; AM_1 is the average
> number of meals eaten per person surveyed.

Equation three utilizes the output from the first two

equations to estimate person trips to Frankenmuth.

Multiple meals are first subtracted from total tourist

meals and multiplied by the percentage of people eating at

on

ne

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one or both restaurants. This produces an estimate of
nearly 1.7 million person trips to Frankenmuth from June
1998 to May 1999.

$$3) \quad TV = (TM_1 - MM_1) / PT$$

1,672,609 = (1,368,395 - 157,426) / 72.4%

where: TV = person trips to the destination
for the time period; TM_1 = tourist meals from the
equation one; MM_1 = multiple meals purchased by
tourists at the restaurants; and PT = percentage
of tourists that ate at either restaurant during
their trip.

The model can also be used to derive monthly estimates
of tourist trips. Again, caution should be used when using
monthly estimates because they were derived from small
sample sizes (Table 15). They range from nearly 69,000 in
April to 192,000 in August. The sum of the monthly person
trip estimates is lower by approximately 11,000 trips than
the estimate derived from equation three. The monthly
estimates have higher sampling error due to smaller sample
sizes.

TABLE 15

ESTIMATED MONTHLY TOURIST VISITS

	Meals	Resident Meals	Tourist Meals	Person Meals	Eat %	Total Person Days	n
Jun-98	117,350	2,347	115,003	98,293	79.4%	123,795	71
Jul-98	153,551	3,071	150,480	139,333	85.7%	162,582	52

	Meals	Resident Meals	Tourist Meals	Person Meals	Eat %	Total Person Days	n
Aug-98	164,590	3,292	161,298	150,745	78.7%	191,544	90
Sep-98	129,712	2,594	127,118	83,630	95.8%	87,296	53
Oct-98	144,634	2,893	141,741	138,961	75.0%	185,281	54
Nov-98	134,646	2,693	131,953	112,780	70.5%	159,972	50
Dec-98	143,537	2,871	140,666	133,967	82.5%	162,384	41
Jan-99	55,119	1,102	54,017	52,443	74.3%	70,583	33
Feb-99	84,560	1,691	82,869	91,064	69.2%	131,595	38
Mar-99	74,534	1,491	73,043	65,216	84.4%	77,270	58
Apr-99	88,897	1,778	87,119	58,469	85.0%	68,787	53
May-99	105,191	2,104	103,087	110,846	77.0%	143,956	40
Total				1,235,747		1,565,046	633

MODEL EVALUATION

Assessing the model produced estimates of tourist visits is difficult because of the unavailability of other scientifically gathered estimates of tourism activity. It was therefore necessary to compare the model estimates with a combination of indirect tourism data including traffic counts, lodging tax, and proprietary estimates of person trips (see Table 16).

TABLE 16

INDEPENDENT ESTIMATES OF TOURISM VOLUME USED TO EVALUATE MODEL

Measures of Tourism	Survey & Model Estimate	Source	Outside Estimate	Difference	Potential Reasons for Difference
Room nights	162,400	Saginaw County, MI	127,450	27%	Sampling Error, Different Dates, Room Costs, Length of Stay
Person trips	1,672,609	MDOT	5,726,095	-70%	Resident Traffic, Business Traffic
Person trips	2,002,167 (based on 1995 meal counts)	U.S. Travel Data Center	1,360,754	47%	Sampling Error, Difference in Tourist Definition
Person trips	2,002,167 (based on 1995 meal counts)	D.K. Shifflet & Assoc.	2,002,200	0%	Differences in Tourist Definition

Footnote: Survey/model estimates use a combination of survey data and model estimates to obtain the figures for the various tourism activities.

The first comparison is the model estimate against traffic counts at the Cass River Bridge on the south side of Frankenmuth which is the main entry point into the city. The total number of cars coming into Frankenmuth at this point of entry (Table 17) was reduced by eliminating obvious business vehicles estimated by the Michigan Department of Transportation to be 25% of the vehicles.

The estimated number of commercial vehicles is presented in column three in Table 17. The final column is the number of times resident and non-resident vehicles crossed the counter at the Cass River Bridge.

TABLE 17

TOTAL, COMMERCIAL AND PRIVATE VECHICLE COUNTS AT THE CASS RIVER BRIDGE ON M-83 ENTERING FRANKENMUTH FROM THE SOUTH

Month	Total Vehicle Counts to Frankenmuth	Estimated Commercial Traffic Counts (25%)	Visitor & Resident Traffic Counts
June-98	229,245	57,311	171,934
July-98	241,645	60,411	181,234
August-98	243,099	60,775	182,324
September-98	218,769	54,692	164,077
October-98	233,320	58,330	174,990
November-98	218,822	54,705	164,117
December-98	229,206	57,301	171,905
January-99	210,733	52,683	158,050
February-99	227,662	56,915	170,747
March-99	217,155	54,289	162,866
April-99	234,519	58,629	175,890
May-99	222,537	55,634	166,903
Total	2,726,712	681,678	2,045,034

The total number of times personal vehicles entered Frankenmuth over this counter during the time period is 2,045,034. This number includes people who live in nearby communities, but work in Frankenmuth, and resident travel into and from Frankenmuth. Multiplying the number of

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vehicles by an average party size of 2.8 (estimated from the survey) produces an estimate of 5,726,095 noncommercial person trips into and out of Frankenmuth. Dividing this number in half yields an estimate of 2,863,048 person trips (tourist and resident trips) to and through Frankenmuth. There is no scientific information to determine how many cars passing over the traffic counter are transporting tourists that actually stop and visit Frankenmuth. Also, the ratio of tourists to residents crossing this counter in unknown. All that can be concluded is that the model estimate is lower than the maximum number of person trips estimated from traffic counts. The traffic count data reveals no obvious error in the model's estimate.

The next comparison utilized information on overnight stays (lodging taxes) in Frankenmuth. Based on data obtained from the visitor survey it is estimated that approximately 34% of 597,000 parties that visited Frankenmuth stayed overnight in Frankenmuth. However, this estimate may be high because the sampling method likely over-sampled people staying overnight on their trips and were twice as likely to receive a survey as were day visitors due to the every other day sampling scheme. The sampling bias requires an adjustment. The estimated percentage of parties staying overnight is reduced by half,

from 34% to 17%. It is estimated that 101,500 parties stayed overnight in Frankenmuth on their trips (597,000 x 17%).

Since the average overnight party spent 1.6 nights in Frankenmuth, the estimated number of room nights is 162,400 (101,500 x 1.6) assuming that all parties stayed in commercial lodging establishments. The Saginaw County Visitor and Convention Bureau reported that approximately $520,000 was collected in room taxes (4%) by lodging establishments in Frankenmuth during the same year. That translates into $13 million in room revenues ($520,000/4%). Based on the results from the survey it was estimated that parties staying overnight in hotels/motels on their trip spent $102 per night per party on hotel/motel lodging. Based on the combination of these data it is estimated that Frankenmuth hotels/motels produced 127,450 room nights over the year ($13,000,000/$102 = 127,450 room nights).

If a party rented more than one room on their trips, then the estimated $102 per night room cost is obviously too high. However, since the average consisted of 2.8 persons, it is likely that relatively few parties rented more than one room. If 10% of all parties rented more than one room, reducing the average room price to $90, the model

would produce an estimate of 144,444 ($13,000,000/$90) room nights.

There are a number of reasons why the model estimate of 162,400 room nights is higher than either of the estimates based on room taxes. First the room taxes reported by the Saginaw County is for 1998 (January through December) while the survey was conducted between June 1998 to May 1999. While both are 12 months in duration, they are not the same months. The survey's sampling error, estimated at four percent, may account for some of the difference between the two estimates. This could decrease the estimate of 162,400 room nights to approximately 155,000 room nights, closer to the estimate based on room taxes. Also, the estimate that parties spent $102 per night for their rooms may be inflated, because of the tendency of survey respondents to include other items (movies, room service, etc) when reporting lodging expenses. This would decrease the average room rate and increase the number of room nights.

Finally, other secondary data were available on visitation to Frankenmuth, but only for 1995. Obviously using this information to compare with the model estimates of 1999 visitation is problematic given that tourism and tourist markets are continuously changing.

US Travel Data Center's Travel Scope data combined with a Regional Travel Market Survey (TTRRC, MSU) were used to estimate 1,360,754 visitor days to Frankenmuth in 1995. This estimate was derived by using the Travel Scope's overall estimate of person trips to Michigan, and the Regional Travel Market Survey estimate of Frankenmuth's share of Michigan tourist trips (approximately 5%) to obtain Frankenmuth's person trips.

D.K. Shifflet & Associates' data estimated annual person trips in 1995 at 2,002,200. The two Frankenmuth restaurants served 1,671,442 meals in 1995. Inputting this meal count data into the model produces an estimate of 2,002,167 person trips for 1995. While the model generated estimate is very close to the Shifflet estimate, it must be recognized that they are based on different definitions of a tourist. While it is uncertain whether the Shifflet definition of a tourist is based on trips of at least 50 or 100 miles, it is certain that they did not use a zipcode definition similar to the one that was employed in this study. Therefore, it hard to draw any significant conclusions about the model's reliability based on the similarity of the two estimates.

However, meals served by Zehnders and the Bavarian Inn have declined from nearly 1.7 million in 1995 to about 1.4

million in 1998-1999. This difference in meals served
(approximately 300,000) is similar to the change in person
trips estimated by the model in 1995 (2,002,167) and 1998-
1999 (1,672,609). While caution should be used in
proclaiming the estimate produced by this model accurate,
it is encouraging to see some validation of the results.

While neither the traffic data nor the room tax data
show any serious errors in the estimates made by the model,
these data from D.K. Shifflet give credibility to the
model's estimate for 1995. These data also show that the
estimate for 1998-1999 is consistent with the change in
total meals served over that time period and is most likely
an accurate depiction of person trips to Frankenmuth for
that 12-month period.

OTHER RELATED RESULTS

This section reports findings from the survey with
special emphasis on results that do or could have a
particular impact on the estimate of person trips estimated
by the model. This section also compares results from the
survey conducted as part of this study with findings from
the 1989 survey in order to identify any significant
changes in tourists or their trip behavior.

Figure 5 shows that visiting Frankenmuth was the only purpose for the trips of a majority (62%) of 1999 respondents. Also, less than five percent of those surveyed in 1999 made a spontaneous decision to visit Frankenmuth (i.e., they did not plan to visit Frankenmuth before departing on their trip). The increase in Frankenmuth as the only purpose of the trip can be attributed to increased promotion of Frankenmuth as a tourist destination. During this period Frankenmuth also expanded the number of major community festivals and added more tourist destinations making it more of a destination attraction.

In the 1989 study respondents were asked to rank, in terms of importance to them, a list of different trip related activities. In the 1999 study they were also asked whether they participated in those activities. The results are presented in Table 18. While slightly more visitors participate in retail shopping than dine at Frankenmuth restaurants, dining is considered more important by more visitors. The results show that more than three quarters (77.1%) dine while on their trips to Frankenmuth, indicating that estimating visitation based on meals is a reasonable approach, especially since the restaurants are willing to share meal count information. Also, there is

currently no tourist information from other popular tourist

activities available (e.g., festival attendance, shopping).

TABLE 18

**PERCEIVED IMPORTANCE AND PARTICIPATION IN
RECREATIONAL/TOURIST ACTIVITIES IN FRANKENMUTH - 1999
STUDY RESULTS**

Trip Activities	Participated	Very Important	Important	Not Important
Sightseeing	56.1%	42.4%	49.2%	8.5%
Dining	77.1%	58.0%	37.2%	4.8%
Shopping	79.3%	50.1%	42.2%	7.7%
Historic Attraction	19.2%	33.1%	52.1%	14.8%
Special Event	11.4%	98.6%	0.0%	1.4%
Other	11.6%	87.8%	12.2%	0.0%

An important piece of information for estimating

visitation is the number of persons comprising tourist

parties. Monitoring changes in party size and

characteristics is important for marketing purposes, as an

important input to the model, and to assess the models

estimates (e.g., against lodging tax estimated room

nights). The 1989 and 1999 surveys both estimated that the

average party size is 2.8 persons.

FIGURE 5

DISTRIBUTION OF VISITORS BY AGE GROUP - 1989 AND 1999 STUDY RESULTS
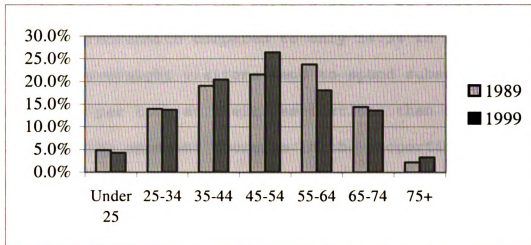
More than half (62.5%) of the persons completing the 1989 were women compared to 72.5% of the 1999 respondents. There may be a bias in that men, especially older men, may be less likely than their spouses/partners to complete the survey. However it may reflect the trend of more women tourists. Figure 5 compares the age distribution of tourists to Frankenmuth over the ten years between the two surveys. The most significant change is the increase percentage of visitors in the 35-54 age group compared to 1989. This may be in part due to the increased marketing emphasis on attracting families, new attractions aimed at families, and the increase in the number of baby boomer families. The percentage of older persons, which has

traditionally been Frankenmuth's main market, declined
slightly over the 10 years.

In 1989, 45.0% of the parties stayed at least one
night in Frankenmuth compared to only 34.3% in 1999 (Table
6). Since overnight visitors tend to spend substantially
more money per trip at their destinations than do day
visitors, the apparent decrease in the proportion of
overnight tourists has economic significance. This could
in part be due to a lodging capacity constraint indicated
by increased occupancy rates in Frankenmuth lodging
establishments. Also, as already mentioned there has been
a proliferation of lodging establishments around
Frankenmuth including Birch Run.

Visitors in 1999 were more likely to visit other
places before and/or after their time in Frankenmuth than
was the case in 1989 (Table 19). The time they spend in
Frankenmuth on their trips also declined slightly. The
main places visited both before and after coming to
Frankenmuth were Birch Run, Mackinaw Island, and Soaring
Eagle Casino in Mt. Pleasant. The Soaring Eagle Casino and
the Shopping Outlets at Birch Run are within an hour drive
of Frankenmuth and both have lodging alternatives. The
increased number of tourists visiting other places before
and after Frankenmuth, coupled with the decrease in the

amount of time spent in Frankenmuth suggests that the

Frankenmuth CVB should be concerned about the potential for

individuals visiting these places and not Frankenmuth or

continuing to limit time spent in Frankenmuth.

This may explain why visitors are staying in lodging

establishments outside of Frankenmuth. It is likely that

both the proportion of overnight visitors is down, and more

of the overnight visitors are staying in lodging in nearby

areas for various reasons including Frankenmuth room

capacity, especially during the peak season.

TABLE 19

**FRANKENMUTH TOURISTS WHO VISIT OTHER PLACES ON
THEIR TRIPS**

	1999	1989
Visit other places before visiting Frankenmuth	35.1%	23.5%
Visit other places after Frankenmuth	38.0%	23.4%

Data in Table 20 report the frequency of visits to

Frankenmuth over the 10-year period. In 1999, about a

quarter of respondents (27.5%) visited Frankenmuth more

than three times per year compared to 18.5% in 1989. This

is a significant increase in multiple-visits. While in one

way this is good news, this result, along with the

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reduction in overall visitation from 1989 to 1999,

indicates that the total number of visitors and the

percentage of new visitors have declined.

The greater proportion of repeat visitors may explain

in part the change in informational sources used to plan

trips to Frankenmuth. Repeat visitors rely less on

promotional materials to decide whether to visit

Frankenmuth and what to do during their visits. This likely

accounts for the dramatic increase (300%) between 1998 and

1999 in the percentage of respondents who did not use any

promotional materials when planning their trip to

Frankenmuth. It also suggests that the CVB's promotional

strategy needs to be a combination of reminder advertising

(e.g., time for another trip) and new market development.

TABLE 20

**FREQUENCY OF VISITS TO FRANKENMUTH - 1989 AND 1999
STUDY RESULTS**

Visits Per Year	1999	1989	% Change
4+ Visits	27.8%	18.5%	50.3%
3 Visits	12.7%	8.4%	51.2%
2 Visits	18.5%	18.5%	0.0%
1 Visit	19.7%	26.6%	-25.9%
Visit every two years	7.4%	10.0%	-26.0%
Visit less often than once every two years	13.9%	18.1%	-23.2%

Table 21 reports party spending while on trips to Frankenmuth estimated from the 1989 and 1999 surveys. Overall trip spending increased from an average of about $200 in 1989 to over $300 in 1999. Most of the increase is attributable to inflationary increases in the cost of goods and services. Between January 1989 and 1999, the CPI (Consumer Price Index), the most commonly used measure of overall inflation, increased from 121.1 to 229.2 or 89.3%. The U.S. lodging price index increased from 130 to 164.3 or 26.4%. The Detroit area meals away from home index increased from 120.4 to 159.4 or 32.7%. Mean party spending in Frankenmuth increased from $199.54 to $310.89 or 55.8%; restaurant spending increased from $43.60 to $57.24 or 31.3%; and lodging spending increased from $39.87 to $99.36 or 149.2%. These statistics lead to the following conclusions:

- While average party spending increased 55.8% this is less than the rate of inflation. In relative terms spending by tourists has decreased. This coupled by the decrease in overall visitation indicated that overall tourist spending is down.

- The increase in restaurant spending almost exactly tracks the increase in the restaurant index,

suggesting little change in the number of customers served or their per party spending.

• Lodging spending increased far greater than the U.S. lodging index and the overall CPI, suggesting that the lodging sector of Frankenmuth's tourism industry fared well over the last decade. In part this is because new higher priced lodging establishments have been developed.

TABLE 21

PARTY TRIP SPENDING in 1989 AND 1999

Spending	1999	1989	% Change
Lodging	$99.36	$39.87	149.2%
Restaurant	$57.24	$43.60	31.3%
Grocery	$11.26	$9.52	18.3%
Gas	$11.01	$7.18	53.3%
Shopping	$106.49	$78.40	35.8%
Recreation	$9.31	$0.00	NA
Other	$16.22	$20.97	-22.7%
Total	$310.89	$199.54	55.8%

The respondents to the 1989 survey were asked whether they had attended and whether or not they planned (yes or no) to attend a number of different Frankenmuth events in the future. The only difference was that in the 1999 survey respondents could answer yes, no or unsure (Table 22).

While the Bavarian Festival was the most frequently attended event in the past, it also is associated with the greatest negative difference between "have attended" and "plan to attend" suggesting this event may have peaked in its popularity. On the other hand, the Oldies Fest and Lighting Celebration would appear to be positioned for the greatest growth into the future. These results provide insight into a possible way of increasing person trips to Frankenmuth by placing an emphasis, both in time and money, on the festivals that appear to provide the most opportunity for growth.

TABLE 22

PAST AND PLANNED PARTICIPATION IN FESTIVALS - 1999 STUDY RESULTS

	Have Attended		Plan to Attend		
Festival	**Yes**	**No**	**Yes**	**No**	**Unsure**
Zehnders Snowfest	32.4%	67.6%	34.8%	21.5%	43.7%
Bavarian Festival	42.5%	57.5%	35.0%	16.4%	48.3%
Volkslaufe	6.5%	93.5%	6.9%	50.0%	43.1%
Summer Music Fest	23.5%	76.5%	23.2%	24.1%	52.7%
Auto Fest	14.0%	86.0%	17.9%	39.0%	43.1%
Oldies Fest	8.6%	91.4%	16.3%	34.9%	48.8%
Arts & Crafts Display	20.5%	79.5%	25.6%	22.8%	51.5%
Arts & Crafts Show	21.7%	78.3%	26.9%	21.0%	52.1%
Oktoberfest	34.5%	65.5%	38.8%	17.5%	43.7%
Lighting Celebration	23.1%	76.9%	32.2%	20.0%	47.8%

The 1989 and 1999 surveys asked respondents to rate selected Frankenmuth attributes. Visitors in 1999 considered Frankenmuth more hectic, urban, fake, and tacky than did visitors in 1989 (Table 23). In large part, this may be attributed to new development and construction that has been going on in Frankenmuth. On-going construction equipment with workers everywhere may give the impression to some of things being more urban and hectic. On the positive side, a smaller percentage of visitors perceived that Frankenmuth's products and services are expensive. This may be a positioning dimension to incorporate into their advertising messages.

TABLE 23

CHANGE IN RATINGS OF SELECTED ATTRIBUTES BETWEEN 1989 AND 1999

	1989	1999	Change
Not Scenic	1.9%	2.9%	1.0%
Not Easy	7.5%	8.9%	1.4%
Unfriendly People	2.3%	3.2%	0.9%
Poor Tourist Info	6.9%	7.5%	0.6%
Rarely Advertised	9.7%	9.5%	-0.2%
Poor Place to Shop	4.7%	4.1%	-0.6%
Not Historic	7.8%	9.0%	1.2%
Hectic	9.7%	13.8%	4.1%
Few Things to See	3.5%	5.9%	2.4%
Unsafe	2.3%	2.9%	0.6%
Poor Lodging	2.4%	4.5%	2.1%

	1989	1999	Change
Poor Restaurants	3.4%	3.6%	0.2%
Expensive	15.2%	11.4%	-3.8%
Urban	11.3%	14.5%	3.2%
Dirty	0.6%	2.7%	2.1%
Fake	4.6%	8.0%	3.4%
Tacky	1.6%	4.8%	3.2%

Conclusions

A comparison of the results form the 1989 and 1999 surveys provide an interesting perspective on tourism and tourist market trends. It appears that Frankenmuth has experienced a significant erosion in its tourism market. The data indicate that Frankenmuth has had a decrease in the amount of overnight visitors as a percentage of overall person trips. This, and other data, would indicate an increase in the proportion of day visitors who visit a variety of places on their trips possibly staying overnight outside Frankenmuth (e.g., Birch Run, Mt. Pleasant). In short, all data point to the conclusion that the number of tourist trips to Frankenmuth have declined since 1989.

Total meals served at the two restaurants have gone down approximately 300,000 meals or 14% since 1995. Also, after adjusting for inflation, the amount of money spent by tourists also declined over the ten years between the surveys.

If, as the comparison of the survey findings indicates, visitors are spending more time in other locations both before and after visiting Frankenmuth, there is a concern that they may replace Frankenmuth with another destination. At the same time it indicated the potential for multi-destination packaging and cooperative marketing.

These and other data previously considered in this chapter indicate that these marketing data must be carefully considered if Frankenmuth is to at least keep its market share, if not increase it by expanding its markets. This might be done through building attendance at special events and/or adding more of them or by providing promotional packages that include lodging. These data may also point to the need for additional attractions that families can enjoy together and that will cause children to bring their parents to Frankenmuth instead of the other way around.

Chapter V

CONCLUSIONS AND RECOMMENDATIONS

Introduction

The purpose of this study was to create and test a model

for estimating visitors to a dispersed (community) tourism

destination. The specific objectives for the study were as

follows:

Objective 1: Develop and test a method for accurately
     estimating the number of person trips to a destination
     using Frankenmuth, Michigan as a case study.

Objective 2: To compare findings with findings from a
     similar 1989 study. To evaluate changes over
     the time period and identify trends to verify
     estimates of person trips produced by the model.

Objective 3: Assess the validity of the model produced
     estimates of tourism visitation using other tourist
     counts and measures of tourism.

Objective 4: Estimate the cost and identify the technical
     requirements of applying this method on a regular
     basis in Frankenmuth and also in other communities.

The review of literature clearly indicated the

importance and need for accurate estimates of tourist

person trips for marketing, feasibility studies, and

economic impact assessment. The literature that was

reviewed also revealed a number of significant problems

with various methods being used to estimate visitation,

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including those used to estimate attendance at festivals. No existing model was identified that would provide accurate estimates of tourist visits to communities such as Frankenmuth.

Frankenmuth has two "major" restaurants that track meals which provided an opportunity to develop and test a model for estimating tourist person trips. The model developed for this study estimated that nearly 1.7 million people visited Frankenmuth (during the study period). Other data, including traffic counts and lodging taxes, were used to evaluate the accuracy of the model produced estimate. No significant discrepancies were found between the model estimates and other measures of tourist visits. While it is true that these other pieces of data do not allow for direct extrapolation to total person trips, it was possible to check for obvious errors in the tourist person trip estimates. No major discrepancies were identified leading to the conclusion that the results of the model are reasonably accurate.

COSTS

The costs associated with using this model are favorable compared with other estimation methods reviewed as part of this study. Visitor data from the business or

attraction would be gathered every year and applied to the research data gathered in the first year. Information on whether or not people visited the business or attraction would only need to be gathered every three to five years to test for changes in rates of usage or visitation.

If the project is undertaken by a local convention and visitor's bureau or chamber of commerce, the costs associated with applying the model can be minimized. Costs then are limited to copying the instrument, other pieces of information placed with the survey, postage, and processing of the data. When surveys were placed on vehicles, the package included the survey, a cover letter, brochure from Frankenmuth, the return envelope (postage paid), and a postage-paid postcard for people to enter a drawing for meals and an overnight stay in Frankenmuth. All of these pieces of information were placed in a ziplock bag in order to protect the contents from inclement weather after being placed on the vehicles.

In Frankenmuth, each employee of the CVB and Chamber of Commerce was asked to place the surveys on vehicles a couple of times each month saving money over having employees of a research consultant place the surveys. Employees took turns placing the surveys whether the schedule called for morning, afternoon, or evening

placement thereby minimizing disruption in their other job related responsibilities. Also, it is recommended that SPSS®, spreadsheet, or similar computer program, be used to enter and analyze the data. SPSS® allows the programmer to setup the data file such that many possible input errors can be avoided. For example, if a question asked is input yes (=1) or no (=0) and someone entering the data accidentally tries to enter a two, then the program will not allow this to happen and will cause a sound and message to be displayed allowing the person to correct the mistake. It is also possible to enter the data into a spreadsheet program; however, more keystroke errors are likely due to the relative inability of the program to be setup to lock out erroneous entries.

This study was conducted in connection with an update of Frankenmuth's marketing study. This made the survey longer than necessary if just collecting data to estimate person trips was the goal, but it does allow the client to generate other useful information. A large postcard would allow a community or other destination the information necessary to calculate trips. However, budget constraints and the need for other information must be taken into account when looking at the length of the instrument. Remember that longer surveys tend to generate a lower

response rate. However, if the instrument can gather more information without reducing the response rate too much, then it may be possible to save money on brochures, ziplock bags (if this method is used for other research), etc.

This study had an original budget of $7,000; approximately $4,000 covered the cost of graduate assistantships. It is estimated that a CVB, or similar agency, could produce the estimates for approximately $1,000. This assumes that the agency already has the necessary software and in-house expertise to analyze the data. This estimate also assumes that a one-page survey is used to gather the required data.

MARKETING IMPLICATIONS

The cost associated with collecting data is one of the main concerns for any research project. However, a data series that collects similar data over the years can be very beneficial if businesses are to understand the past, present, and probable future. Very few destinations in the tourism and recreation industry currently collect any detailed longitudinal data. There are also very few longitudinal studies conducted by universities related to recreation and tourism. Most of the studies conducted are one time, grant related studies that are rarely repeated or

revisited. However, tourist businesses, destinations and destination marketing organizations have a great deal to gain from longitudinal studies that provide comparable estimates of tourist visits.

Certainly there are observable trends that can be found without the use of formal research. For example, parking lots may become less full or sales may decrease; however, there are other subtle changes that are more difficult to appreciate without some form of structured research. It may be possible that, as was the case in Frankenmuth, while trips to Frankenmuth may be fairly steady, or slightly declining, the actual number of distinct tourists coming to Frankenmuth has declined over the last ten years. Parking lots have become no less full and sales are fairly steady, but a decrease in person trips was found through gathering other information and comparing it with data from 10 years ago. It may have been possible to deduce this from a one time study, but the comparison with the 1989 study makes the trend more clear and reliable.

Frankenmuth has more individuals coming more frequently, while having an overall decline in the number of people that come once a year or less often. Frankenmuth experienced a decline in first time visitors from 16% of

total parties in 1989 to only 10% in 1999. Also, the percentage of parties coming to Frankenmuth on overnight trips declined from 45% in 1989 to 34% in 1999. These are trends that would be difficult, if not impossible, to deduct from mere observation of people around the town. However, the use of longitudinal studies clearly shows the decline in first time visitors and overnight trips and allows Frankenmuth the opportunity to alter its marketing, events, and other efforts to either focus on the current markets or make attempts to attract new markets.

While these specific estimates of visitation statistics pertain specifically to Frankenmuth, the model and general principles apply to any destination or event. Determining the information that is needed/wanted and finding a way to collect that information periodically will make it possible for destinations to make better informed decisions on where to focus advertising, promotion, development, event, and other efforts. Making better informed decisions, in general, provides better results and wastes less money and time.

DATA NEEDS

The model developed and applied in this study has some specific definitional, informational and data requirements.

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First, the definition of a "tourist" to be used in the study must be determined. This is necessary to distinguish between locals and tourists. It was decided that, for this study, persons living outside the Frankenmuth zipcode area (48734) would be considered tourists. Other studies define a tourist as an individual that travels more than 50 miles from their permanent residence. An a priori decision must be made to prepare the survey instrument and when comparing the estimate produced by the model with outside estimates.

Second, visitation data must be collected from the attraction or business selected for use in the study. In the case of this study it was two restaurants. But, it could be a casino, hotel, museum or tour. Visitation data should be available on a monthly basis. This business/attraction must be open the entire tourist season, in Frankenmuth's case year round, in order to ensure an accurate count of tourists.

The survey that collects information needed for the model must collect data on the number of people in the vehicle. While the person being surveyed may be traveling in a party that includes two or more vehicles, the survey should collect data only about the individuals traveling in the vehicle with that person. This must be presented clearly in the survey, and the language used must be

pretested to be sure that the information gathered is the information needed.

Fourth, data concerning the percentage of people visiting the business/attraction must be collected. It should be remembered, as in determining party size, that only people that traveled in the vehicle should be counted when asking how many people visited the business/attraction. For example, if three people traveled with the person in just the one vehicle to the destination and two other vehicles were also in the party, if the survey is not worded carefully, the person filling out the survey may tell you that four people (including him/herself) were in the party, but 14 people visited the business/attraction from all three vehicles. The number of people visiting the business/attraction should be worded as such that the answer would include only the people that traveled in the car with the person filling out the survey. If four people traveled in the car to Frankenmuth, then the maximum number of people visiting the business/attraction would be four.

Fifth, some businesses/attractions are of such a nature as to encourage people to visit them more than once on a trip. In Frankenmuth, for example, many people would eat at the same restaurant more than once during their

trip. Also, the two restaurants in Frankenmuth preferred

that their individual data be kept confidential, so the

data from both were combined. In this case, the study must

also be mindful of those individuals that ate at both

restaurants on the same trip and not count them twice. In

this case, the same individual(s) show up in the meal

counts of both restaurants and would be double counted if

the second, or third meal, etc., were not subtracted from

the total meals served.

Sixth, other data may be used to evaluate the visitor

count obtained from the model. Data collected about

overnight stays in Frankenmuth were verified by using room

tax data collected from the county. The researcher must

examine ways of verifying the data beforehand in order to

assure that needed data are collected and/or available.

LIMITATIONS AND FUTURE RESEARCH

A main limitation of this study was the length of the

survey questionnaire. While a significantly shorter survey

could have easily and more efficiently gathered the needed

information for the visitor estimation model, the research

client's need for other information increased the length of

the survey. Increasing the length obviously reduced the

response rate. While incentives helped boost the response

rate, the final response rate was very low (18%) and it increased the chance of non-response biases. Keeping the survey short and to the point will produce a higher response rate and reduce non-response biases.

Another limitation was the method for distributing the survey instruments. Placing surveys on the windshields of vehicles in parking lots, and other similar methods, has historically provided relatively low response rates. In this case, constraints related to the cost and length of the survey made other distribution and data collection methods impractical. A personal interview was not possible because of the length of the questionnaire, not to mention the high cost of paying individuals to collect the data. It may have been possible to sample tourists as they walked around Frankenmuth and collect their addresses for a mail survey; however, the same problem of costs came up. This method would have increased labor and postage costs putting the project considerably over budget.

Another significant limitation was a lack of comparable tourist visitation counts and estimates. Future research (in the same community) could focus on numbers to extrapolate from overnight stays or traffic counts giving further verification to numbers generated from businesses or attractions.

The low rate of response to surveys distributed during the evening sampling periods created another challenge. The question, as related to the model, is whether or not individuals coming during the evening time period are any more or less likely to eat at the restaurants, as a proportion of person trips, than the morning and afternoon time period. If visitors coming only in the evening are proportionately more likely to eat at either of the two restaurants, then the estimate produced by the model for Frankenmuth is overstated. The opposite would be true if evening visitors are less likely to eat at either of the two restaurants. It is impossible to say which, if either, of these scenarios is correct. Therefore, future research is needed to resolve this question.

Future research into this model should include other types destinations and other types of tourism. For example, it would be beneficial to apply and evaluate the model for a festival or event where visitation is known (i.e., by gate counts or ticket sales). Then actual visitation could be compared with the estimated visitation produced by this method. This would allow for further refinement of the model. Amusement parks, fairs, or other festivals may be especially useful for testing this method.

CONCLUDING REMARKS

A reliable method for estimating visitation to tourism destinations and events is needed. Although the model appears to provide reasonable estimates, further testing should be done to test and refine it. The model produced estimates compared favorably with other estimates of visitation. The model is also flexible in that it can be adapted so that it can be used in a variety of settings from small festivals to medium sized tourist destinations. While it is possible to use this method/model to estimate visitation to large dispersed tourist attractions, data collection may prove to be difficult, especially representative coverage of various locations that tourists may visit. Unlike Frankenmuth, where tourist congregate in recognized areas (e.g., a few visitor parking areas), it would be easier to under-sample or over-sample tourists and/or local residents. Sampling must be recognized as an important concern.

The overall usefulness of the model seems promising; however, further research needs to be conducted in order to verify results and to refine the process for other types of tourism. The methods should be tested in areas which have other sources of verifying information (e.g., tourist volume estimates) that can be used to evaluate and

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calibrate the model. Of course this requires that the

attraction/community collect and maintain various data that

indicates the volume of tourist visits. Unfortunately, very

few collect and maintain these counts.

APPENDICES

APPENDIX A

1999 SURVEY

Thank you for visiting Frankenmuth!

**Please answer the questions inside, seal the survey in the postage-paid
envelope provided, and drop into any US mailbox.**

We hope you enjoyed your visit.

**Annette Rummel, President
Frankenmuth Chamber of Commerce**

**Kevin Nelson
Project Supervisor (Michigan State University)**

The Frankenmuth Chamber of Commerce, in cooperation with the Michigan Travel, Tourism, and
Recreation Resource Center (MSU), is interested in your experiences while visiting Frankenmuth.

Please take a few moments to answer the following questions. Your opinions are important. We need the
input of both residents and non-residents of Frankenmuth! Your name will not be connected with this
study in any way.

When you have completed the questionnaire, please seal it in the postage- paid envelope provided and drop
it into any US mailbox. Also, fill out the postcard in the packet to be included in the prize drawings. You
could win a weekend and a dinner for two in Frankenmuth.

Danke Shöen (Thank you)

1) What is the zip code of your permanent residence? _____ **If you answered**
48734 and if all the other people that traveled with you on this trip in your vehicle
are also from Frankenmuth, please skip to question #57. If you answered 48734
and others in your vehicle are non-residents of Frankenmuth, please let one of the
non-residents fill out the remainder of the questionnaire.

2) What day and time of day did you arrive in Frankenmuth?

    Month _____ Day _____ Time _____   Example: June 3 3:00 PM

3) What day and time of day did you, or will you, leave Frankenmuth?

    Month _____ Day _____ Time _____   Example: June 4 2:00 PM

4) Was your visit to Frankenmuth:

   ☐ The only purpose of your trip
   ☐ The primary but not only purpose of your trip
   ☐ Not the primary purpose of the trip but planned to visit before leaving home
   ☐ Did not plan to visit Frankenmuth before leaving home on this trip

5) Please mark those activities and events you participated in while in Frankenmuth. Of those events you
checked in the first column, please indicate their importance as a reason for THIS trip to Frankenmuth.

	Participated in activity	Importance		
		Very Important	Important	Not Important
Sightseeing	☐	☐	☐	☐
Dining	☐	☐	☐	☐
Shopping	☐	☐	☐	☐
Visiting historic or cultural attraction(s)	☐	☐	☐	☐
Attending a special event in the city	☐	☐	☐	☐
Name of event _____				
Other (please specify) _____	☐	☐	☐	☐

6) Did you come to Frankenmuth as part of a bus tour?
        ☐ Yes **(skip to question #11)**
        ☐ No **(continue)**

7) Did you travel to Frankenmuth alone or with others?
        ☐ alone **(skip to question #11)**
        ☐ with other persons **(continue)**

8) How many persons traveled to Frankenmuth in your vehicle on this trip (including yourself)? _____
persons

9) Please indicate the age and gender of those who traveled with you in your vehicle to Frankenmuth on
this trip?

AGE	GENDER		Resident of Frankenmuth	
_____	☐ F	☐ M	☐ Yes	☐ No
_____	☐ F	☐ M	☐ Yes	☐ No
_____	☐ F	☐ M	☐ Yes	☐ No
_____	☐ F	☐ M	☐ Yes	☐ No
_____	☐ F	☐ M	☐ Yes	☐ No
_____	☐ F	☐ M	☐ Yes	☐ No

10) Were the persons that traveled with you to Frankenmuth on this trip:

- ☐ All family members
- ☐ Family and friends
- ☐ All friends
- ☐ Business acquaintances
- ☐ Club or organized group (Name of group: _____)

11) Was this an overnight trip? ☐ Yes   ☐ No

If no, go to question #16

12) How many nights did you spend on the entire trip? _____nights

13) How many nights did you spend in Michigan on this trip (including Frankenmuth)? _____nights

14) How many nights did you spend in Frankenmuth on this trip? _____nights

15) What type of lodging did you utilize for the nights you spent in Frankenmuth and in Michigan on this trip (don't include Frankenmuth nights in Michigan nights)?

Type of Lodging	nights in Frankenmuth	nights in Michigan
☐ Hotel/Motel	_____	_____
☐ Bed & Breakfast	_____	_____
☐ Campground	_____	_____
☐ Relative/friends home	_____	_____
☐ Other (type _____)	_____	_____

16) Was Frankenmuth your only stop on this trip? ☐ Yes   ☐ No **If yes, skip to question #19**

17) Did you visit any places outside the community of Frankenmuth <u>before</u> visiting Frankenmuth while on this trip? ☐ Yes   ☐ No

17a) If yes, which attractions?

18) Did you visit any places outside the community of Frankenmuth <u>after</u> visiting Frankenmuth while on this trip?   ☐ Yes   ☐ No

18a) If yes, which attractions?

19) Which of the following sources of information did you or a member of your party utilize in planning your trip to Frankenmuth? Check as many as apply.

- ☐ Employee of Frankenmuth Chamber of Commerce
- ☐ Brochure obtained from Frankenmuth Chamber of Commerce
- ☐ Friend, relative, co-worker, etc.
- ☐ Employee of a business in Frankenmuth
- ☐ Employee of a highway Welcome Center
- ☐ Brochure obtained from a highway Welcome Center
- ☐ Brochure obtained from Michigan Travel office (1-888-78G-REAT)
- ☐ Billboard
- ☐ Travel Guide; which one(s)? _____
- ☐ Newspaper; which one(s)? _____
- ☐ Magazine; which one(s)? _____
- ☐ Radio; which station(s)? _____
- ☐ Television; which station(s)? _____
- ☐ Internet; which site(s)? _____
- ☐ Other; please specify: _____
- ☐ None of the above

20) Please indicate how much money you spent in the community of Frankenmuth on yourself and others in your vehicle while on this trip. Please do not include expenditures outside Frankenmuth. If you did not spend any money in a given category, please write "0" on the line instead of leaving it blank. (Please use U.S. dollars)

- $_____ Lodging
- $_____ Restaurant and bar meals and drinks
- $_____ Grocery or convenience store food and beverages
- $_____ Gasoline, oil and other vehicle-related items
- $_____ Shopping for gifts, crafts, souvenirs, etc.
- $_____ Recreation and attractions
- . $_____ All other items or services

The next set of questions deals with your previous trips to Frankenmuth.

21) Was this your first trip to Frankenmuth? ☐ Yes   ☐ No

If you answered yes, please tell briefly why you decided to come to Frankenmuth, then skip to question #39.

22) In what year did you first visit Frankenmuth? 19___

23) How often do you visit Frankenmuth?

- ☐ more than three times a year; how many times per year? ____times
- ☐ three times a year
- ☐ two times a year
- ☐ once a year
- ☐ every two years
- ☐ less than every two years; what was last year you visited? 19___

24) Thinking back on your earlier trips to Frankenmuth, have your reasons for visiting changed over the years?   ☐ Yes   ☐ No

24a) If yes, how have your reasons changed? _____

25) Please indicate which months you have visited Frankenmuth (include this trip).

☐ January   ☐ May   ☐ September
☐ February   ☐ June   ☐ October
☐ March   ☐ July   ☐ November
☐ April   ☐ August   ☐ December

26) Have you ever attended any of the following events in Frankenmuth?

	Have Attended		Do you plan on attending in the future?		
	Yes	No	Yes	No	Unsure
Zehnder's Snowfest(February)	☐	☐	☐	☐	☐
Bavarian Festival (June)	☐	☐	☐	☐	☐
Volkslaufe (People's Race) (July)	☐	☐	☐	☐	☐
Summer Music Fest (August)	☐	☐	☐	☐	☐
Auto Fest (September)	☐	☐	☐	☐	☐
Oldies Fest (September)	☐	☐	☐	☐	☐
Arts & Crafts Display (September)	☐	☐	☐	☐	☐
Arts & Crafts Show (September)	☐	☐	☐	☐	☐
Oktoberfest (September)	☐	☐	☐	☐	☐
Lighting Celebration (November)	☐	☐	☐	☐	☐

The next set of questions pertains to your opinions of goods and services available in Frankenmuth.

Since you began visiting Frankenmuth, would you say that ...

27) the variety of gifts, crafts, and souvenirs is

☐ Better than it used to be
☐ About the same as it has been
☐ Worse than it used to be
☐ Don't know

28) the quality of gifts, crafts, and souvenirs is

☐ Better than it used to be
☐ About the same as it has been
☐ Worse than it used to be
☐ Don't know

29) the variety of restaurants is

☐ Better than it used to be
☐ About the same as it has been
☐ Worse than it used to be
☐ Don't know

30) the quality of restaurants is

    ☐ Better than it used to be
    ☐ About the same as it has been
    ☐ Worse than it used to be
    ☐ Don't know

31) the variety of lodging establishments is

    ☐ Better than it used to be
    ☐ About the same as it has been
    ☐ Worse than it used to be
    ☐ Don't know

32) the quality of lodging establishments is

    ☐ Better than it used to be
    ☐ About the same as it has been
    ☐ Worse than it used to be
    ☐ Don't know

33) the ethnic (Bavarian) appearance of the community is

    ☐ More evident than it used to be
    ☐ About the same as it has been
    ☐ Less evident than it used to be
    ☐ Don't know

34) the historical and cultural attractions are

    ☐ Better than they used to be
    ☐ About the same as they have been
    ☐ Worse than they used to be
    ☐ Don't know

35) the attitude of business employees with whom you've had contact is

    ☐ Better than it used to be
    ☐ About the same as it has been
    ☐ Worse than it used to be
    ☐ Don't know

36) the availability of services to travelers is

    ☐ Better than it used to be
    ☐ About the same as it has been
    ☐ Worse than it used to
    ☐ Don't know

37) the variety of goods and services you like to shop for is

    ☐ Better than it used to be
    ☐ About the same as it has been
    ☐ Worse than it used to be
    ☐ Don't know

38) the <u>quality</u> of goods and services you like to shop for is

    ☐ Better than it used to be
    ☐ About the same as it has been
    ☐ Worse than it used to be
    ☐ Don't know

39) The following list corresponds to the map of Frankenmuth attached to this survey. Please check the attractions that you visited while <u>on this trip</u>. Please keep the map of Frankenmuth for future reference.

Attractions

☐ Bronner's CHRISTmas Wonderland (1)
☐ Fantasy Carriage Company (21)
☐ The Fortress (18)
☐ Frankenmuth Brewery (38)
☐ Frankenmuth Mill & General Store (19)
☐ Frankenmuth Veteran's Memorial (36)
☐ The Timbers Golf Club (6)

☐ Chippewa Indian Memorial (82)
☐ Fischer Platz/City Tours (56)
☐ Frankenmuth Band Shell (81)
☐ Frankenmuth Historical Museum (49)
☐ Frankenmuth Riverboat Tours (39)
☐ Michigan's Own Military & Space Museum (7)

Dining

☐ Bavarian Inn Restaurant (51)
☐ Black Forest Brewing Co. (3)
☐ Edelweiss Restaurant (10)
☐ McDonalds (70)
☐ Zehnder's of Frankenmuth (22)

☐ Big John's Lamplighter (48)
☐ DaVinci's Italian Restaurant (71)
☐ Frankenmuth Kaffee Haus (35)
☐ Tiffany's (26)

Lodging

☐ Bavarian Inn Lodge (59)
☐ Comfort Inn (90)
☐ Frankenmuth Jellystone Camp Resort (5)
☐ Pinocchio's Bed & Breakfast (42)

☐ Cherry Street Bed & Breakfast (80)
☐ Drury Inn (66)
☐ Frankenmuth Motel (8)
☐ Zehnder's Bavarian Haus (2)

Shopping

☐ Aunt Hattie's Corner (37)
☐ Bavarian Inn Bear Den (53)
☐ Bavarian Inn Gift Shop (55)
☐ Black Forest Clocks (40)
☐ Covered Bridge & Leather Gift Shop (57)
☐ Frankenmuth Candyland & Cheese (4)
☐ Frankenmuth Clock Company (16)
☐ Frankenmuth IGA/Ben Franklin (73)
☐ Frankenmuth Toy Co./Kite Kraft (32)
☐ Frankenmuth Woolen Mill (33)
☐ Hush Puppies Factory Direct (12)
☐ Kern's Sausage (14)
☐ The Outlets at Birch Run (87)
☐ Pinocchio's (41)
☐ Rau's Dollhouse Miniatures (24)
☐ St. Julian Winery (76)

☐ Bavarian Inn Bake Shop (52)
☐ Bavarian Inn Doll & Toy Factory (54)
☐ The Bavarian Mall (72)
☐ Chocolate Haus/Birch Run (89)
☐ The Curiosity Shop (29)
☐ Frankenmuth Cheese Haus (46)
☐ Frankenmuth Gallery (34)
☐ Frankenmuth Taffy Kitchen (47)
☐ Frankenmuth Woodcarving Studio (15)
☐ Gramma's House (44)
☐ Jaami's Ice Cream & Frozen Yog. (31)
☐ Original Frankenmuth Fudge Kit. (30)
☐ The Pewter Kingdom (43)
☐ Rau's Country Store (23)
☐ Rau's Printery (25)
☐ Satow Drug Store (65)

- ☐ Schaefer & Bierlein (11)
- ☐ School Haus Square Mall (77)
- ☐ Der Weinhaendler (78)
- ☐ Willi's Sausage (64)
- ☐ Zeesenagel Italian Village & Gift (20)
- ☐ Schnitzelbank Shop (45)
- ☐ The Village Store (27)
- ☐ Wild Birds Unlimited (13)
- ☐ Zak's Bavarian Kandy Haus (28)
- ☐ Zeilinger Wool Company (9)

Community Services

- ☐ Blessed Trinity Catholic Church (83)
- ☐ First of America Bank (67)
- ☐ Frankenmuth City Hall (68)
- ☐ Frankenmuth United Methodist (74)
- ☐ Independence Village (63)
- ☐ St. Lorenz Lutheran Church (62)
- ☐ Cass River Boat Launch (79)
- ☐ Frankenmuth Bible Church (69)
- ☐ Frankenmuth Scout Build. (17)
- ☐ Frankenmuth Visitor Info. (50)
- ☐ St. John's Lutheran Church (84)
- ☐ U.S. Post Office (75)

The next set of questions inquire about your impressions of Frankenmuth. The scales below are sets of opposite statements. Please place an X at the location on the scale where it most closely reflects your feelings about Frankenmuth.

40) Very scenic ____ ____ ____ ____ ____ Not at all scenic
41) Difficult to get to ____ ____ ____ ____ ____ East to get to
42) Friendly people ____ ____ ____ ____ ____ Unfriendly people

43) Poor tourist info ____ ____ ____ ____ ____ Excellent tourist info
44) Highly advertised ____ ____ ____ ____ ____ Rarely advertised
45) Poor place to shop ____ ____ ____ ____ ____ Excellent place to shop
46) Very historical ____ ____ ____ ____ ____ Not at all historical

47) Hectic ____ ____ ____ ____ ____ Relaxing
48) A lot of things to see ____ ____ ____ ____ ____ Few things to see
49) Unsafe ____ ____ ____ ____ ____ Safe
50) Excellent lodging ____ ____ ____ ____ ____ Poor lodging

51) Poor restaurants ____ ____ ____ ____ ____ Excellent restaurants
52) Expensive ____ ____ ____ ____ ____ Inexpensive
53) Urban ____ ____ ____ ____ ____ Rural

54) Clean ____ ____ ____ ____ ____ Dirty
55) Fake ____ ____ ____ ____ ____ Authentic
56) Tasteful ____ ____ ____ ____ ____ Tacky

This set of questions will help us estimate the number of visitors to Frankenmuth. We will ask how many times you have eaten at Zehnders or the Bavarian Inn and how many persons dined with you on each occasion.

---

57) Did you eat at the Bavarian Inn Restaurant while on this trip? ☐ Yes   ☐ No
    If no, please go to question #60

58) How many **different** times did you eat at the Bavarian Inn restaurant
    <u>on this trip?</u> _____ time(s)

59) How many persons that traveled with you to Frankenmuth on this trip ate with you at the Bavarian Inn Restaurant (including yourself)?

Dining occasion 1: _____people
Dining occasion 2: _____people
Dining occasion 3: _____people

60) Did you eat at Zehnder's of Frankenmuth while on this trip? ☐ Yes ☐ No
   If no, skip to question #63

61) How many **different** times did you eat at the Zehnders of Frankenmuth
   <u>on this trip</u>? _____ time(s)

62) How many persons that traveled with you to Frankenmuth on this trip ate with you
   at Zehnder's of Frankenmuth (including yourself)?

   Dining occasion 1: _____people
   Dining occasion 2: _____people
   Dining occasion 3: _____people

63) What is the one thing you like most about Frankenmuth?

64) What products, services, or attractions would
   you like to find in Frankenmuth that are currently not available?

65) Please make any suggestions for improving the Frankenmuth travel experience?

The following questions will allow us to get a general understanding about you. We would appreciate you answering the following questions, however they are optional.

66) What was your household's total income in 1997 before taxes?

   ☐ Under $25,000   ☐ $80,000 - $99,999
   ☐ $25,000 - $39,999   ☐ $100,000 or more
   ☐ $40,000 - $59,999
   ☐ $60,000 - $79,999

67) Are you male or female? ☐ Female   ☐ Male

68) What is your age? _____ years

Thank you for your time in answering these questions. Remember to fill out and return the postcard to be included in the free drawing.
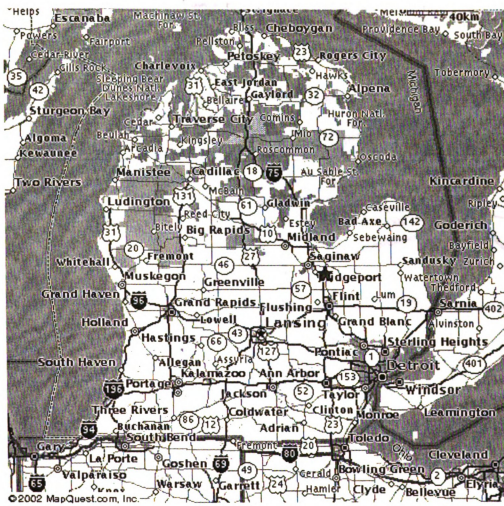
You indicate your voluntary agreement to participate in this study by completing and returning this questionnaire.

TTRRC
Frankenmuth Visitor Survey
172 Natural Resources Building
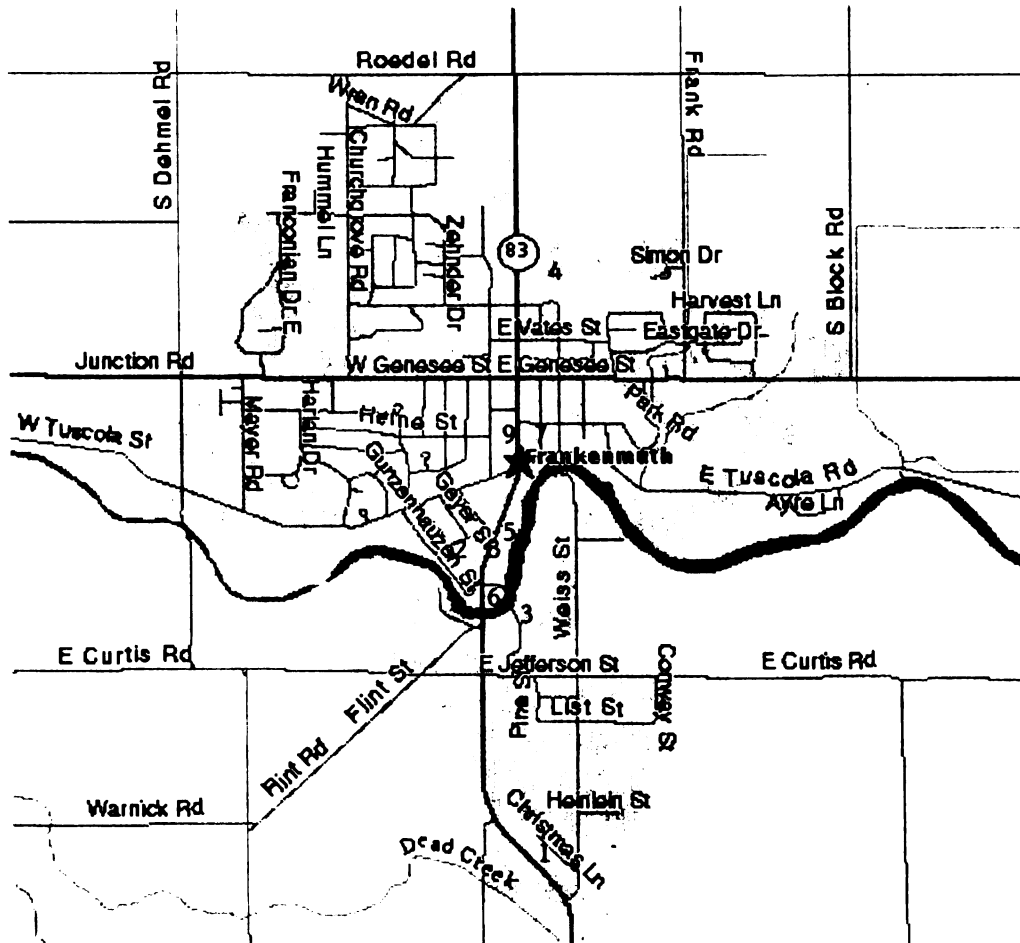Michigan State University
East Lansing, MI 48824-1222

APPENDIX B

MAPS

Location of Frankenmuth, Michigan

Survey Distribution Parking Lots

1   Bronner's Lot
2   Zehnders
3   East Covered Bridge
4   Bavarian Mall
5   Bavarian Inn Lodge
6   South Bavarian Inn
7   School Haus Square
8   CVB Lot
9   Drury Inn/Satow

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